

National Security

Imperatives and Challenges

The idea of this book came out of an irrepressible urge, which lay dormant in the subconscious probably since early childhood—the urge to alleviate the sufferings of people. It was etched in my mind by two fine people: *achan* and *valiammaman* (father and the older uncle). While I loafed fidgeting with a restless mind and body as a child on the quaint wooden furniture on the patio of our small but cozy rented house, slightly away from me, the two men would be exchanging dialogues on almost everything that influenced human life. Some of their statements were too powerful for the subconscious to resist registering. More than fifty years later and after serious research, I am making a conscious effort to release them. No more waiting for now.

From their random dialogues I gathered that,

- Positive detachment, by not getting into the plot, is very essential for anyone genuinely interested in finding a solution to a problem, and
- Ambrosia is not just for gods alone; it is available right here on earth for every human who can garner it.

National Security Imperatives and Challenges

Prabhakaran Paleri



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To
the individual human
(for whom this book is written)

Preface

The time has come...

National security is a term widely used in various forums on national governance when system fatigue overrides human existence in a knowledge-based society. It is a very practical subject and a convenient conduit to link the need of humans for a better life. It is practical and applicable in the modern world not only for national governance, but also for corporate management and even family goal setting—just as the principles of war can be made applicable to boardroom decisions and social activities. This book is not an effort to reinvent the wheel. It is an exploratory and analytical examination of the concept of national security in a people-centric outlook. The target human is the one out there on the lonely alley of life struggling on his own to overcome the drudgery of existence. There are about 6.6 billion plus such humans on the planet (July 2007). The concept of national security could provide relief to their existential aberrations. For this purpose, it has to be understood. The concept therefore, was drawn out and examined to arrive at a definition and identify its elements. The book is not specific to any nation, but to the people of any nation.

National security is a unique concept. A concept can be defined for identifying the system to which it belongs. The system has parameters and boundary. Therefore, if the parameters of the system are identified within its boundary, the concept can be visualised and defined. In this book, the concept of national security has been accepted as existent. It has been in practice and is continuously gaining importance in the socio-political system of every nation. It is not imaginary. The book is an attempt to identify the concept through verified parameters and understand its constituent elements and scan beyond. The period of this book is as long as the human experience can see and perceive correctly into the past and the future in their quest for well-being. In their long existence, humans have witnessed changes that affected their thinking process. At the beginning of the 21st century, the post-Cold War global order is readying itself. The concept of globalisation and the world reaction towards it are substantial. There is a clear and visible awakening in the awareness of national security. The world appreciates the trauma of militant terrorism and a consensus is emerging. The concept of national security covers all these and much more. It is vast. The book is specific to the concept from a contrasting viewpoint. It does not challenge the accepted thought processes on the subject. It goes further and draws an exposé of global security. In spite of

isolationism of groups and sub-groups within them, there are still societies and individuals who believe in accepting the entire human kind with concern, and in good faith as a single group. They have demonstrated inner strength in scripting verses like *Vasudeiva Kudumbakam*—the whole world is a family, and *Sarve Bhavanthu Sukhinah*—may all live happily. These verses of wisdom in Sanskrit accept the concept of “global security.” A chapter in the book glances at the topic. The idea is a hard sell even to the United Nations where the belief is “collective (physical) security.” The world is not yet ready to speak on global security. Perhaps it will never be. It will need adamant resolve rather than virtuosity to create it. That is why the United Nations appears to fail in its charter for global peace and remains in the eyes of its critics as an agent of impervious human desires that negates itself without resolve. The United Nations therefore, is relegated to a needy but hapless guardian of the human race. The reasons lie in human nature and not as much in limitations induced by governance or interference. It may take time, a lot of it, to make it functional towards charter specificity.

This book is documented in three parts. First, the concept of national security was drawn out and examined to arrive at a definition and identify its elements. This part critically examines the constituent parts of national security and separates the elements from conditional parameters. In the second part, each element is given an exclusive look before summing up the concept in the third part with respect to its trend, research possibilities, imperatives and challenges that need to be met by scholarly readers and strategists on the subject. This book is incomplete because besides inherent limitations, the concept itself is evolving. The entire work is the culmination of a long-cherished dream. It is earnestly expected that the book will be of assistance to policy makers, scholars, researchers and students of national security for an alternate approach, if they so desire. There is much more to be done in finding the associated pathways for clarity in the future for effective and progressive governance of human systems in a civilised world, or for the way the world can be made more civilised by behaviour modification. To that extent, the book is very human and looks upon the concept beyond the realms of the most misconceived notion of national security—the military aspects. Historically, the tragedy of human systems is not hidden; it is just there, open for evaluation. It is an irony in a human system when iconoclasts go in search of missing idols. Such contrasts are the ways of the social systems in the world.

In this venture, I am indebted to many. The foremost among them are my beautiful daughters, Shilpa and Sneha, who pursued every word I have spoken since their childhood and challenged me at every step in my life in the most adorable manner without reticence that only children can respond. Children bring tranquillity of innocence to a festered mind. They can perceive the world unabashedly. They are open to discussion without bias. They taught me. For a keen observer and projection analyst, children are excellent indicators of security. A professional look at them will tell one everything about the character and

conditioning of the group they represent. It could be a nation, society, family, school, orphanage or street. The projections are picture perfect.

While observing the plight of children in the world, it is tragic to see that there are children today who can pose an unprecedented threat to global security in the future in a way the world has not witnessed so far. Unknown to them and the world, they are being conditioned for causing unimaginable harm to humankind in every possible way. They are being conditioned in the labyrinth of their mindscapes in altered belief systems of dark knowledge. They are already there—in the battlefields as child soldiers; on the streets as child prostitutes; in schools of hate as future militants; on the trafficking routes as fleeing immigrants witnessing their mothers getting raped by the agents of human indignity and degeneration; in the fields and illegal units as child labour working with their nimble fingers; in the family consumer market as saleable commodities marketed by parents; in households, farmlands and market places as bonded labourers; in make-shift operation theatres as innocent organ donors; in the racecourses of primitive millionaires as strapped cargo on mad camels; everywhere, as displaced orphans; on city streets as beggars employed by organised criminals; in conflict zones as unaware weapons of fate with bombs strapped around their waists; sleeping in the arms of their starving mothers who fake cooking with stones in the boiling pots; sleeping in the corner of a dingy room turned towards the wall where their mothers are selling their souls along with their body to earn a day's meal; in city corners and tribal areas as traffickers for agents of drugs to nuclear materials unknown to them; in cyber space as degenerated hackers; in terror schools as potential agents of annihilation; in abandonment facing discrimination and slow death with HIV infection; banished in society facing abuse and humiliation from responsible citizens; in defective households as victims of abuse and fear; and all over the world as traumatised children of indifferent parents, in an otherwise beautiful world draining off their innocence to grow up into darkness. *The most poignant of all was the news from the deep African conundrum of human indignity, where even the United Nations' Peacekeeping forces were accused of rape of innocent girls yet to reach their puberty. Their fate and that of the world through them will be decided ironically by the trauma induced by the peacekeepers.* These children are getting geared for the inevitable and pose an array of threats to the world of tomorrow. Their numbers are swelling. It is going to be hard to predict the turn of events for the victims of child abuse. They may end up as mortal prostitutes, mercenaries, suicide militants, hostage takers, fixers, manipulators, transnational crime leaders, traffickers, pimps, drug pushers, and even as deranged megalomaniac national leaders who may set the society on fire. Even then, a close look at them today still shows a smear of innocence in their gravitated smile and wary looks. They are still beautiful, though tragic victims of human greed and insanity. It is not that the world is unconcerned. There are organisations at national and international level, both governmental and non-governmental, that are concerned about children. But in the absence of

an effective analytical mechanism the difference these organisations can make can hardly be noticed in the emerging world of child abuse. The roar of the coming Armageddon can be heard against this background exclusively from the victims of child abuse alone. It is like rafting calmly in a glossy stream with the sounds of the rapids that wait downstream increasingly audible. In the concept of national security, the children have a separate role. They are to be seen as a separate entity lest they should end up as agents of death and mayhem that the world will realise only too late. This is a special part that is not mentioned further in the book.

I value very much the encouragement, assistance and knowledge I received from my family, teachers, colleagues, friends, well-wishers, strangers whom I met in various parts of the world and even those whom I never met, but from whose intellectual and creative works of life I have had opportunities to learn. I know each one of them, including strangers; I thank them. The world has been the laboratory.

At the end of this exhaustive, exploratory and analytical examination of human saga, I believe that the concept of national security has all the ingredients of a thriller and awesome potential of a cult to become an alternate religion for civilised believers. The world perhaps, may never witness a new religion under a fresh god again. The religion of national security keeps god beyond with due reverence.

This book is written for a wide range of readers—from students to presidents and dissidents to conformists. Though national security is a very practical subject, the book does not propound any practical solutions to the problems of humanity. Instead, it asks questions and provides the background to the willing to question, appreciate and identify the problems. It is a primer on the concept of national security with questions that are yet to be answered. The subject has to be analysed in detail in its exclusiveness based on further studies and serious analysis. The book may appear India-centric; this is natural because of the author's nationality and familiarity. In a different sense, India is a wonderful canvas for studying the concept of national security.

National security in theory and practice is a group subject. It is not the domain of a single expert of a kind. There is no specialist in national security. It is teamwork under leadership of excellence. What is important is the consistency of purpose—providing comfort to the people of a nation and thus the people of the world, in their physical, mental and emotional domains as an ongoing process throughout their lives.

This book is written in open style suitable for every kind of reader—there are repetitions to reinforce the theme, seeming contradictions to think “how” not “what,” questions to ponder, statements to repudiate and challenges to confront—all with a bit of implied arrogance smeared in to ignite the critic. An inquisitive but hurried reader can approach the subject from any chapter and even paragraph. It doesn't have to be sequential—it could even be read in reverse order of layout. It is a ‘read anywhere’ book.

Finally, I must add that I have deep respect for women. They are superior to men in design—I believe with reasons. I have been extremely careful to see that there is no room for gender bias in this book.

Your suggestions about this book will be valuable to me for knowledge addition. I would appreciate them at *ppaleri@hotmail.com*.

PRABHAKARAN PALERI

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Abbreviations

ABMT	Anti Ballistic Missile Treaty
AI	Artificial Intelligence
AIDS	Acquired Immuno Deficiency Syndrome
BBC	British Broadcasting Corporation
BTU	British Thermal Unit
C ²	Command and Control
C ⁴ I	Command, Control, Communication, Computers, Intelligence
C ⁴ IS	Command, Control, Communication, Computers, Intelligence, and Surveillance
C ⁴ ISR	Command, Control, Communication, Computers, Intelligence, Surveillance and Reconnaissance
CAV	Common Aero Vehicle
C _b	Cumulonimbus (cloud)
CBA	Cost Benefit Analysis
CBM	Confidence Building Measures
CEHAT	Centre for Enquiry into Health and Allied Themes
CIA	Central Intelligence Agency
DALE	Disability Adjusted Life Expectancy
DCE	Direct-Covert-External (threat)
DCI	Direct-Covert-Internal (threat)
DNA	Deoxyribonucleic Acid
DOE	Department of Energy
	Direct-Overt-External (threat)
DOI	Direct-Overt-Internal (threat)
EC	European Community
EDS	Economic Defence Spending
EEZ	Exclusive Economic Zone
ESA	Extended Seabed Area
ESP	Extra Sensory Perception
FAO	Food and Agricultural Organisation
FBI	Federal Bureau of Investigation
FDI	Foreign Direct Investment
FII	Foreign Institutional Investors
FOS	Foot of Slope

GDP	Gross Domestic Product
GDS	Gross Domestic Savings
GM	Genetically Modified
GNP	Gross National Product
GoM	Group of Ministers
GT	Gene Technology
HCV	Hypersonic Cruise Vehicle
HDI	Human Development Index
HGP	Human Genome Project
HIM	Human Investment Management
HIV	Human Immuno Deficiency Virus
HMIS	Her Majesty's Indian Ship
HRD	Human Resource Development
IAEA	International Atomic Energy Agency
ICBM	Intercontinental Ballistic Missile
ICE	Indirect-Covert-External (threat)
ICG	Indian Coast Guard
ICI	Indirect-Covert-Internal (threat)
ICMR	Indian Council of Medical Research
ID	Internally Displaced
IDSA	Institute for Defence Studies and Analyses
ILO	International Labour Organisation
IMF	International Monetary Fund
IMO	International Maritime Organisation
IOE	Indirect-Overt-External (threat)
IOI	Indirect-Overt-Internal (threat)
IOR	Indian Ocean Rim
IPCC	Inter Governmental Panel for Climate Change
ISO	International Standards Organisation
ISP	Internet Service Provider
IST	Indian Standard Time
IT	Information Technology
LAN	Local Area Network
LCS	Legal Continental Shelf
LOC	Line of Control
LTL	Low Tide Line
MAN	Metropolitan Area Network
MAV	Micro Aero Vehicle
MCSR	Monitoring, Control, Surveillance and Response
MIC	Methyl Iocynate
MNF	Mizo National Front
MSF	Médecins sans Frontières
NAFTA	North American Free Trade Agreement

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NCW	Net-centric Warfare
NDC	National Defence College
NEO	Near Earth Objects—(also neo)
NGO	Non-governmental Organisation
NIC	National Integration Council
NSA	National Security Agency
NSC	National Security Council
NSI	National Security Index
NS _{max}	NS—Max (National Security Maximisation)
ODA	Official Development Assistance
OPEC	Organisation of Petroleum Exporting Countries
OSI	Open System Interconnect
PC	Personal Computer
PSM	Policy Statement Mapping
PSYOPS	Psychological Operations
QED	Quod Erat Demonstrandum
R&D	Research and Development
RIS	Rate of Infant Survival
RMA	Revolution in Military Affairs
RNA	Ribonucleic Acid
SAM	Strategic Area Mapping
SARS	Severe Acute Respiratory Syndrome
SDI	Strategic Defence Initiative
SIPRI	Stockholm Peace Research Institute
SLM	Strategic Location Mapping
SLOC	Sea Lines of Communication
SLOT	Sea Lanes of Traffic
SWOT	Strengths, Weaknesses, Opportunities and Threats
TID	Time-Intensity-Distance (cell in threat analysis)
TMC	Threat Matrix Cube
TNCC	Trans-national Corruption and Crimes
TPM	Threat Perception Mapping
UAE	United Arab Emirates
UAV	Unmanned Aerial Vehicle
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNHCR	United Nations High Commission for Refugees
UNICEF	(Formerly) United Nations International Children's Emergency Fund. (Now) United Nations Children's Emergency Fund
UNIPCC	United Nations International Panel for Climate Change
URL	Uniform Resource Locators

US	United States
USA	United States of America
USCG	United States Coast Guard
USSR	Union of Soviet Socialist Republic (the erstwhile Soviet Union)
WAN	Wide Area Network
WHO	World Health Organisation
WMD	Weapons of Mass Destruction
WMO	World Meteorological Organisation
WTO	World Trade Organisation
www	worldwide web

Part One

Significance of National Security

Ah.... The joys of living. There is nothing quite like it

—Phrase from an Advertisement.¹

There is no such thing as security

—A witness to the attack on the
World Trade Center, New York, 11 September 2001.²

The journey in search of the elusive concept of national security passes through the vicissitudes of the short and rugged human life where chance is the only companion. An attempt in remoulding chance will point out to the theory of limitations. According to this theory, everything is limited in its orderly state. When the limit is exceeded, chaos is certain. Is the concept of national security beyond the limiting line? Will an attempt to cross the limit invite disaster? Even then, there is no restriction in making an approach.

The theory of limitations also hints at restrictions in tampering with the process of evolution and, if this does happen the consequences of such action. The science of chaos is an outcome of this theory, which falls within the apparent irreversibility of human life with its base firmly buried in time. In this amazingly and unimaginably complex conundrum, the puzzled and perplexed bipeds called humans still struggle to survive as they did when they were primitives. Survival is not guaranteed. However, humans not only want to survive but also want to live their lives to the utmost. It is within this struggle for existence, somewhere between despair and hope that the concept of “national security” hides in a world divided by nations; the terminology does not matter.

Notes

¹ Phrase from an advertisement in *Newsweek*, 6 August 2001.

² Channel News Asia, TV Programme, 13 September 2001.

1

Introduction

In a human system, the future is discernible in the past.¹

Once upon a time, as the story goes, there was an ideally perfect place on earth. Whether it was a fact, legend or a parable of human virtues, it stood for everything that was ideal for a human system to live, multiply and survive in. It was said to be morally, socially and politically balanced, and stable. Plato² (427–347 BC), the Greek scholar and philosopher, student of Socrates³ (469–399 BC), teacher of Aristotle⁴ (384–322 BC)—all propagators of intrinsic principles of life—described it as paradise on earth. Generations of people lived there in absolute weal, under the primacy of law. It was known as the Island of Atlantis—a name that is subliminally nostalgic.⁵ According to legend, Atlantis was located in the present day Straits of Gibraltar and flourished for thousands of years. Everything went well until the Atlantians purportedly became greedy, wicked and impious with avarice. That was when the gods intervened. The sea swallowed up the entire society within a day and a night without trace, when a powerful earthquake and volcanic eruption destroyed the paradise forever. Since then, believers have been looking for Atlantis everywhere within a selective perception. They are still looking... And every human is constantly in search of the elusive perfect life without the existential dread. Thomas More⁶ (1478–1535) in his novel *Utopia* (1516) brought the concept of an ideal state into the open. The word became synonymous with something impossible—an idealistic dream coined from the Greek *ou* (not) and *topos* (place), meant “nowhere.” It suggests that such a place, where everything is perfect, is impossible to find.⁷ But heading towards an objective, even one that is drenched in idealism, has realism embedded in its dynamics. The efforts become pragmatic with determination. Breathing dynamism into a static philosophy in an attempt to make a system perfect is better governance than dispersing it as non-functional and idealistic. What ignites this study is the concept of the unachievable perfect system. The perfect settlement of Atlantis was destroyed between 800 BC and 500 BC by the cascading effect of natural disasters.⁸ Obviously, the Atlantians did not foresee them. They did not have the means to understand the dynamics of natural disasters. There was no early warning system or contingency plan. They did not cater for disaster security. The calamity came unbeckoned and obliterated the unprepared human system. Storytellers blamed it on the people who had invited

the wrath of the gods. Is the world any wiser today? Whether Atlantis was a myth or Utopia an idealistic concept, narratives of idyllic states existed in many parts of the world in the form of parables and tales. The idea of perfect governance based on the values of organised life always subsisted in human intellect. The story of Atlantis and the Utopian notion highlight the:

- Concept of an ideal state and its nature
- Subliminal desire of humans to belong to such a state
- Ubiquitous urge to search for a panacea for life's travails
- Importance of the rule of law
- Need for competent and value based governance to prevent decline
- Need for preparedness for contingencies
- Acceptance that no governance can lead to a Utopian system
- Perennial hope for better life as the driving force of existence

THE HUMAN SYSTEMS OF YORE AND TODAY

There is no edifice on earth that points out precisely when and where the first human biped stood up tall, scratching the itchy patch on its round head as if to configure the brain inside. Such information lies buried in the sands of time. With today's intellect, one can imagine that it may perhaps have felt like a stockbroker in a bear hug, in the middle of the crowded and sweaty trading floor of a stock exchange. The uneasy feeling of an impending crash would have reverberated in its primitive neurons. Perplexed and feeling like a peeled banana, the lone thinking biped would have understood that the end was near without jaws, claws and size. Yes, size did matter those days. The momentary insecurity would have digressed into mortal fear before a tiny signal from somewhere in the brain directed it to huddle with other similar and equally perplexed peeled bananas. It was the first directive for survival from a rescue centre—the brain. Since then, humans on this planet, frightened to the core, have huddled together in support and protection and surviving all odds, have multiplied. In the beginning it would have been a relaxed life with practically nothing to do but hunt, eat, copulate and survive. On second thought, what do humans do today?⁹ They repeat the same activities in changing styles. That is development.

Human systems existed in groups, relatively civilised within the absolute system.¹⁰ Many human settlements advanced naturally within the constraints of the period they existed in and vanished without trace under unforeseen circumstances beyond their control. These settlements were in the form of societies. Historians used societies as the intelligible units of human settlements for their studies.¹¹ Civilisation, for some, means an advanced human society.¹² Another way to look at the term is, as the total product of human creativity and intellect at a given time. As intellect surges ahead there is also uncontrollable destruction of lives and environment. Intelligence has an inbuilt affinity for self-destruction. Within the varying intellect, the study accentuates the principle of a single

civilisation at any given time. The civilisation model is that of a long creepy-crawly worm that envelops the entire human system with graduating sections of development—a wholesome “train” with differently graded compartments. This is perhaps not a good example, but the perception is that at any age of historically recognised civilisations, the world also had less civilised societies within them. It may be considered an imbalance, but actually it is the way the human society creeps towards progress between two different ends—the head and the tail—on either end of a long middle section. The question is, “what if an element or a section of the “worm train” remains static or is destroyed?” Static or arrested societies can be seen at different sections towards the end of the train, but they do move forward, though relatively slowly compared to certain other sections. Even at the end there is forward movement, provided there is no destruction by extinction. Yet, even if the sections remain static, the train of civilisation has the capacity to stretch. It continues to creep and crawl forward by regeneration like the amputated tail of a lizard, even when destroyed at sections. Humans have repeatedly shown that they are determined to survive against all odds. The worm design is perhaps the secret by which they achieve this feat. If human systems developed uniformly and concurrently, the shape of the worm would have changed similarly to that of a globule. In such a state, humans as a whole would be most vulnerable. If it perished, there might not be another opportunity. Historically, the idea of civilisations was different. But according to the creepy-crawly principle, in any age of historically recognised civilisations, there were less civilised societies within them.¹³ In some cases, they were called primitive societies though it is not an acceptable terminology in this study, except for the purpose of offering an explanation. How primitive is primitive? It cannot be defined to a consensus. Relatively civilised societies existed within a human civilisation all the time. The only difference today is, that they exist within the boundaries of nation-states and not in a society of disjointed settlements. The asymmetries of lifestyles continue today. Human systems are not identical in their character and growth, but in a civilisation they are bound by common traits—both external and internal. That is how national security studies have to see people—as a whole; not as different groups but a single civilisation with people at different stages of development. This book is not about civilisation and the intention is not to challenge the wisdom of scholars on the subject. The aim is to view the entire human system as a single civilisation growing dynamically at various stages of development within it. It makes the identification of the concept of national security, easy and practical. Under the historically accepted principle of multitudinous civilisations, there were also arrested and abortive civilisations—arrested by terrain limitations and aborted by situational challenges for existence.¹⁴ Surprisingly, the restrictive nature increased longevity. They did not collapse like endangered primitives or the more civilised and unrestricted.¹⁵ While a normal civilisation tends to develop in an unrestricted environment and then decay either gradually or suddenly, the restricted civilisation gets period saturated within a boundary. On the other hand, growing civilisations gather more disorder when

they cease to meet the challenges of change during the process of growth. Abortive civilisations had to struggle against a series of excessive challenges rendering them incapable of facing them. Among the civilisations that survived and flourished, many found their end under various and sometimes, mysterious circumstances that are yet to be deciphered. A comparative study of the concept of civilisation leads to some vital points about societal human systems:

- The urge to develop and civilise is evolutionary to humans
- Human systems remain at varying degrees of development
- Each societal system is evolving at varying pace within a larger society
- Some of the human systems were aborted under the strain of development
- Reasonably developed human systems were called civilisations and were emphatically distinct from the so called “less developed” societies, with a clear and visible class difference
- Some societies were restrictive in nature and thereby got period saturated
- Some of the civilised systems declined along with primitive societies that could not sustain themselves, giving way to newer systems
- Differing systems exist today not as universal societies, but as nations
- Nations sometimes behave as part of larger societies
- A human system survived against all odds as long as it was governed well
- Where governance failed, coping behaviour prolonged the survival
- Not all human systems were mutually exclusive; some affiliated with others. Such systems either grew from the roots or mutated
- Some of the human systems succumbed to natural forces beyond their control or under self-destructive forces¹⁶
- Civilisations continued to spring up even after they vanished from the world at different times¹⁷
- Some of them had neither a predecessor nor a successor¹⁸
- Today, the world can be viewed as a single civilisation comprising nation-states, with formal and informal groups external or internal to them
- Under such conditions, people move towards a global ideal though under tight conditions of impracticality in a single civilisation
- Under the universal viewpoint of a single civilisation, there cannot be clashes between civilisations. There can be clashes between different human systems governed by different ideologies within the civilisation
- Extended further, this means that clashes witnessed today are not “between” civilisations but “within” a giant civilisation, like turbulence in a thunder-cloud¹⁹—the levels do not matter

More than the clashes within a civilisation, the clashes within the human brain are more severe and complex in the study of national security. Often such clashes lead to major changes in the world depending upon the status and authority of the individual in the society. At critical times the brain always came to the rescue of the individual, churning out ideas for survival. For human beings, it became more

important than their feeble physique for survival. The physique was a tool to use tools. Anthropologists, historians, psychologists and physiologists—all wrote dissimilarly about humans on similar things. It was the brain that warned *unite, lest you should perish*. But individual perceptions told them to *be selfish, lest you should suffer*. The limbic, neo-cortex and the reptilian brains in the human neurological system constantly clashed with each other to come to a conclusion on what to do. The clashes within human mindscapes act as influential agents of change in a human system. There are many examples of how clashes in a single mind have changed human lives with chilling consequences. Rationalisation of the deed, which is the ultimate dowser of the culpable mind, controls the terrifying guilt that soon follows a fiery action. Here, the right and the wrong of the action are irrelevant, because they are relative to the perceiver.

THE INVARIANCE OF THE HUMAN SYSTEM

Years have passed since Atlantis was lost. Time never stood still. Earthquakes, tsunamis and other disasters made human systems vanish, but human beings have persisted and multiplied. The world has a long, recorded history of its past. The depth of the period and clarity of vision are increasing constantly. Humankind is vested with capabilities that are larger than ever. A fraction of these capabilities is sufficient to create human systems a thousand shades better than Atlantis. A world that can dwarf More's Utopia is very much within a handshake between people, provided they are willing for it. Utopia has lost its credential of impossibility many years ago; it is just that humans are not aware of this. On the other hand, the world is also made of oddities of sorts that can make even an average lifestyle a distant dream. The world today is in no way different from the world of yesterday in its character, outlook and behaviour. The changes are in appearance, ageing, thinking process, capabilities, etc., among other superficialities. But what makes the world truly unique are the unchangeables. The core oddities are the same as they were yesterday. The form may be different. The character of civilisations may have changed by a dash of civility upgradation. But a Buddha, Aristotle or Nero may not find the world much different on a revisit. A majority of the human population find their lives as difficult as their ancestors found it to be. There is no sign of this changing in the future. In spite of the continuing oddities within the unchangeables, the world is fine and all is well within its peculiarities. Within this invariance many things happen with remarkable regularity irrespective of the period setup. The world goes on repeating the oddities supporting the invariance in a human system. The invariance can throw light on the shape of things to come, and thereby on the ways of managing them. The human race has seen life in every possible shade and its repetition in time. From a different perception, a bifurcation in human life may not be freaky or odd. They could be natural to life heavily imbibed in the survival principle by design. "Survive against all odds" is the call. The oddity lies in their relative perception. The world has changed externally, but human behaviour

seemingly has not. They still jump at the accidental sight of a coiled rope mistaking it for a deadly viper. In a reflex, blood rushes to the feet and the face goes pale. The extra blood is needed for the feet to jump and run—the primitive instinct for survival. Emotions remain the same as in the beginning. If there is change, it is infinitesimally small compared to the span of human existence. The rate of change is not easily perceivable. The changes that can be visualised are in the indicators of development, affluence, prosperity, environment, etc. There is a law of invariance here that states that, *the changes in the core behaviour of a human system, while a reality, is too negligible to notice and, therefore, for a psychosomatic system application relative to humans, it is sufficient to presume the model applicable today would be constant in time whether it is past or future.* Under the law of invariance, what a human experiences in a life span will be more or less similar to what one would have faced and experienced earlier. Only the milieu will be different. It is close to what Marcus Aurelius Antoninus (161–180 AD), the philosophic emperor of Rome, has written as the uniformity of nature. He stated that, *in the light of the uniformity of nature, a man of forty with moderate intelligence had seen the entire past and future.*²⁰ In the age of Marcus, forty years was a good sign of longevity. Today, people live longer and drag through life repeatedly. So did their ancestors, as will those who succeed them. Who said life sucks? It is worse. Hail the law of invariance! Hail good ole' Marcus! But in spite of this drudgery, no one has ever wailed at the time of birth, *me ain't not going down this block for god's sake.* In fact, everyone wants to stay on as long as possible. Fear of death is immortal! It does not matter even if activities in life are mere repetitions within the law of invariance. This is not to say that the world stands still. There are changes every moment. Some even threaten the planet's future. But they do not readily attract notice. Internal changes in life systems are even slower than external changes in the ways of life. Within these changes, indistinguishable by the moment under the overriding law of invariance, it is the primacy of life that is to be facilitated.

THE CONCEPT OF NATIONAL SECURITY

Under the conditions of law of invariance, finding a solution to human miseries is comparatively easy if the situation is analysed within the framework of a nation, fixing accountability to those responsible for governance. National security is a concept that can be used to explore the characteristics of the ideal state from a human perspective and make it happen by pragmatic governance. The concept is ubiquitously discussed in forums on national interests. The evolution of the concept and its elements were seemingly gradual.²¹ Therefore, the concept can be defined and its elements identified at any point in time within the changing scenario. It can be further modeled in a terrain specific outfit. The applicability of research on national security has never before been as enhanced as it is today. The monocentric post-Cold War world is advancing technologically, economically, humanistically and interactively. The well-being of people in an advancing world, which will remain

always monocentric in a comparatively stable environment,²² is ultimately what will govern the concept of security, whether nationally, regionally or globally. The world is structured within the boundaries of obsessive nationalism. While, on the one hand nationalistic thoughts are waning under global, ethnic or personal beliefs, on the other, the nation-states tend to disintegrate into “molecular and insular states” after the Cold War. There are more nations today than there were before the Cold War. There is enhanced awareness on national security among planners and policymakers. But the thoughts are focused primarily on military engagement along with diplomatic engagement, supported by the laws of economics. There are changes though; non-military aspects of national security are getting recognised. Military facets are being drawn into the “lean and lethal” concept and limited engagement rules. Nations are not free to invade or attack at will. Though limited to the national power of the invader, there are constraints of consensus requirement under worldwide watch. This situation and the asymmetry of power equations have raised chances of proxy wars and militant activism—war in another form. This is a transformation that leads national security beyond the realms of pure militarism, to engagement by other means including alliance militarism. Investigation into these subjects not only makes the study interesting, but also enables the understanding of procedures that will help in articulating the elements of national security in the changing world, much beyond the realm of military security.

The term “national security” comprises two words: *nation* and *security*. While determining the historic perspective, it is necessary to examine the words clearly with respect to their origin and philosophy. Security is an older notion within the individual concept and more subtle than nation. Security means “untroubled by danger and fear.” It is a conditional state of mind that makes one feel secure. It is hidden within the ambit of life, and is the essence of existentialism and survival. The idea of security originated when the feeling of fear intervened with the psychological trepidations of survival anxiety. It continues today as existential problems. Existentialists²³ prefer to term this state as the “existential dread”—anxiety created by uncertain existence. For the strategists, existential dread is the “plain feeling of insecurity.” The concept of nation-state provides certain cutback to such a feeling. The nation-state originated with the Treaty of Westphalia in 1648²⁴ and reaffirmed in the post French Revolution²⁵ scenario. The origin of the word nationality dates from the 17th century.²⁶ But more than the concept of nation-states, the organised existence of humans in groups of various forms and traits provided the basic foothold for survival from the beginning. It extended to nation-states in an organised manner irrespective of the form of governance they adopted.

The study of national security is required to be carried out systematically and circumspectly in order to identify the truth from facts. Hypotheses are to be tested to avoid errors in diagnostics. Symptoms should not be misinterpreted for ailments. The overarching hypothesis in this book is the existence of the concept of national

security and its elements. Further hypothesis is that the concept itself is evolutionary in its original form with respect to a human system and, therefore, vital to a nation-state. If it is so, the concept of national security envelops the well-being of the people of a nation, and not their physical security alone. Hence, it comprises elements of both a military and non-military nature. Considering that the subject is evolutionary and related to human aspirations of survival, the period in the study of national security will be theoretically the period of the entire human existence in organised groups. It has been assumed that national security, as a concept is not a function of time though being a humanistic and evolving subject it is related to it. What was important is not the past, but its impact on the current scenario and futuristic convergence in a global environment.

The concept of national security is historically cited at various levels, but not universally defined. Defining such a concept poses the danger of inducing yet another definition. Under the evolving circumstances, giving a final definition is difficult, as chances exist for unforeseen variables to pop up in future. The subject is highly debatable and the faults could be far too many. Therefore, the definition of national security in this book is to be seen as a future perspective, along with other definitions already existing. The topic can accommodate changing definitions by its evolutionary nature. The importance of the topic and its relevance in today's world is the greatest supporting factor. This is a subject where it is important to think "how" and not "what." The study is practical and the results applicable, hence useful to a nation and the world in general. The study demands exploration into:

- (a) Human evolution and behaviour
- (b) Origin and elements of security
- (c) Origin of nation-states and their continuity
- (d) Elements of national security
- (e) Trends in national security
- (f) Chances for modeling national security
- (g) Points for research
- (h) The concept beyond—global security

Human evolution and behaviour is the basic framework on which the study of national security is based. Colin Wilson explains Darwin's²⁷ theory of evolution and points out that knowledge systems prevailed even in the old world. He writes about different steps in evolution in which an advanced society declines and vanishes only for another to start afresh through a repeat process.²⁸ The process of civilisation is not continuous but goes through steps of advance and retreat. He wrote about the possession of a grand interrelated and complete system of knowledge by the Egyptians. For example, the Sphinx dates back to 10500 BC. It was a different civilisation from that of today, according to Wilson. The process of civilisation was not linear, but in abrupt bursts degenerating after a bout of civilised activity. He interprets the connection between the Chinese *I-Ching* and the RNA-DNA

model to show the advancement of previous humans in civilised, knowledge-engineered societies. According to him there are different steps in human evolution and the step now, today's civilisation, commenced in 1500 BC. All these findings could be flashes of insight that, in his words, cannot be achieved by explanation. It has to come spontaneously. Abraham Maslow (1908–1970)²⁹ wrote about such feelings. Colin Wilson's theory of disjointed periodicity of civilisation³⁰ does not follow history as a vividly recorded document of human advancement. Records show that the Egyptian pharaohs succumbed to powerful robbers and aggressors and the curse of the advancing sand dunes (climate change?).³¹ It would have been a different story for the lost city of Atlantis, which was presumed to have been buried under volcanic ash beneath the sea. The assumption here is that today's civilisation is linear and unique, and is the only one the study has to be concerned about. The origin of security can be examined through behavioural, historical, political and even mythological approaches. This is especially so, in order to get a clear indication of the elements of security and their evolution through the ages. The origin of nation-states is relatively new. Their continuing to remain so is evident in today's human systems. The Treaty of Westphalia and the French Revolution turned human systems around to the concept of nation-states. The process, as it stands today, is irreversible. There lies the concept of national security and its elements. The trends, modeling to understand the subject, and research areas relate to the futuristic character of the concept with roots firmly in the past. From this perspective, the study becomes an indefinite voyage through time to discover the truth from facts for human well-being within reasonable exactitudes. The journey may end beyond national security—with a view of global security. The methodology in the study of national security is best when made exploratory and analysed by historical-analytical method. Also, closer is the heuristic knowledge acquired through investigation and discovery. In studies like this, *a priori* knowledge can contribute seriously for deductive, as well as probable inductive truth in findings. The entire study therefore, becomes diagnostic and non-experimental in scope and analysis, based on the principle—seeking truth from facts.

QUESTIONS IMPOSSIBLE

Utopia is not impossible. There are people living at higher levels than Utopian environments with better facilities than the legendary Atlantis could provide. But how much do the modern day Atlantians feel for life? From this point of view, the well-being of a society as a whole becomes abstract and philosophical. Abstractionism poses questions that are impossible to answer without research and observations:

- Are human societal systems recycled so that each civilisation is an image of the past with a random jig at the end of advancement before decline?
- Was there any hiatus in the origin of human species or civilisations?
- Can there be more than one civilisation in the same period?

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- Does the world today have more than one civilisation with its own primitive systems within each, or is it one big human civilisation?
- If so, what are the limiting characteristics of human expectations?
- If the past is repeated in the present and then in the future, why did humans fail to learn lessons from the past and implement them in the future?
- Do haves to be balanced by have-nots in a human system?
- If so, is equality an impossible myth?
- Can a constitution guarantee the rule of law?
- Is democracy the best form of government or is it corruption and avarice decentralised?
- If so, is there a more advanced system of governance?
- Will human systems graduate beyond nation-states?
- If so, does global security ring a bell?
- Is there a rhythm in human advancement?
- If so, can it be outpaced for faster advancement?
- Can biomodeling be a new approach path?

There are thousands of such questions. The well-being of human existence is perched precariously on the glimmering hope of finding answers to them.

CONCLUSION

Human beings are hardly perfect. They are vulnerable. They lived in social groups for the purpose of survival. Existential problems followed them invariantly. Advancements seemed cyclic from order to disorder and back to order. Changes do occur but the core of human existence remains unaffected by such changes. The gladiators transformed themselves into professional sports personnel; dancers and court jesters into entertainers; shadow plays to blockbuster movies and kings slowly transmuted to elected rulers. These are minor changes within the unchangeables, variance within invariance. At the core of it, everything remains the same—kings, soldiers, pirates, traders, killers, robbers, thieves, prostitutes, entertainers, teachers, priests and many others in life's assignments. The law of invariance prevails over life. It makes the job of the provider of well-being of the people less complicated under certainty. The deluge of harshness in a human system can be observed for the beauty of challenge it offers to governance. Maximising the well-being within this deluge is more for the benefit of generations to come, but those who tread this path are bound to meet with opposing interests.

Notes

¹ Changes in a human system are very much within the handling capabilities of humans. The behaviour patterns of human beings remain unchanged, or the changes, if any, are seemingly negligible. This brings up the point of unchangeables that lead to the law of invariance. This finding is important in analysing the concept of national security or the security concept of human systems today. It also explains the fact that bringing people

towards maximum well-being is much easier under the law of invariance since, to a close observer the future is visible in the past.

² Robert Audi (ed.), *The Cambridge Dictionary of Philosophy*, Cambridge University Press, Cambridge, 1999, p. 709. Plato's notion of the observable world was an imperfect image of a realm of unobservable and unchanging "forms." His idea of a best life was centred on the love of these "divine" objects.

³ Ibid. p. 859. Socrates was the exemplar of the examined life. According to him, only such a life is worth living. Because of his preaching, he was arrested, tried and convicted to death, all in a single day. He was charged for refusing to recognise the gods of the city and corrupting the youth.

⁴ Ibid. pp. 45, 47. Aristotle was the tutor of Alexander the Great. Aristotle recognised three types of intellectual disciplines: *productive discipline* that deals with activity outside the agent, *practical discipline* such as ethics that is not separate from the agent and *theoretical discipline* that deals with truth for its own sake.

⁵ *Encyclopaedia Britannica, Ultimate Reference Suite, CD-ROM*, 2004. The story of Atlantis, if real, may in fact reflect ancient Egyptian records of a volcanic eruption on the island of Thera about 1500 BC. This eruption, one of the most stupendous of historical times, was accompanied by a series of earthquakes and tsunamis that shattered life on Crete. Plato's poetic depiction of Atlantis appears in his celebrated dialogues *Timaeus* and *Critias* written more than 2,300 years ago. In *Critias*, Plato supplied a history of the ideal commonwealth of the Atlantians.

⁶ Sir Thomas More was an English politician, scholar and writer.

⁷ *Encyclopaedia Britannica*, n. 5.

⁸ Editorial, "Undiscovered Country: Satellite Photos Show Atlantis in Spain," *The Times of India*, Mumbai, 14 June 2004, p. 14.

⁹ This is not true, but drives home the fact again that there is not much change in the ways of human systems. They huddle together drenched in sweat even today, when a goal is scored against the opponent in a football match, celebrating security against the opposing predators.

¹⁰ Arnold J. Toynbee, *A Study of History, Vol. 1*, Dell Publishing Co., Inc., New York, 1978, p. 648. Toynbee also mentions that social systems existed much before humans evolved. The animal kingdom found it convenient to live together in social systems that induced higher levels of security. Once evolved, humans too followed it probably by instinct.

¹¹ Ibid.

¹² There are historians and authors who state that the word "civilisation" is used to depict many things. There are words like "uncivilised" that refer to societies that are inferior, normally by people who consider themselves civilised. In this study, the term "civilisation" encompasses the entire human system with a lower and upper limit without any partisan attitude. This book views people at different stages of development within a unitary civilisation. Such an understanding and perception are important for the study of national security.

¹³ The words: uncivilised, barbaric, savage, pagans, boorish, etc., though often used in expressions are not repeated in this book because they depict the relative nature of the community through the eyes of those who express them. This book does not subscribe to such expressions.

¹⁴ Toynbee, n. 10, pp. 398, 646.

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¹⁵ Do the humans have a warning here that the worm train can get knocked off at the tail or the head?

¹⁶ God's punishment is usually the accepted rationalisation when unforeseen forces destroy a civilisation, whereas a self-destructive civilisation is one in which human subjects tend to induce destruction by foolhardy acts. An example often quoted is a probable nuclear holocaust. The author does not believe that in a society ruled by primordial fear, a direct human induced holocaust is a possibility. But unwise activities and bad governance may bring indirect inducements to disaster situations. This is a hypothesis.

¹⁷ Toynbee, n. 10, pp. 642 and 649. These were influenced by the previous civilisations by fusion.

¹⁸ Ibid. p. 642. An example quoted by Toynbee is the Egyptian Society.

¹⁹ The popular cumulonimbus cloud (C_b) that airplane pilots circumvent to avoid violent turbulence, with an extended vertical body that constantly changes shape under the turbulent draft within. Here, the unitary civilisation is compared with a C_b cloud—highly charged within a single system boundary.

²⁰ Arnold J. Toynbee, *A Study of History*, Vol. 2, Dell Publishing Co., Inc., New York, 1978, p. 19.

²¹ "Homeland Security" is another terminology used when US President Bush Jr. set up a new department to look into security in the wake of attacks on the World Trade Center and the Pentagon by Islamic suicide squads on 11 September 2001. One of the nine tenets overviewed by RAND in its Project AIR FORCE (1996) for 25 years assessment was that, "the US *homeland* will be more exposed to attack." (Khalilzad, Zalmay, and Lesser, Ian O., *Sources of Conflict in the 21st Century*, Natraj Publishers, Dehradun, 1998, p. 7). However there is no indication that in the course of time, the concept of national security will be replaced by "homeland security." It is a relatively smaller concept with limited elements and is more about the physical security of homeland.

²² Monocentricity is a natural process, though turbulence in a geopolitical system can unseat the power centre without warning. A polycentric world order is a myth; there cannot be shared power. Power is always hierarchical. The more powerful unseats the less powerful.

²³ Jean Paul Sartre (1905–1980), the French novelist and playwright was the leading proponent of existentialism—a philosophy that acclaims individual freedom and security.

²⁴ "American Peace," *The Economic Times*, New Delhi, 15 July 2001, p. 12. The Treaty of Westphalia on 30 January 1648, ended the "Thirty Years War" in Europe and ushered a new era in geopolitics. According to social scientists, this pact created the nation-state, which could control its domestic affairs largely free from outside interference. See also, *Encyclopaedia Britannica*, n. 5.

²⁵ Also called the Revolution of 1789.

²⁶ John Ayto, *Bloomsbury Dictionary of Word Origin*, GOYL SaaB Publishers and Distributors, New Delhi, 1992.

²⁷ Charles Robert Darwin (1809–1882), British naturalist and the founder of Darwin's Theory of Evolution.

²⁸ Colin Wilson, *From Atlantis to Sphinx*, Virgin, London, 1997, pp. 1–14.

²⁹ Abraham Maslow studied and taught psychology. His major works were *Motivation and Personality* (1954) and *Toward a Psychology of Being* (1962). He believed that truly healthy people were self-actualisers whose personalities were totally integrated. His theories on the security needs of humankind are important in understanding the security concept.

Maslow realised that peak experiences produced an overwhelming sense of authenticity, freedom and security.

³⁰ Colin Wilson, n. 28.

³¹ *Mysteries of Egypt*, I-Max movie, 2000.

2

The Concept of National Security

A human being, perhaps, is the most frightened form of life on the planet.

Concept means *a general notion, an abstract idea or, in philosophical terms, an idea, or a mental picture of a group or class of objects formed by combining all their aspects.*¹ A concept underlines thinking that creates practical ideas. The idea is perceived by the inquisitive human mind often oblivious to the complexity involved in defining it. The idea thereafter becomes a term, which its practitioners define as understood by them. “National security” is such an idea. If understood clearly and practised precisely, it can benefit people. Its study starts with the “I” in an individual. Unlike other living forms, the individual human experiences the “I,” cognitively either as dissonance or actualisation.² Modern psychology has replaced the earlier conception of the soul with the notion of self, though no one could identify and define it. All were equivocal about the feeling of self as the “I”—a feeling of totality for a human to survive with a mind inside an oddly shaped body. Perception of the self conditions and modifies individual behaviour. It is from the self, the self-perception theory—analysing one’s own action and making judgments on them, as well as from the self-actualisation theory that human motivational behaviour tends to rise beyond the basic needs, which originated in psychological studies. Self also leads to selfishness, inborn and necessary for existence. Existence needs protection. Here the individual sacrifices the “I” and temporarily shifts to the “we” in a group. But the “I” is never comfortable in the group. Nor can it remain in isolation without the “we” as if by default. The constant process of adjustment between the lonely “I” and the “I” in the “we” is often riddled with conflicts—clashes within an individual. The concept of national security is approached primarily through the “I” in the “we.”

APPROACHING THE CONCEPT OF NATIONAL SECURITY

In an exploratory study, it is important to approach the concept carefully treading all available paths. A number of approaches are attempted in this chapter to objectively analyse the concept of national security. The idea is not to identify and select the seemingly best out of them, but to extract the truth from the facts that each approach can provide.

Behavioural Approach

A generic way of doing this is to examine the behavioural aspect of individuals as part of human systems, based on their needs for survival. Maslow's hierarchy of needs is one of the tools. Abraham Maslow carried out research on human behaviour in order to understand the underlying concept of actualisation of human beings for survival in a competitive environment. He devised a system of a hierarchy of needs (Figure 2.1) starting with physiological needs (food, water and shelter). Security or the safety needs of the individual is at the second level.³ Coupled with the physiological needs, these include the needs to be free of physical danger and of the fear of losing a job, property, health, food or shelter. Though the hierarchical definition of this theory is questionable, it is valid in a human system that thrives for existence and survival. "Survival" is the key word in the concept of security. The needs ultimately lead to self-actualisation as and when the previous need in the hierarchy is satisfied as explained in the motivation theory.⁴

Steps	Needs
5	Self-actualisation needs (self fulfilment...)
4	Ego needs (self-esteem and the esteem of others...)
3	Social needs (sense of belonging...)
2	Security needs (personal safety...)
1	Physiological needs (food, water, shelter)

FIGURE 2.1 Maslow's Hierarchy of Needs

Maslow understood that by design, people want more than they have. As one desire is satisfied, another takes its place in the hierarchy. At step 1 is the primary need. Immediately at step 2 is security.⁵ The transition to psychological needs takes place here. Maslow's theory has been a subject of extensive research.⁶ It was identified that the strength of needs varied with the individual. In another research, the hierarchy was questioned. The researchers insisted that the upward movement of need prominence resulted from upward career changes and not from the satisfaction of lower-order needs.⁷ The security needs existed from the beginning and are the prime movers of anxiety in people. Humans attempted to fulfill their needs in accordance with their perception of their state of security. While Maslow's needs are based on employment and motivation, security in a generic sense involves all human beings in a social system. The principles of security complemented by the hierarchy of needs are applicable to all. However, for the unemployed in a society, the hierarchy of needs may plateau at a certain level earlier than for an employed person, demanding more outlets for psychological upliftment. Managing an unemployed society is quite difficult. In an employed society, competition to uplift

psychological needs will be serious. Associated problems related to occupational stress and strain will exist. A society comprises both the employed and the unemployed. Their well-being is the goal of governance and therefore, governance has to address the problems of both. In this respect, taking leverage on Maslow's hierarchy of needs is important for the society as a whole.

Psychological Approach

Alfred Adler (1870–1937)⁸ examined the human personality from all angles. Though he had differences with his contemporaries, Sigmund Freud (1856–1939)⁹ and Carl Gustav Jung (1875–1961),¹⁰ his theories had particular relevance to modern thinking on easy-to-apply psychology. By security, Adler did not mean only protection from danger, but that further element of safety that guarantees the continued existence of humans under optimum circumstances. Children learn to secure it by demanding a safety margin beyond what is actually necessary for the satisfaction of their basic needs. The need is stronger than that would be necessary for a quiet life.¹¹ Here there is a stumbling point: the expectations of humans are more than what they actually need.¹² In other words, there is “apparent security,” what one actually needs for well-being, and “perceived security,” what one perceives as necessary. The perceived security is higher than apparent security. This perception, according to Adler, creates the tendency in people for supremacy and domination. It is a never-ending chase for perceived security. Adler considers human beings to be inferior to other living forms when it comes to survival. They can survive only in particularly favourable conditions and such conditions are very limited. This feeling of insecurity and inferiority is always present in human consciousness. This stimulus forces them to seek security through favourable conditions. The result is communal living.¹³ The feeling of insecurity and inferiority is a constant stimulus to the discovery of adapting to better ways of life on earth. Always there is conflict between “zero security,” “apparent security” and “perceived (inflated) security” (See Table 2.1).

TABLE 2.1 States of Security Perception by Adler

<i>Security</i>	<i>Inference</i>
Zero security	Undesirable state
Apparent security	Desirable state
Perceived (Inflated) security	Overly ambitious state

The instinct for communal living encouraged the human intellect to overcome the inferiority and insecurity of existence caused by inbuilt vulnerability. The mind became an organ of thinking, feeling and acting. Security issues rose from the trials and tribulations associated with it. While the fear of insecurity is persistent among all, it is the rich and the powerful who feel more vulnerable.¹⁴ According to Martin

Kettle, fear created the “gated community” syndrome in human society.¹⁵ The bottom line is that security is an issue for those who have something to lose. The study of national security glides along the perception that everyone has something to lose. Security is different from happiness. In scientific studies, happiness is based on specific identified factors: genetical aspects inherited from parents; circumstances including demographic factors, age, gender, ethnicity and geographic factors; and personal history and status. According to studies, the correlation between other variables such as money, job security, marriage, sex, etc. are relatively small. The happiness level may not alter even if income and other changes that are considered to be positive exist. Activities, including cognitive activities can lead to happiness,¹⁶ whereas security is derived from need realisation.

Philosophical Approach

Did human beings begin to philosophise life under feelings of helplessness or is it an intellectual development that would anyway have taken place in the normal course? Philosophically, it is fear that leads to conflicts. It underscores the point “a people consist in that in which it believes.”¹⁷ The seer-scientists of India regarded each human being as an integrated whole made up of body, mind, intellect and *atma*.¹⁸ According to western thinkers, this was an escapist mode through an exclusive preoccupation with spirituality.¹⁹ According to the Encyclopaedia Britannica,²⁰ *Indian thought, however, was primarily philosophical and otherworldly, and was concerned more with escaping than with understanding.* But the fact remains that in a spiritual society there is an undernourishment of fear and therefore, the security threshold is higher. It is also an escapist mode, in the sense that when security is threatened and does not find a sociophysical answer, humans tend to escape to spirituality. This is a hypothesis. The philosophical evolution of security is therefore, idealistic. It is the belief system—occidental, oriental or other cognitions—that rejuvenates and furthers its cause. Ideally in such societies, the role of the government for providing security should be less demanding than in those without such inbuilt defence mechanisms—it will be easy to please people. Philosophically, the sense of security sense is never a void. What fills the void in an undesirable state²¹ of security is spirituality associated with belief systems. This is shown diagrammatically in Figure 2.2 and also explains why people tend to be more spiritualistic and superstitious when security crumbles momentarily.²² Faith and superstition rise when perceived security decreases and balances the otherwise normal human mind. It can be seen in the lemon and chilly hooks sold in thousands everyday across India. It is a kind of charm hung by everyone, from truck drivers to millionaires to ward off ominous mishaps in their daily chores. People use a variety of such spiritual “hooks” as security blankets the world over.

In Figure 2.2, the circle defines the security level that each human being requires according to perception. It cannot be filled by apparent security alone because of the vicissitudes of the psychosomatic human make up. Humans continue to

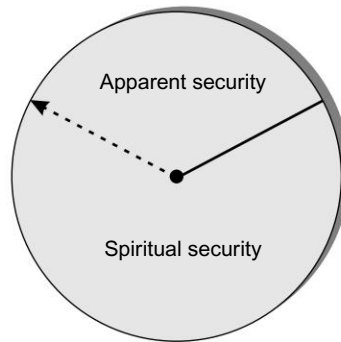


FIGURE 2.2 The Security Circle and the Balancing Rider of Human Mind

struggle. Throughout this struggle, the void is filled by spiritual security lest the perceived deficiencies should tip over. Spiritual security, thus balances human life. Spiritual security is not spirituality. It comprises a multitude of activities including spirituality. Religion and god are just two outlets of spirituality. In the convenience of spiritual security, there is also god for those who have no religious beliefs but have firm faith in cultural belief systems that are often mistaken for religion. God exists beyond religious beliefs as well as in the atheist belief systems. In the latter, the presence of god is in its absence. A “conspicuous” absence of an entity is its acknowledged existence. It is acceptance by rejection. God is essential for human existence in a manner that will keep the drudgery of life accounted for. The human mind needs assurance that it is not responsible for the bad things in life. This assurance is essential for the existence of a mind that resides in the body. People visualise their own god through religion or otherwise. Religion in any acceptable form is essential to provide the spiritual security that an individual demands. Those who are not born into a particular religion and remain natural without being converted into a regimented faith, tend to regard the culture as religion. Strictly speaking, if it is considered that religions are created by enlightened people with Christianity at midway in the 1st century AD,²³ then those who do not believe in these religions are the natural (original) people who may diversify in their concept of god. What the seers who created the religions have achieved is the unification of god within the religious community. In some religions the god is “godlessness.” For every religion, the objective was victory against the evil prevalent at the time. The last of the major religions was Sikhism, which came into existence approximately 500 years ago. All religions show astounding similarities in their proclamations, rituals, procedures and projections. Asymmetry, if any, is trivial. No more new religions are expected to emerge. The world is in a different mode today. The next scenario could be transmutations or independence, but everyone including the pretenders will have an entity in god or in its absence. From this point, the existence of god is very much justified.

Spiritual security, as seen in Figure 2.2, is a space filler. It moves into the empty space of a human mind devoid of security and enlivens it by behaviour modification. It is a mind game that settles itself. It fills the void between available apparent security, and perceived security that can never be achieved. Even apparent security can be achieved only under the imaginary efficient form of governance. Spiritual security is the balancing force that assure existences when things go wrong, and things do go wrong every moment. The fact, that spiritual security is not all about god and religion but far beyond them in terms of day-to-day existence, needs to be reiterated throughout the study of national security. Spiritual security is a kind of suggestive self-hypnosis. From daydreaming and fantasising to the institution of god, spiritual security takes different forms of altering belief systems at will every moment. Without the elixir of spiritual security, humans cannot remain balanced. It is the magic potion of existence. There are plenty of human activities to stimulate the spiritual quotient when the security level is threatened: religion, festivals, traditions, rituals, family, sex, belief systems, violence, food orgies, entertainment, creative indulgence (other than by self-actualisation, which is an apparent security agent), gambling, liquor, drugs, sports, cults, gurus, games, Internet, pornography, fads, music, arts, reunions, regression to the past (those good old days!), crime, blind faith and a host of items one can call out indefinitely. Anything that provides an add-on in the process of perceived security attainment subscribes to the concept of spiritual security as identified here. Promoting spiritual security measures like arts, entertainment, rituals, etc. by states means supplementing the security needs of the people to balance the shortcomings in providing apparent security. In India, movies are often considered to be the “opium of the masses.” It is true. They need them. That keeps them away from the disillusionments of apparent security deficit. A nation based on a particular religious belief system has the advantage of leading the people to self-comfort by religious spiritual security side-stepping the more difficult apparent security measures. Belief systems carry humans to a plane of imagined self-efficacy in managing oneself without external support. It includes prayers—a process of self-hypnosis—and physical actions in mass hypnotic trances like dancing and chanting under the cult leader in somnambulistic self-belief. Trance induced belief systems help to a certain extent, at least they alleviate the pain of existence. There are varieties of induced coping behaviour patterns. A person diagnosed with a terminal disease tries to come out of depression by going through alternate medicine and prayers when withdrawn by acceptance. Superstitions associated with human organs and genitals for vitality, use of charms and precious stones for miracle power, and protection from evil, etc. will continue. Without such balancing props, it is impossible to contain the turbulent mind. People do get highly exploited in this condition, though. Writing at the time of French Revolution, Thomas Paine (1737–1809)²⁴ expressed his conviction that “a morning of reason” had dawned in Europe, and that the dark night of superstition had finally been rolled back.²⁵ Incidentally, it was at the time that the concept of nation-states

was also knocking from inside the cocoon to make a grand entry into a strange world. “I want to know” said Voltaire (1694–1798)²⁶, “what were the steps by which men passed from barbarism to civilisation?”²⁷ Or have they actually passed? So far the evidences are misleading. In its philosophical evolution, “security” is universal. The feelings of the people are identical irrespective of their geographical and cultural differences.

Historical Approach

History narrates the events chronologically, based on critical examination of source materials. Or rather that is what history is supposed to do. According to a Persian proverb, *history is a mirror of the past and a lesson for the present*.²⁸ The word “history” originated from Greek “I know.” Though it is expected that it will be carefully analysed, history reflects pictures of conditioned appreciation and guided perception. Therefore, reliability of historical documents becomes questionable. History should not be mixed with myth, but it cannot avoid the edifice of myth, ignorance, observations, social fallacies, religious sentiments, colonial capers and the mindset of aggressors. The underlying aspect of all these is fear, inherent in humans as a catalyst for survival and existence. The result is that from “I know” history graduates to “I want you to know.” The problem with history lies in whether it is recorded properly. For example, the official Pakistani history of the 1971 war with India does not mention the surrender of the Eastern Command with 91,000 personnel at Dhaka on 16 December 1971.²⁹ It is understandable from the point of view of a (or any) nation that it will not like to record a negative event in its totality. But history, thereafter, ceases to be a lesson for the future. It therefore, defies the Persian proverb quoted earlier. In India, the media musings on suppressing the history of the 1965 Indo–Pak War generally turns out to be based on facts of delaying publications. History of the 1947–48 operations were completed in 1950 but were published only in 1984, 34 years later. Suppression of war histories by the Government of India was confirmed by S.N. Prasad, retired editor of these histories, in an interview to an Indian journalist.³⁰ According to him, the official history has to be vetted by the “glorified *babus*” of half-a-dozen departments.³¹ As per the versions of the responsible historian, history is not only “delayed” but also “distorted.” The disappearance of India’s revolutionary freedom fighter Subhas Chandra Bose allegedly in 1945 is still not resolved. While history records his death in a plane crash in Taipei, Taiwan on 18 August 1945, Taiwanese authorities reject the incident stating that there was no recorded plane crash during the period at Taihoku, the old name for Taipei, during the period. A Pakistani retired army officer; Brigadier Habib-ur-Rehman had given an eyewitness account of the crash and seeing Subhas Chandra Bose, known to his aides and followers as *Netaji* (venerable leader) in flames after the crash. He had accompanied Bose on that flight from Saigon to Tokyo when the plane crash-landed and caught fire.³² History ceases to be a source of reliable information under such situations.

The question in the history of evolution of the concept of security is, “when did humans become conscious about it and start suffering associated anxiety syndromes feeling the existentialistic dread?” It is more a socio-psychological, rather than a historic phenomenon. The Great Wall of China is a symbol of it. Behind the wall was Emperor Chhin Shih Huang Huang Ti³³ who ruled China 11 years after its unification over 2,200 years ago (around 215 BC). He seemed to be a man in a great hurry and also scared to death. He linked up the existing defensive walls into one great wall like a frightened kid wanting to shut the windows before sleep. On one side of the wall were the marauding Huns, on the other, the rich farmlands of China. It was likely that the emperor wanted not only to prevent the Huns from entering, but also prevent his hard-working peasants from getting out. That would not have been but for food security as well as ethnic propriety. The peasants would have mixed with the wandering nomads and shattered the emperor’s dream of a unified China.³⁴ In the end, the boundaries of Chhin Shih Huang Huang Ti’s empire became the traditional territory of China. It was good planning by an emperor, not a frightened kid, and an early study in practical national security. In Xian, archeologists found 8,000 terracotta soldiers: infantrymen, archers, cavalrymen, horsemen and charioteers guarding the emperor’s tomb. The potters created them 2,200 years before to protect the emperor in his after-life. The fear of insecurity extended even to the after-life in many societies. There are evidences in the tombs of the pharaohs and the once powerful, across the world. In a limited way it continues even today. Fear and security are central to the activities of the powerful. The gated community syndrome symbolised by the Great Wall existed all over and continues today, with barbed wires across the borders of modern nations and the raised walls of the rich and powerful, under the law of invariance.

According to history, humans started life from the African continent. The oldest human footprints found on volcanic ash are estimated to be 3.6 million years old.³⁵ They were hominids that walked around eating fruits. Slowly they learned to eat meat. Probably they were capable of using a stick for defence, attack or digging a hole on the ground to hunt small prey.³⁶ They had the insatiable urge to walk and run. This mobility on their feet took them to far away places. They migrated to wherever they could reach in search of survival. Migration did not stop. They lived and multiplied in spite of ruthless competition. But for a long period they were in a pitiable condition for survival, compared to wild animals. Larger, stronger and sometimes dangerous animals outnumbered them in the vicinity where they lived. Humans were physically weaker and lighter. But they had the power of the brain. They realised that the only way to survive was to organise themselves in communal life. This intellect seems to be the first major sign of security consciousness that dawned on the human race. The gradual increase in human capability for organisation was a vital aid to self-defence, especially at night. Without the ability to organise against an enemy, animals of prey might easily have been wiped out the early humans venturing into new tropical areas. Slowly,

they moved from the tropics of Africa to the temperate zones of Asia. They took time to settle along the coasts and even further to venture into the seas.³⁷

The human brain enlarged in the course of time from 500 cubic centimeters among the *Humanoids* to 900 in the next generation *Homo erectus*. The latter ventured into long migrations. The growth of the brain and its structure was one of the remarkable changes in the history of human evolution. What is important here is that the fear and security consciousness that even animals depict in their life pattern have been visible in the early humanoids abstractly, though different from the animals that surrounded them. The Great Awakening was visible some 60,000 years ago among the nomads. Death became as important as life. It was also a sign of the acute uncertainty that they felt about life.³⁸ Death arrived silently and mysteriously. It was chilling. It brought fear along with associated belief systems that remained etched forever in the mind and were carried forward to generations of descendants. It strengthened further at every turning point when humans witnessed violence and trauma. There was uncertainty all around. The quest for physical security was hidden within this uncertainty. Wars determined the state of physical security of human groups from the earliest days. Domination was falsely interpreted as assured security. The first ever war in recorded history was for territorial conquest in 35,000 BC when the *Homo sapien* “advanced hunters” displaced the Neanderthals from their hunting grounds.³⁹ There is also a claim that the first war was fought for fire between two human settlements. If that was so, it could have been further beyond. Peace between groups has often been the result of subordination by acceptance arrived at either by war or threat of war. Dominance established hierarchy.

Political Science Approach

Political science is the study of the state and its functioning. The subject existed in its older form in ancient days, where the concept of the king and anarchy in the absence of one, has been highlighted. In the early Indian treatise on statecraft *Arthasasthra*, the theories of kingship and statecraft were highlighted in detail by Kautilya.⁴⁰ He advocated the idea of the king’s divine nature, having divine sanction of the king’s office (there is a semblance to the status of the pharaohs of ancient Egypt). With more forethought, he reconciled his argument with a theory of the elective origin of the king. In a state without a king, the strong can devour the weak. Rule of law will be absent. It will be the powerful that will control; equality of citizens will be absent. These are the messages. The underpinning statement is divine sanction. In other words, sanction is required for holding the highest office of the state. It could come from anywhere and as long as there is no formal authority, it is implied that it could be from the unknown, the divine sources. It was a vision with a pointer towards the future about the authority and accountability of the office of the “king” in whichever form it may be. The functions of the king, according to *Arthasasthra*, are (1) to acquire what is not gained, (2) to protect what

is gained, (3) to increase what is protected and (4) to bestow the surplus upon the deserving. In modern times, the functions could be termed as wealth generation, wealth retention, profit generation and profit distribution. The explanation, though easy, shows the accountability of the king to the people. The king is also the promulgator of *dharma*.⁴¹ It was enlightened monarchical paternalism that could very well be adapted in democratic governance. The *Arthasasthra* calls for the overall achievement as happiness of the people. Here happiness is understood as security since it also speaks about protection as the main task of the king—physical security. Monarchy thus guarantees protection against anarchy. The king had many duties—avert disasters; protect agriculture, industry, mining and the weak; control crime; settle legal disputes, etc. A gamut of elements of national security is already in it, in their period form.

In political science national security is the concept of safety for the territory and population of a state and by extension, the policies adopted for its preservation.⁴² Security is sometimes defined as the assurance of future welfare. According to this concept, national security might be regarded as the whole range of measures affecting the welfare of a population, as well as provision against aggression from abroad or subversion within. Usually the term is invoked either when it is thought that the safety of the nation is threatened by alien armed forces or when military action offers a possible answer to other dangers, such as a wave of illegal immigration.⁴³ According to International Encyclopaedia of Social Sciences (1968), “*security is the ability of a nation to protect its internal values from external threats.*”⁴⁴ Here the threat is perceived only to internal values. The threat dimension is singular.

Mythological Approach

Folklore contain narrations of kings and other iconic personalities praising their deeds in human well-being and just actions. From heroes, they become legends and slowly turn into myths before passing into folklore. Mostly, the myths and folklore when rewound into the past, end up as facts of history. The quest for the concept of national security can be sieved through one such folklore. The festival of *Onam*, a harvest celebration in Kerala, India, is synonymous with prosperity when people remember their most benevolent king, *Mahabali*. According to legend, the *devas*⁴⁵ on their envy dethroned him with the power of Lord *Vishnu*,⁴⁶ who disguised as a dwarf-sized Brahman boy, asked the king for three footsteps of land so he could have place for meditation. When the generous king agreed, the tiny boy metamorphosed to a colossal size and measured the whole earth with one foot and the sky with the other. Thereafter the boy looked at *Mahabali* for placing the third step. The benevolent king known for his word offered his head for the third step. *Vishnu* pushed him under, but only after heeding to the prayer of the good king that he could visit his people once a year and see to their well-being and ensure their practice of the ethical standards set by him. On that day, every year, the people

of Kerala celebrate *Onam*, the festival that speaks about equality and prosperity under justice that only good governance can offer. The legend talks about the aspiring mindset of the people through the concept of security. In Malayalam⁴⁷ the folksong begins:

*Maveli nadu vaneedum kalam,
Manushar.ellaru.monnu pole.
Amodathode vasikkum kalam,
Apathonn.arkum.ottila thanum.
Kallavum.illa, chathiyum.illa,
Ellolum.illa polivachanam.
Kalla.pparayum, cheru.nazhiyum,
Kalla.tharangal matt.onnumilla.*

Roughly translated, it reads,

“All were equal during *Mahabali*’s regime,
A period of pleasantry and freedom from danger,
No theft, no deceit, not even a grain worth of lies,
No disease or epidemics, and unheard of was infant mortality,
Measures and balances were kept in order,
And no fraud of any sort.”

Does it sum up the concept of national security? Perhaps not. Because, it is more a fantasy than a reality perception; visualisation of a *paradiso* to live in is a yearning amidst the fear of existence. But the lore would have been tied to the reign of a real and benevolent king who perhaps, under unforeseen circumstances was done away with or driven out of his kingdom. In this folklore, the concept is about freedom from fear of insecurity, and high ethical standards as the concept of well-being. The role of the “king” to provide security is emphatic and in security, equality is certain. Kautilya’s *Arthasasthra* also mentions this.⁴⁸ Equality is the basis of the preamble to many constitutions in the world today. Mythology, according to historians, reflects happenings of yore. Euhemerus,⁴⁹ a philosopher resident in the Macedonian Court during the fourth century BC, argued that all myths are related to historical events and that the gods were originally humans who had achieved great success and who, after their death, received divine honours from grateful people.⁵⁰ Euhemerus was known for his *Sacred History*, a philosophic romance based upon archaic inscriptions that he claimed to have found during his travels around Greece. He was an expert in interpreting popular myths and connecting them to history. The word euhemeristic is applied to such explanations of primitive myths. Those who fascinated people historically became mythological objects of worship and veneration later on. May be myths have something to do with history, but mythology has a lot to do with security and human whims and fancies related to their lives. All these lead to the concept of security as the well-being and success in life.

Constitutional Approach

The Constitution of a country projects the principles that are set to be followed by its people and the government. A democratic constitution is considered well suited for examining the concept of national security as envisaged in this book. Even then it has to be reiterated that it is the form of governance, not the government that matters in national security. Citizens identify themselves with their nation, irrespective of the form of government. The nation gives them identity, not the form of government. Under the same argument, it cannot be concluded that democracy is the dead-end principle of governance. There could be better forms, but a democratic constitution is best suited for examining the concept of national security because democracy is the most modern form of government today. India is such a country. It is the largest democracy in the world. India has been hailed as the hallmark of the constitutional system in the world. The United Nations Development Programme (UNDP) reported India's multicultural nature as an example of equality of human beings.⁵¹ The preamble to the Constitution of India articulates:⁵²

- (a) Justice—social, economical and political
- (b) Liberty—of thought, expression, belief, faith and worship
- (c) Equality—of status and of opportunity
- (d) Promote among all, fraternity—assuring the dignity of the individual
- (e) Unity and integrity of the nation

The points of human equality and other concerns are common for nation-states or international organisations that support democracy and are therefore, guidelines for identifying the elements of national security. The Constitution of the United States of America, the world's oldest democracy, has similar concerns.⁵³

- (a) Justice
- (b) Domestic tranquility
- (c) Common defence
- (d) General welfare
- (e) Liberty

Another entity with a democratic constitution is the United Nations (UN). What makes it unique is that not all members who embrace it believe in democracy. It is located in the world's oldest democracy. Its sheer presence has guaranteed security to many peoples of the world. It is ruled not by a government, but by the governments of the world, democratically rekindling hope beyond nations in a turbulent world. The UNDP in its support to human rights identifies "seven freedoms:"⁵⁴

- (a) Freedom from discrimination—by gender, race, ethnicity, national origin or religion

- (b) Freedom from fear—of threats to personal security, from torture, arbitrary arrest and other violent acts
- (c) Freedom of thought and speech, and to participate in decision-making and form associations
- (d) Freedom from want—to enjoy a decent standard of living
- (e) Freedom to develop and realise one's human potential
- (f) Freedom from injustice and violations of the rule of law
- (g) Freedom for decent work—without exploitation

Constitutions project the aspirations of the people towards their well-being, especially in a democracy. It has to be achieved through governance under the rule of law. Aspirations of the people are integrated with the principles of national security.

Planners' Approach

At the beginning of a nation and at different times thereafter, planners decide the priorities in advance. A peep at these priorities will yield some indicators on what a nation wants and the commonalities involved in it will hint at the points of well-being. J.R.D. Tata (1904–1993), the pioneer of Indian industries and commercial aviation, and a team of intellectuals, had a plan for India at the time of independence.⁵⁵ The plan, aimed at economic growth was based on development, the bedrock of national security. It was meant to guide the political leaders in governance and steer the country towards providing, in their words, “a minimum standard of living” by encouraging economic growth. It was the basis of envisaged economic security. The items that figured in their list of priorities were:

- (a) *Food*: To increase food production to provide 2,800 calories per person per day
- (b) *Clothing*: 30 yards per person. The average per capita consumption of textiles for the world in 1925–29 (for personal and household use) was 42 yards. The consumption of cotton was 16.1 yards in India and 64 yards in the US
- (c) *Shelter*: 3,000 cubic feet of fresh air per house and 100 sq ft of room space per person, which was the minimum for physical use. In 1935, the area in Mumbai, India was 27.58 sq ft per person
- (d) *Health*: One bed per 250 people
- (e) *Education*: Every person above the age of 10 should be able to read and write and take an intelligent interest in private and social life

The plan was to materialise by developing basic industries such as power, mining, engineering, transport, chemicals, armament, cement and consumer goods (textiles, glass, leather, paper, tobacco and oil). In addition, there was to be an increase in agricultural production by solving the prevailing problems of rural indebtedness and soil erosion. The infrastructural agenda included expanding

means of communication, railways, roads and coastal shipping. The per capita income in British India was 65 rupees in 1931. It was 22 times more in the USA, the country with the highest per capita income. This plan however, never materialised. Jawaharlal Nehru (1947–1964), the first prime minister of India had a different agenda for India's development.⁵⁶ The plan showed the process of thinking based on human needs under a minimum plan expected to alleviate the daily stress.

Military Approach

War is extreme behaviour between two or more groups engaged in conflict when other means are either exhausted or not speedy enough to settle issues, or defending against an invasion where issues generally will be economic, religious, territorial or all of these. War is a group activity in which people get killed. At the same time, not all wars were embodiments of cruelty against people. There are examples in the past where fair practices and ethics were followed, even in war. The laws advocated forbearance from killing innocents, targeting women, children, the sick and the old and observing penance after a bloody war that may stretch to the extent of total abstinence from luxury and material pleasures. Emperor Ashoka's⁵⁷ life was an example where subsequent to a war he was engrossed in the welfare of the people and in assuaging their sufferings. Fighting a war had its own rules. Combat after sunset, killing a fallen enemy, humiliating a prisoner of war, plundering innocents, marauding the helpless, etc. were not permitted under the ethical system concerned with human lives. There is utmost concern for the well-being of the individual and family within a military hierarchy and society. The qualities of a commander are judged based on the command capabilities that foster well-being and *esprit de corps* in the military and in the families of military personnel. There are internationally recognised laws of war that call for restraint under civility during war and post war activities. It is within these qualities that concern for the human being strives even in war. The code of conduct of individuals and groups when engaged in dealing with themselves and others during a war are clearly spelt out. Those who do not obey these principles are called barbarians, savages, etc. It only emphasises human concern for the well-being of fellow humans. Thomas Cleary in his book *The Lost Art of War* translated from the original text in Chinese purportedly written by Sun Bin⁵⁸ a lineal descendant of Sun Tzu⁵⁹ and later came to be known as Sun Tzu II, mentions the qualities of a commander. They are justice, humaneness, integrity, trustworthiness and superior intelligence.⁶⁰ These qualities outline in a nutshell the principles that a military has to follow. They are also the desirable qualities that a leader of the people should possess in order to cater to their well-being.

A RECIPE FOR SECURITY

From these approaches, it is possible to make a recipe for security. The reason is not that the studies in the foregoing yield much to the subject, but the subject

itself is simple. Humans are born frightened. Just as the feel of pain keeps the limbs intact, they will not exist without fear. Security means keeping the fear under control. In a higher plane, the fear is not just physical but also mental and emotional. That cannot be provided for completely, and hence humans have a mechanism whereby the individual takes care of the balance area in the security circle by adopting spiritual security measures by default. Anything goes with that, and in the future more and more methods could be expected within the realms of spiritual security, to cope with life that will always remain incomplete. The coping behaviour of humans can be different and evolve continuously. Even creativity develops under this cover. Creativity actually comes out of self-actualisation. Since creativity is topmost in the hierarchy of human needs, it also has a place as coping behaviour. It can thus be concluded that creativity links apparent security with spiritual security where the changeover interface ends. This book does not deal with spiritual security. Its scope is apparent security extending to the line of perceived security dealing with physical, mental and emotional aspects of security. It will be seen only after examination of the principles of a nation-state.

The common element of human survival is the formation of organised groups. Formation of communal groups for security reasons is the beginning of the concept of organised defence. According to Adler, it fostered the human mind.⁶¹ It was a long way to nation-states, the refined form of organised groups with marked territories, satisfying in a well pronounced manner the inherent territorial instincts of individuals and groups. For some historians, the prelude to nationalism was the crusade to abolish slavery and bondage led by people of compassion. The thirst for equality became the hallmark of the period. Nationalism was one of those ventures for equality but latently turned to inequality as an outcome of the movement.⁶² The sense of equality was within the boundaries of kinship; it was not extended to people belonging to other income groups and social classes.⁶³ It still continues within the boundaries of nationalism.

THE TREATY OF WESTPHALIA AND SOVEREIGNTY OF STATES

The year 1648 changed the geo-property regime of the world endowing associated rights on people. It began in Europe. The Treaty of Westphalia brought an end to the “Eighty Years’ War” between Spain and the Dutch, and the German phase of the “Thirty Years’ War.” The Spanish–Dutch treaty was signed on 30 January 1648. The treaty of 24 October 1648, comprehended the Holy Roman Emperor Ferdinand III, the other German princes, France and Sweden. England, Poland, Muscovy and Turkey were the only European powers that were not represented at the two assemblies.⁶⁴ Under the terms of the peace settlement, a number of countries received territories or confirmed their sovereignty over territories. Beside territorial changes, a universal and unconditional amnesty to all those who had been deprived of their possessions was declared, and it was decreed that all secular lands (with specified exceptions) should be restored to those who had held them in 1618.

Even more important than the territorial redistribution was the ecclesiastical settlement. The member states of the Empire were bound to allow at least private worship, liberty of conscience, and the right of emigration to all religious minorities and dissidents within their domains. The constitutional changes made by the treaty had far-reaching effects. The Peace of Westphalia recognised the full territorial sovereignty of member states of the empire. By this and other changes, the princes of the Empire became absolute sovereigns in their own dominions. The central authority of the Holy Roman Empire was replaced almost entirely by the sovereignty of about 300 princes. The power of the empire was materially weakened. The Treaty of Westphalia ushered in a new era of geopolitics. In course of time, the pact created the nation-state that could control its domestic affairs largely free from external interference.

The basic concept of a nation-state is that the people identified with it have their own powers for governing it. The means may vary. Etymologically, a nation is a breed or stock⁶⁵ that has been born. There is a notion of common ancestry in the origin of the word.⁶⁶ Over the period a nation became an organised territorial unit. A nation is made of people who identify with each other. They are sentimental about their territory and want to protect it. They symbolise the territory in the manner in which it appeals to them and identify with it. It is a matter of pride and honour and reflects in their behaviour, especially under competition. A nation will also have its own history, which will speak about its journey to the day and how its heroes of the past whom they find worth remembering for their sacrifices, kept the flame burning in the face of severe difficulties. The nations may also identify a founder figure⁶⁷ and a flag that the people can proudly display and an anthem they can sing on special occasions. Nationalism is ingrained in many such props of display. The biggest point of pride for the people of a nation is the value system they share and brag about. The value system will always be rationalised when criticised. The nation therefore, becomes an abode for people who were there originally. They will sing together that their nation is better than all others in the world. It is not clear whether the trend is changing gradually with external migration and clash of ethnicity. There are changing viewpoints even within families with the descendants becoming loyal to their adopted nation of citizenship. But the concept of nation-states will remain firm for years to come.

THE STATE IN POLITICAL PHILOSOPHY

In political philosophy, the state is a deeper, wider and more comprehensive, if somewhat conceptual, entity while the government is implicated continuously in the life of the community as the operating agency. The state is the “body politic” in its strict sense.⁶⁸ State is a political system or arrangement based on law, which is both primary and secondary. Primary law is the constitution. Secondary law is that by which the state is governed. The military and other forces both armed and unarmed protect the system of a state. A nation-state is a nation, which is a state

in its governance. It may also be seen that there are states where the enforcing agencies are government-approved militia. Here the problem is that the rule of law is not strictly applicable under the constitution. Opposition to the government is permissible subject to the rule of law, while hostility to the state amounts to treason if it is from within. In reality, there is little difference between the state and the government. The quest for security was vested in the “king.” The concept of the “king” is evident in every form of governance. Even a democratic system is not free from this concept as the dynastic lineage gains competence in ascension in politics in many countries, though that is not the criteria for such an assessment. The people pay obeisance to those who govern them in every form of government. They depend on them for security. Follow the leader is a syndrome that developed in the very early stages of human history.⁶⁹ The leader of a group is synonymous to the king.⁷⁰

CHANGE, ACCULTURATION, AND SECURITY

The span of human existence is negligible compared to that of the world. The history of humans in its macroscopic sense is comparatively short. The past is pronounced in the present in micro history. Change is evident only after a reasonable period and not when it is taking place. This is important in order to understand change. Change is causative and is a function of time. Causality in philosophy is the relationship of a cause to its effect, as studied by Aristotle. The cause is defined, as the preceding event without which the event in question would not have occurred. There are philosophers like Henri Bergson (1859–1941)⁷¹ who believed that the ultimate reality of life is not determined by exact causal consequences. According to him no exact repetition happens in real time and where there is no repetition, there is no cause, for cause means that the antecedents are repeatedly followed by the same consequence.⁷² Chaos theory leads us to the simple principle of a system moving from order to disorder with the increase in entropy through bifurcations that leads one to another. Inevitably, there is chance that accounts for changes in bifurcations. In such cases change occurs. Small items like an assassin’s bullet can change the course of history. And it is the same in cause and effect. Effect indicates change. Whatever may be the reasons, for the student of security change is present in a global context and is a sign to watch for. Another context to see change is through process philosophy. It is a speculative world view, which asserts that basic reality is constantly in a process of flux and change. Concepts like creativity, freedom, novelty, emergence and growth are fundamental explanatory categories for process philosophy. It emphasises the dynamic being.⁷³ Through process philosophy, theologians bring out the sensitivity and caring relationship of god with the world. God is the original and accepted guarantor of security to humans.⁷⁴ God too is in the process of change and development. *Mari Amman*, the goddess of smallpox in Tamil Nadu, India, is an example. Today the goddess has no special takers since the disease has been eradicated. Instead, there is a new goddess,

AIDS Amma in Karnataka, India. It is in tune with change that the human concept of security vacillates between sensitivity and insensitivity to fear and anxiety. In Andhra Pradesh, India, there is a temple exclusively for guaranteeing visa for jobs abroad, especially to the United States. According to believers, one who prays there is sure to get a visa to the United States! There are villages in India centred on spiritual belief systems with a focused identity of god responsible for their security. In the village of Shani Singnapur in Maharashtra, India, and many others, houses are without doors. People do not feel the need to lock their houses. The village deity is responsible for their protection. Here the relationship between the villager and their gods is one of caring; it works. It should, as long as acculturation does not change it.

Continuous contact between two or more distinct societies causes cultural change. Through a process of selection and modification, societies assimilate belief systems and thereby induce change. Anthropologists call it acculturation. The human security concept also undergoes change through acculturation, unavoidable in the advancing world. This explanation is necessary before straight-jacketing the subject of national security.

NATIONAL SECURITY

The expression, “national security” comprises the terms “nation” and “security.” Security is the primary human need. It is by origin, whereas the amplifying adjective, national is comparatively modern. Its evolution can be charted from the Treaty of Westphalia through the French Revolution to the present day. There are signs that it will further transform. The term national security, was not widely used till World War II. It was by and large associated with military security. Even today, there is a reluctance to dissociate it from this belief system. It is conditioned by centuries old warring traditions. During the Cold War, the United States pursued its national security policy based on the containment policy of George Kennan⁷⁵ till the end of the Cold War. Since then, the concern for non-military threats found a place in the security scenario. Though the turn around in the definition of national security began after the collapse of the Soviet Union, there was isolated reference to the term as early as the 1790s. A group of Yale undergraduates debated the question whether national security depended on fostering domestic industries.⁷⁶ Martin Walker’s descriptive version of the Cold War⁷⁷ brings to mind another question: “did the national security concept emerge from the dark abyss of the Cold War and the Freudian mindset of the totalitarian forces in a democracy, or earlier?” If the proposition of the Yale University students in 1790 is acceptable, the original approach to national security was much earlier than the Cold War period. The Cold War was just another global conflict between two sides⁷⁸ that perhaps stressed the importance of deterrent military power in national security. Since then it became hard to conceive national security beyond military power, though the original concept had a much wider connotation.

Joseph J. Romm, in his book *Defining National Security*, traces the modern etymology of the phrase to the United States Senate hearing in August 1945.⁷⁹ He quotes, the navy Secretary James Forrestal stating that national security could be assured on a very broad and comprehensive front. Forrestal added that the word security, was emphasised consistently and continuously rather than the word, defence. Senator Edwin Johnson in his reply confirmed his appreciation for the terminology, national security. The emphasis here is on words used in plural, not definition. The term comprising the words was not defined. According to Forrestal the concept of national security was not merely a question of the army and the navy, but comprised the whole potential for war, mining, industry, manpower, research and all the activities that went into normal civilian life.⁸⁰ Here there is implied extension of the concept of national security beyond military aspects—all the activities that go into the normal life of people. By 1947, the phrase was in wider circulation. The United States passed the National Security Act that established, among other things, the National Security Council (NSC). The function of the Council was to advise the president with respect to the integration of domestic, foreign and military policies relating to national security....⁸¹ Today, nations face comparatively reduced threat from each other and that enables them to address their domestic issues more comfortably. They still prepare their military outfits to face external threats, though most of them are used for suppressing internal disturbances. Simultaneously, the term national security, is gaining importance beyond military fixation. The concept therefore, calls for an appropriate definition. It is necessary to understand it and analyse it with the changing trends in human administration of the world nationally, regionally and globally.

The race of nations to attain power is motivated by the survival instinct to influence global events in one's favour. It is inherent in group behaviour. Barring military strength, balanced elements of power will be used for this by each nation in different ways. For some, it will be by ethnic methods and religious beliefs. For others, it will be by accrual of strength through internal and external quality acquisition: a healthy and competitive economy, leading edge technology, viable industrial capacity, quality education, international efforts through diplomacy, etc. They will prefer a lean and lethal military to protect national interests. More ideas may follow as humans keep evolving. National security as a concept dictates decisions in the international arena. The emerging international system today is independent of aspects that limit the freedom of action of states. Economic interdependence and heightened awareness of global effects of cultural, social and environmental challenges narrow down national perspectives. This is the setting in which nation-states shall ensure their security by maintaining national interests.

ROLE OF THE STATE IN NATIONAL SECURITY

Security of its people is the responsibility of the state. Adam Smith (1723–1790)⁸² conceived the role of the state in “atomic capitalism” in which every individual is

considered to be the best judge of welfare. Social welfare was the sum total of the welfare of the individuals.⁸³ According to Adam Smith the functions of the state are⁸⁴:

- (a) Defending from external aggression
- (b) Maintenance of law and order
- (c) Enforcement of sanctity of contract entered between different individuals for commercial transactions
- (d) Providing infrastructure, education and assistance to the poor

Adam Smith's theory was based on highly atomic capitalism and was treated as one of state minimalism. In a socialistic approach, privatisation was abolished in order to remove inequality between the haves and the have-nots. The state was given the role of acting as a vanguard of the people in a social order based on equality. Keynes⁸⁵ exposed the basic weakness of capitalism and called for an end to *laissez faire*. His statements were on economic security in macroeconomic conditions to maintain equilibrium. The role of the state was to promote public participation in economic welfare. But in an underdeveloped country, where substantial population is below the poverty line, changes in market mechanisms will make little change in welfare. The state has a major role in generating employment for the poor and promoting social welfare.⁸⁶ Centuries ago Kautilya augured ruthlessness against those not obeying the state. Gandhi⁸⁷ provided a touchstone: *Whenever you are in doubt, or when the self becomes too much with you, recall the face of the poorest and the weakest man whom you may have seen and ask for yourself if the step you are going to contemplate is going to be useful to him. Will he gain anything by it?* All these show that there was concern for the deprived all along.

According to the World Development Report, 1999–2000, “governments play a vital role in the development, but there is no simple set of rules that tells them what to do.”⁸⁸ Another blurred area lies between the terms external security and internal security. These terms are often considered mutually exclusive. In India, according to author Verghese Koithara, the state and the influential public tend to view external security through a politico-military prism, and not through an economic one. Internal security is at the same time considered to be state-centric.⁸⁹ Though these concepts are changing with the advent of militant activism, proxy wars and globalisation process, the concern for human security is still expressed abstractly. The Supreme Court of India had ruled that the government, having failed a licit promise cannot claim impunity on doctrine of promissory estoppel, and is bound by consideration of honesty and good faith. On the contrary, the government should be held at a high degree of rectangular rectitude while dealing with the citizens.⁹⁰ The role of the state is flashed in this ruling. All these are auditions in various social structures, ancient or modern. National security is not an end by itself. It is an approach goal. If that is the way it has to be seen, the role of the state irrespective of its basic structure is to go for it by measures that indicate the process status. This is done by defending the state, providing law and order, producing

goods and services, regulating the system and supplying “public goods” such as education, health, infrastructure, drinking water, etc. In this role, the state has to understand that national security is a movement, not an end goal, and needs the participation of the citizens as the end beneficiaries. The lingering question is, “who is responsible for national security?” The answer may be subjective in most cases. In a country, obviously the accountability is with the government. People’s participation is the next interest. It is very much so in democratic countries because it is people’s rule. People also include the opposition. In protectorates, etc. people are only subjects; the accountability is with the protecting government rather than the people who largely play a supportive role.

American sociologist Robert A Dahl has researched the reasons for apathy of the voters towards the potential system in the aftermath of the Great Depression (1929–1939).⁹¹ His finding was inconclusive.⁹² There is no definite study on the behaviour of the people in their attitude towards national security and the definition of a leader who is responsible for the governance of a nation towards it. But a society cannot manage without a leader. This requirement can be seen even in a small group in a biomodel. There are two types of leadership in this context: the king or the governing elite (a body that replaces the king as a single entity). A king is different from a leader of a group. The king has “divine” authority to lead. The masses elect the government in a democracy, or accept the governing entity otherwise in a governmental system that is different from democracy. The idea is to find out who actually rules a country. In a democratic system, it is a team, formal and informal. The team comprises the politicians, bureaucracy, forces, corporate houses, media and others who have the authority to be insiders. All of them are expected to know their topics well. It is collective governance, pooling in expertise including that of those in the opposition, which maintains the checks and balances within the system of governance.

NATIONAL SECURITY AND FORM OF GOVERNMENT

Is national security independent of the form of government? Whatever may be the form of government, ultimately it is the well-being of the people that matters. Achieving it is left to the nations even with identical forms of government. It is also not necessary that one form of government is more suitable for improving the national security index than another. But it could be said that the general approach is based on the standards of democracy since, constitutionally it stands for freedom. A democracy is the ideal ground for development of national security. Democracy provides freedom. According to Ashley Montague (1905–1999),⁹³ *To be free of bondage or restraint, to live under a government based on the consent of the citizens, these are the basic among all the freedoms... and this is the reason why a democracy is from every possible humane point of view the best form of government... what so many human beings failed to understand is that freedom is the greatest of all trusts.*⁹⁴ But

freedom is not national security; it is a fertile field on which to cultivate national security.

CONCLUSION

Security is a matter of concern for human beings. It is a concept that changes with respect to the changes in evolution around a basic core that remains relatively invariant. Security is no more the physical security in the absence of claws, jaws and size. The security concept is based on the aspirations of the people relative to the groups they belong to. The aspirations can be inflated; most of the time they are. When not achieved, people rely on spiritual security activities concomitantly. The human race moves forward in this churning globule contented with self-rationalisation.

The aspect of security of an individual within a formal group is converted into national security subsequent to the formation of nation-states. The name is new, but the concept is old. The identity of human beings today is associated with their countries. The state and its government are accountable for providing them the minimum required security—the apparent security.

Notes

¹ Sarah Tulloch (eds), *The Oxford Dictionary and Thesaurus*, Oxford University Press, Oxford, 1997, p. 294.

² The concept of “I” is more complicated and debatable than projected. It denotes the self and the ego.

³ Harold Koontz, and Heinz Weihrich, *Essentials of Management*, Tata McGraw-Hill Publishing Company Limited, New Delhi, 1998, pp. 322–326.

⁴ From the book excerpt in *INC.*, on “The Enlightened Manager’s Guidebook” by Abraham A. Maslow with Deborah Stephens and Gary Heil, October 1998, pp. 45–51, www.maxvalue.com.

⁵ Louis Samways, *The 12 Secrets of Health and Happiness*, Penguin, New Delhi 2000, p. 329. The author states that security does not mean happiness. Hapeologists and clinical psychologists commonly view happiness as the next step in human life after security needs are met.

⁶ Koontz, n. 3, p. 323.

⁷ Ibid.

⁸ Adler was an Austrian psychiatrist who researched in individual psychology related to social usefulness. He had a strong awareness of social problems. He examined individual psychology in relation to his total environment, and experimented in developing a humanistic approach to human problems. He followed Sigmund Freud closely, but later parted ways with him when he could not agree with Freud’s theories on sexuality and sexual motivation. Instead, Adler argued on coping strategy in individual behaviour.

⁹ Austrian physician and founder of psychoanalysis.

¹⁰ Swiss psychiatrist.

¹¹ Alfred Adler, *Understanding Human Nature*, Translated by Colin Bret, One World Publications Ltd., New Delhi, 1998, p. 32.

¹² Maslow also insists on it when he states that people want more than what they have.

¹³ Adler, n. 11, pp. 35–38.

¹⁴ Martin Kettle, “Americans Adrift in Ocean of Fears,” *The Deccan Herald, Foreign Panorama*, Hyderabad, 9 August 2001, p. II.

¹⁵ Ibid.

¹⁶ Vikas Singh, “The Happiness Mindfield,” *The Times of India*, Mumbai, 11 July 2004, p. 8.

¹⁷ E.W.F. Tomlin, *Philosophers of East and West*, Oak Tree Books Ltd., London, 1986, p. 6.

¹⁸ In Sanskrit, roughly translated, means the soul. Also referred to as *atman*.

¹⁹ Rishi Kumar Mishra, *Before the Beginning and After the End*, Rupa and Company, New Delhi, 2000, pp. 117–127.

²⁰ *Encyclopaedia Britannica*, CD-ROM, 2001.

²¹ Normally it is “perceived security” not “apparent security.”

²² “Americans Turning to God to Heal,” *The Times of India*, New Delhi, 25 December 2001, p. 8. Mass prayers after a great tragedy, rituals accompanying traumatic events, etc., are examples. Many Americans turned to spirituality after the terrorist attacks on 11 September 2001, as reported in the media. Spirituality is a spiritual security activity.

²³ Also see note 5, Chapter 24.

²⁴ British born American revolutionary leader.

²⁵ Tomlin, n. 17, p. 10.

²⁶ Voltaire was the assumed name of Francoise-Marie Arouet who was a French philosopher and writer.

²⁷ Tomlin, n. 17, p. 11.

²⁸ Vishnu Bhagavat, *Betrayal of the Defence Forces*, Manas Publications, New Delhi, 2001, p. 7.

²⁹ Manoj Joshi, “Pakistani History does not Mention Surrender of its Eastern Command,” *The Times of India*, Mumbai, 25 September 2000, p. 1.

³⁰ Manoj Joshi, “War with History,” an interview with S.N. Prasad, retired director of inter-services historical section of India and Pakistan, *The Times of India*, Mumbai, 25 September 2000, p. 10.

³¹ Ibid. *Babu* is a widely used terminology in India, a bit caustic, though, for the bureaucrat vested with administrative powers—especially those who are considered inert.

³² “Taiwan Denies Netaji’s Aircrash,” *Hindustan Times*, New Delhi, 4 February 2005, p. 13.

³³ *Encyclopaedia Britannica, Ultimate Reference Suite*, CD-ROM, 2004. Also spelt Ch’in Shih Huang-ti (First Sovereign Emperor of Ch’in). Ch’in dynasty established the first great Chinese empire. The Ch’in, from which the name China is derived, established the approximate boundaries and basic administrative system that all subsequent Chinese dynasties were to follow for the next 2,000 years.

³⁴ Huge and Colleen Gantzer, “2000 Years of a Wall and its Warriors,” *Swagat*, December 2000, p. 45. This syndrome of forced isolationism is there among many social systems in the world. Isolationistic tendencies are changing under the compulsions of global determinants.

³⁵ Geoffrey Blainey, *A Short History of the World*, Penguin Books, New Delhi, 2001, p. 4.

³⁶ Ibid.

³⁷ Ibid. p. 9.

³⁸ Ibid. p. 13.

³⁹ Rodney Castledon, *World History*, Parragon, London, 1994, p. 1.

⁴⁰ (300 BC). Also called Chanakya or Vishnu Gupta. He was the mentor, counselor, minister and advisor to Emperor Chandragupta Maurya of Maurya Dynasty of Northern India (321–297 BC). He is credited with having authored the treatise *Arthasasthra*, that primarily is concerned with the state and its governance. It deals with property, economics and material success.

⁴¹ In Hinduism and Buddhism, *dharma* means the principle or law that orders the universe and individual conduct in conformity with this principle.

⁴² *Microsoft Encarta 2001*, CD-ROM.

⁴³ Ibid.

⁴⁴ Joseph J. Romm, *Defining National Security: The Nonmilitary Aspects*, Council of Foreign Relations Press, New York, 1993, p. 4.

⁴⁵ In Sanskrit—according to Hindu mythology, those with divine powers identified with the forces of nature and subordinate to one Supreme Being. They resided in heaven. Opposite to *asuras*, who were considered as a class of demons who opposed gods and humans.

⁴⁶ One of the principal Hindu deities, worshipped as the protector and preserver of the world and restorer of *dharma* (moral order).

⁴⁷ Language of the *Malayalees*, the people of the state of Kerala, India.

⁴⁸ Jaswant Singh, *Defending India*, Macmillan India Limited, Bangalore, 1999, p. 12.

⁴⁹ Greek mythographer who flourished in 300 BC and established the tradition of seeking actual historical basis for mythical beings and events.

⁵⁰ Arthur Cotterell (ed.), *World Mythology*, Parragon, Bath, 2000, p. 6.

⁵¹ Kaushik Mitter, “UN Hypes India’s Unity in Diversity,” *The Deccan Chronicle*, Hyderabad, 16 July 2004, p. 11. This was pronounced in the UNDP’s Human Development Report 2004. Cultural freedom and protection of cultural diversity is essential to prevent and resolve conflict.

⁵² Durga Das Basu, Preamble to “The Constitution of India,” *Shorter Constitution of India*, Wadhwa and Company, Agra, 1999, p. 2.

⁵³ Preamble to the “Constitution of the United States,” *Microsoft Encarta Online Encyclopaedia*, 2001.

⁵⁴ United Nations Development Programme, *Human Development Report 2000*, Oxford University Press, New York, 2000, p. 1.

⁵⁵ Alpana Lath Sawai, “The Bombay Plan,” *Sunday Mid-Day*, Mumbai, 25 July 2004, p. 5. The plan was to be funded by government, short-term loans, balance of trade, foreign borrowings, internal savings of the people, new money created against ad hoc securities on the inherent credit of the government.

⁵⁶ Ibid.

⁵⁷ Last major emperor of the Maurya dynasty in India, around 265–238 BC. After a bloody war, he renounced armed conquest and adopted the policy of *dharma* (principles of the right path in life).

⁵⁸ According to Thomas Cleary, the translator of the Chinese classic *The Lost Art of War*, HarperSanFrancisco, 2000, Sun Bin also known as Sun Tzu II was a lineal descendent of the Chinese military strategist Sun Tzu.

⁵⁹ 4th century BC. Author of *Ping-Fa (Art of War)* the Chinese classic on military strategy. It is the earliest known treatise on war.

⁶⁰ Sun Tzu II, *The Lost Art of War*, HarperSanFrancisco, New York, 1996, pp. 2, 111–112.

⁶¹ Adler, n. 11, p. 36.

⁶² Blainey, n. 35, pp. 493–511.

⁶³ Ibid. p. 511.

⁶⁴ *Encyclopaedia Britannica*, n. 20. Count Maximilian von Trautmansdorff represented the Holy Roman Emperor. The successful conclusion of the peace process was attributed to his sagacity. The French envoys were nominally under Henri d'Orléans, Duke de Longueville, but the Marquis de Sablé and the Count d'Avaux were the real agents of France. Sweden was represented by John Oxenstierna, son of the chancellor of that name, and by John Adler Salvius who had previously acted for Sweden at Hamburg. The papal nuncio was Fabio Chigi, later Pope Alexander VII. Brandenburg, represented by Count Johann von Sayn-Wittgenstein, played the foremost part among the Protestant states of the empire. On 1 June 1645, France and Sweden brought forward propositions of peace, which were discussed by the estates of the empire from October 1645 to April 1646. The settlement of religious matters was effected between February 1646 and March 1648. The war continued during the deliberations. These people are responsible for the concept of nation-states, perhaps the most important turning point in human history of collective living. Of course the style, many may argue, was European.

⁶⁵ John Ayto, *Bloomsbury Dictionary of Word Origins*, Goyal Saab, New Delhi, 1990, p. 361.

⁶⁶ Ibid.

⁶⁷ It is interesting that there is hardly a women founder for any nation. Does it come out of the hunting instinct of men?

⁶⁸ Ayoto, n. 65, p. 499.

⁶⁹ Arnold J. Toynbee, *A Study of History*, Vol. 2, Dell Publishing Company, New York, 1957, p. 125.

⁷⁰ The word “king” is used here to depict the ruler whether male or female. In the national security concept, the word “king” used in this book depicts the one who is in charge of governance in a group. It could also be a government.

⁷¹ French philosopher and writer. First to elaborate what it came to be called process philosophy. Process philosophy rejected static values for values of motion. Winner of 1927 Nobel Prize for literature.

⁷² Toynbee, n. 69.

⁷³ *Microsoft Encarta*, n. 42.

⁷⁴ In this study, god shifts to the realm of quintessential spiritual security.

⁷⁵ Karen Dawisha Kennan, “Containment, and Crisis in Eastern Europe,” in *Containment: Concept and Policy*, Vol. II, Terry L. Deibal and John Lewis Gadis (ed.), The National Defence University Press, Washington DC, 1986, pp. 401–403.

⁷⁶ Romm, n. 44, p. 2.

⁷⁷ Martin Walker, *The Cold War and the Making of the Modern World*, Vintage, London, 1993. According to the author, the Cold War has been the constant, implacable condition of the vast demographic wave of the children who were born, as the soldiers of World War II came home to a bitter and uncertain peace. It is poignantly focused history of a geostrategic style of 45 years in which the whole world participated directly or indirectly. Nobody was left out. For this reason, a researcher of national security can be misled to assume that the very concept of national security originated from the abyss of the Cold War. It was found not to be so.

⁷⁸ Ibid. pp. 1–7.

⁷⁹ Romm, n. 44, p. 2.

⁸⁰ Ibid. pp. 2–3.

⁸¹ *Encyclopaedia Britannica*, n. 33.

⁸² Scottish economist and philosopher.

⁸³ Ruddar Datt, *Indian Economy*, S. Chand and Company Ltd., New Delhi, 2001, p. 210.

⁸⁴ Ibid. p. 211.

⁸⁵ John Maynard Keynes (1883–1946). English economist, journalist and financier, best known for his economic theory on the causes of prolonged unemployment.

⁸⁶ Datt, n. 83, p. 214.

⁸⁷ Mohandas Karamchand Gandhi (1869–1948). Also called *Mahatma* Gandhi out of veneration. Indian nationalist and spiritual leader who led India's freedom struggle against British colonialism under the theme of non-violence. Revered as the father of the nation.

⁸⁸ Datt, n.83, p. 216.

⁸⁹ Verghese Koithara, *Society, State and Security*, Sage Publications, 1999, pp. 36–38.

⁹⁰ *PTI News Scan*, 5 December 2001.

⁹¹ The Great Depression was the economic slump in North America and Europe and other industrialised areas in 1929. It lasted ten years. It was the worst and the longest ever depression in the industrialised world.

⁹² Debashish Panigrahi, *Afternoon Dispatch and Courier*, New Delhi, 17 September 2004, p. 2.

⁹³ British-American anthropologist.

⁹⁴ *Employment News*, New Delhi, 11–17 August 2001, p. 1.

3

Defining National Security

*National security overrides all other considerations*¹

Atal Bihari Vajpayee

*It is economy, stupid*²

Bill Clinton

National security is a term that can evoke a great deal of interest in any forum and invite varying interpretations. Deliberations, considerations, opinions and cogitations will go on endlessly. The concept not only varies in individual perception within a nation-state, but also among nations themselves. Whatever may be the settings against which the term is framed, the unifying factor is that it is the people of a nation who matter in national security. In strategic thinking, a term has to be defined precisely. A concept will be abstract when it is not defined and worse when defined incorrectly. National security is one such concept. Confucius (551–479 BC), China's famous teacher, political theorist and philosopher is quoted as having said, "the beginning of wisdom is calling things by their right name."³ If not understood correctly an apple can turn out to be an orange when least expected.

LIMITATIONS IN DEFINING NATIONAL SECURITY

Defining national security is important in order to understand the concept in its clear perspective as well as furthering research into its dynamically evolving constitution. It is important in security centred nation building. If not understood, planning will be misdirected and costly; target selection will be injudicious. Incorrect policies and deviations can cause strategic blunders destructive to mission objectives. A well-defined concept with identified elements can overcome such impairments in policy making.

The phrase "national security" was not widely used until World War II. In a world premeditated with war, the concept continued to be associated with or perceived as "military security." The powerful gathers victory over a dispute or in a situation where conquest is the prime purpose. In spite of this predisposition of humans, there are evidences that the importance of national security beyond war was recognised even in its earliest days. The earliest known expression reported by

Romm was in 1790, when the Yale University undergraduates debated on the interrelation between fostering domestic industries and national security.⁴ Somewhere in the course of the conflict-ridden world, the idea of national security was still transforming. Temporarily the concept was diluted by its preoccupation with expressionism related to war, though war was the underlying concern. Other areas were neither studied nor easily understood since war was a serious affair that occurred throughout these epochs at regular intervals and lasted for long periods. Intellect developed as advancement in science and technology based on war efforts. It was not telescoped towards secured human life. Ironically security was associated with winning battles. The intellect developed, but was directed towards destruction. National security was closely associated with this intellect and thereby a concept meant for defending a nation from external aggression. It is yet to gain momentum in a wider facet. Even today, national security relates to military aspects. Therefore, defining national security as a concept beyond defending a nation from external aggression and related internal disturbances may not be acknowledged. Fear of unfavourable reception should not be a criterion for abandoning an attempt in finding truth from facts. In this book the attempt originates from the earnest conviction that the centre of gravity of the concept of national security lies outside the military aspects of national defence or aggressive combats for envisaged gain.⁵

DEFINING NATIONAL SECURITY

It is under these conditions that the term, national security, has to be defined and that too cautiously. There are scholars and authors who argue that the term has been overstretched to fit into the context. Most of them call for the distinct need to define or re-define national security.⁶ Some studies show that national security was centred only on military security until about World War II and earlier decades of the Cold War.⁷ Thereafter there is a visible shift in thinking, though wars are still critical in a nation's security. Various authors identified national security with a host of variables and unknowns in an effort to model it. Some devised periods as variables that changed the concept of national security in the path of its evolution. The parameters included military power, economic conditions, global alliances, support from international organisations, etc. The periods identified were that of the World Wars, Cold War and other factors that affected global stability.⁸ The recipes varied in relation to space (geographical location), time (whether there was stability in the region during the period), attitudes of superpowers towards the countries concerned, the hostility of neighbours (or otherwise), the internal security situation, economic vulnerability, social equilibrium and a host of other factors.⁹ Defining the concept has to be seen against these backgrounds and beyond. The existing definitions, occasions of usage, collective acceptance of the term, activities related to the execution and governance of national security, ongoing debates and, above all, the objectives and the ultimate goal of national security need to be examined. In an exploratory mode, it is best achieved by examining the definitions of the concept evolved over the period.

DEFINITIONS OVER THE PERIOD

In course of time the search for definitions of national security will lead to the exploration of the evolution of human systems. To understand the perceived meaning of national security, it is necessary to sift through the existing and now discarded terminologies, expressions and analogies. In order to get to the actual meaning, the perceived meaning needs refinement, especially when strategists feel the concept is not clearly defined.

India's leading strategic institute, The Institute for Defence Studies and Analyses (IDSA), New Delhi states that its purpose is, "to conduct multidisciplinary study and research on issues of defence and national security." In this statement, made in 1965,¹⁰ national defence is separated from national security. There were many descriptions that originated from the United States since the deliberations at Yale University in 1790. Romm quotes a statement made by political scientist Harold Lasswell in 1950, that all measures which are proposed in the name of national security, do not necessarily contribute to the avowed end... According to Lasswell, security lies in the best balance of all instruments of foreign policy. It means coordination in the handling of arms, diplomacy, information and economics, and correlation of foreign and domestic policies.¹¹ Lasswell's opinion contains the policy of state and related instruments, and also scans the elements of national security identified as diplomacy, arms, information and economics, as perceived in that period. Romm also quotes another political scientist, Arnold Wolfers writing of the phrases "national security" and "national interest" in his 1962 essay *National Security as an Ambiguous Symbol*. Wolfers was of the opinion that the term national security might not mean the same thing to different people. He states, "thus, while appearing to offer guidance and a basis of broad consensus, they may be permitting everyone to label whatever policy he favours with an attractive and possibly deceptive name."¹² Here the emphasis is on the ambiguity in defining the term. It is caused by the problems in defining the threat perception accurately. Threat precedes a security issue. Identification of the threat module is an indicator in the process of defining national security. Romm mentions Barry Buzan to further stress the point. According to Buzan, the term, national security, as a concept is weak and ill defined, yet at the same time it is powerful and politically strong.¹³ It was a powerful statement on a feebly defined concept. Buzan attributes the ambiguity to "power-maximising" strategies of political and military elites for leverage over domestic affairs invoking it. It can bring in the contention that the ambiguity is deliberate and aimed at power maximisation.

The contention that national security cannot be defined precisely by anybody can also be seen in the 1973 statement of Moss, representative and chairman of the House subcommittee of the US Senate that considered the original 1967 Freedom of Information Act. According to Moss, national security was an ill-defined phrase.¹⁴ William Blair, the US Deputy Assistant Secretary of State for Public Affairs in 1972 stated that the national security of the United States depended

on many elements that included the balance of payment, economic affairs and foreign assistance. Such statements lead to the acceptance of the term as a concept besides foraying into its probable elements. The Yale Review that noted in 1976, that national security had long been recognised by courts as a notoriously ambiguous and ill-defined phrase, soon followed this statement.¹⁵ All these statements over the period firmly establishes the evolutionary idea of national security as a reality and accepts the fact that the term is ill-defined and used as required in accordance with the users policy and purpose. The definitions are with choice toppings even though the underbelly seems to be rather identical. It is about the security of the people in a nation-state. The security is not just physical, but also covers other aspects of day-to-day life based on devoted human needs. A few of the definitions are examined below before charting them in an evolutionary pull down menu in the concluding paragraphs.

According to Walter Lippmann (1943), national security prevents the need to fight a war and assures victory if one has to fight: "A nation has security when it did not have to sacrifice its legitimate interests to avoid war, and is able, if challenged, to maintain them by war."¹⁶ War and military are at the centre of the statement. This definition points out to a nation's legitimate interests that are not articulated, but could be done with a little effort. It will be a variable based on opinion and also from state to state, that too based on time and period because of continuous changes in the world. This uncertainty is a major factor in decision-making. The uncertainty causes predicaments in military preparations. The focus will be military centred with diplomacy playing in the background. It is as good as stating that, "National security means military power capable of protecting national interests." This definition points out the fixation of position from the basement of military strength.

The United States' National Security Council in the 1950s advocated "the concept of national security for preserving the United States as a free nation with their fundamental institutions and values intact."¹⁷ Here the terms, free nation, fundamental institutions and values are ill-defined. Does freedom mean the ability to dominate the world by coercive diplomacy or military power? It can be so considering the superpower status of the United States. It also means that the superpower perhaps, will need an entirely new definition for national security and therefore, it is not the model applicable to other nations unless they are the prospective superpowers in a world that is yet to come. While fundamental institutions may be static unless seriously changed by constitution, the value system can always change. History proves it. Definitions by variables still do not achieve the required purpose of stability. That affects planning for governance.

According to Arnold Wolfers (1962), Security, in an objective sense, measures the absence of threats to acquired values, in subjective sense, the absence of fear that such values will be attacked.¹⁸ Practicality of the idea should be the centre of the concept of national security and the definition should point out towards it. The strategist needs to mould it. In Wolfers' statement there are two unattainable situations: absence of threat and absence of fear. Both fear and threat are absolute forms of life's paradox. They justify the concept of national security.

The International Encyclopaedia of Social Sciences (1968) defines national security as the ability of a nation to protect its internal values from external threats.¹⁹ Here the

threat is perceived only to internal values—the target. The threat dimension is singular—external. It is a case that is applicable in a limited sense. Threat is multifaceted and multi-dimensional. It is explained later in the book.

According to Amos Jordan and William Taylor (1981), national security is beyond physical harm and has a more extensive meaning.²⁰ It is also implied protection through a variety of means of vital and economic interests, the loss of which could threaten fundamental values and vitality of the state.

Charles Maier defined national security in 1990 “as the capacity to control those domestic and foreign conditions that the public opinion of a given community believes necessary to enjoy its own self-determination or autonomy, prosperity and well-being.”²¹ Autonomy is alternated with self-determination, but the fact that self-determination can be a challenge to the needs of the weaker has to be taken into consideration. Majority votes need not satisfy security requirements.

Author Vinod Saighal speaking about India, stated that, “if India’s national security aim for the second half of the 20th century could have been succinctly defined as the preservation of India’s unity, the country’s aim for the first half of the 21st century could equally succinctly be defined as the preservation of the integrity of the subcontinent, as an essential prerequisite for the global equipoise for the third millennium.”²² His perception is in a subjective mode, as an entity that needs to have an aim that changes with time. Changing direction distorts definition. The suggestion therefore could be seen as maximisation of the defined concept. It is an important finding. Maximisation of a concept is a desired process in its governance by objective when the exact limit is neither known nor can be reached by the very nature of the concept.

The proceedings of the Seminar on, A Maritime Strategy for India, 1996, of the National Defence College, New Delhi, India, states, “a nation’s security flows from an appropriate and aggressive blend of its political resilience and maturity, human resources, economic structure and capacity, technological competence, industrial base and availability of natural resources and finally its military might.”²³

The Report of the Group of Ministers (GoM) in India subsequent to the Kargil²⁴ conflict between India and Pakistan in 1999 states national security “as a function of a country’s external environment and the internal situation, as well as their interplay with each other.”²⁵ Features of the prevailing international order, the position of its immediate and extended neighbours, and the major powers influence the former.²⁶

In the maze of various explanations, the term national security, resides ambivalently permitting all those concerned with it the freedom of expressing themselves. For some, it is intelligence gathering like the way in which the signal intelligence set up of the United States was transformed into a national security agency (NSA) in 1952, by a presidential directive. The United States had already passed the National Security Act in 1947 and established the National Security Council (NSC) within the executive office of the president. Its function is to advise the president on domestic, foreign and military policies related to national security. A special assistant for national security affairs, who is also the national security advisor to the president, heads the NSC. This model is copied by many other nations within their own perceived requirements. The NSC is primarily interested in foreign affairs and policy independent of the foreign office. Military aspects come close to such liaison.²⁷

The ambiguity in the concept of national security is natural considering the requirements perceived by each nation. It arises from the bifurcations on threat perception, identifying the ideas of “nation” and “security,” and broadening the definition by induced ambiguity for power maximisation. It is therefore, necessary to examine the very concept itself. Does it exist? If so, in what form? Does it change according to times? Is power maximisation the sole motive? Can’t the world, as a whole, accept it as a unified concept? If not, can a special standard to compare various perceptions of the concept be established? These questions are well answered. The concept of national security exists as can be seen from its references as well as establishments across the world. Its importance is increasing. It is a subject for the world to define, look up and maximise as a single entity for the benefit of humankind. It is expected to guide governance towards the well-being of the people of a nation. It is a global subject; the trends are that it may refuse to be contained within the rudiments of nationalism in course of time, however long it may be. It also takes on the fact that ensuring territorial inviolability is only part of the concept and not the concept itself. This argument rules out the conviction that military security is national security. Joseph J. Romm,²⁸ whose authentic findings have been mostly examined so far preferred to turn out to the definition given by Richard Ullman in 1983 on national security. According to this definition, a threat to national security is an action or sequence of events that threatens drastically and over a relatively brief span of time to degrade the quality of life for the inhabitants of a state, or threatens significantly to narrow the range of policy choices available to the government of a state or to private nongovernmental entities (persons, groups, corporations, etc.) within the state. Here the affirmation is on quality of life and the factors that threaten it. Next, the interpretation focuses on the nature of government—the process of governance itself. Romm’s adaptation of Ullman is an excellent way of concluding an evasive concept.

According to writer Anuradha M. Chinoy, it is time to decide whether to retain the traditional notion of national security or to think of an alternative.²⁹ The traditional notion is not clear. But it is known that national security is paramount to a modern state that creates and maintains political and other structures to ensure state security. The author states that, for national security, the state combines force through its military power and consent in these exercises.³⁰ Neo-realist (and realist) theories that provide the theoretical foundation for this, argue that the security of individuals is linked with the state that preserves the special order and protects them from invasion by aliens and from injuries to one another. In the national security discourses, the state has appeared to be masculine and virile only when it has adequate force (and nuclear capacity) and is seen as emasculated and categorised as a eunuch without it.³¹ Is it the soft state syndrome? A nation is identified as a soft state when it cannot face the threat and thereby avoids it. It is evident in a situation when a national airline is hijacked to an unwieldy terrain without a snack bar and the country is kept hostage by a bundle of gun wielding thugs who haven’t had a shower for months. Here the entrapped passengers are symbolic to the country.

The government yields, more under internal pressures than that from the hijackers, and releases the prisoners in exchange for the lives of the passengers who go through unimaginable trauma. What happens here? The will of a country is broken. It crawls to please the hostage takers. Besides internal pressures, affirmation can also come from the superpower and its mediators. Often the public is not aware of the happenings in the background. They watch the news breaking on their television tubes in the comfort of their homes.

The Indian Navy's seminar on the occasion of the international fleet review on 16 February 2001 in Mumbai, India, was interestingly modern in its presentation of national security concerns. In spite of being a military armed force, the naval strategists were unanimous in their appreciation of national security as a multi-dimensional concept comprising political, environmental, economic, defence and cultural aspects. There was a general consensus that it was not just a matter of warfighting and combat preparation. On the other hand, the previously mentioned seminar in the National Defence College, New Delhi, observed the idea of national security as military oriented. The speakers stated that when it came to planning, the tendency was to focus on clearly identifiable military threats to territorial integrity alone.³² In another seminar at the Defence Institute of Psychological Research, New Delhi, India, R. Gopalaswamy and others acknowledged that national security implied far more than the traditional concept of pure military power with its supporting hardware. It encompassed all the major elements affecting the development of a free nation-state: geopolitical, economic, technological, ecological and demographic. Non-military factors could impact the progress of a nation in a very significant manner demanding a holistic approach.³³ All such statements show the projection and influence of the term national security in today's strategic psyche. Such thinking invalidates the military theory as the sole element of national security.

It has come out in the unclassified amplifying report of the GoM of India in the wake of the Indo-Pakistan conflict in Kargil in 1999, that India was not prepared militarily. The report was primarily aimed at military security, safeguarding the interests of the nation from external aggressors. The recommendations included creating a National Security Council, joint command concept, nuclear doctrine and other subjects related to military strategy rather than an overall national security strategy involving non-military aspects. Therefore, there is the possibility of the National Security Agency of India being preoccupied with military security if its post-Kargil genesis is followed. The extensive Kargil Committee Report of India did not define national security holistically.³⁴

There will be more viewpoints on national security. The definitions will be based on the time or period controlled perceptions of life. Votes will sway based on such perceptions in electorates. Victory and defeat of a political candidate in an election will be based on such vacillating modes of perception. But a strategist who provides support in planning to a government cannot hang on to a turnstile perception. The perception has to be realistic, firm and visionary. Planning is for

the future and any decision taken at a given point in time will have its impact at different points later.

CHANGING PERIODS

Though security is a primordial quest for a human system, the term national security, as projected today is a recent development. The expression originated in the United States. Other nations accepted it and used it appropriate to their requirements. For the United States, the threat perception is far-reaching. It is beyond national boundaries with the concern centred on the “homeland”, the new term in circulation. However, the core of the concept remains intact, though secondary parameters may have changed. It is therefore, pertinent to see the changes through the periods in the original conceptual system in the United States to follow the path. But the difficulty is in deciding whether it is the American model that is to be considered by the rest of the world or not. The reason is simple. The US is considered to be a superpower. If so, its objectives have to be different. The model it follows in national security is for itself and the prospective superpowers of the world to consider with appropriate adjustments once they hold the post replacing the existing superpower. The world becomes monocentric with the instatement of a nation as the superpower by acceptance of its presence by others, subliminally or otherwise. It has happened for the first time in history. The world became monocentric after the clash of ideologies of the Cold War and subsequent disintegration of the Soviet Union. The concept of superpower in the world of nation-states is different from that of the empires of history. It is new and is a sign that the world had better not miss. The word “super” is an adjective lavishly used everywhere to indicate the entity that tops in a particular field. In the case of a country, it will be the one with higher bargaining and negotiating power. The super entity may get replaced after a period of time, according to the ways of human life. The views of the world are paramount in decisions on national security. People’s opinion will vary with generous indulgence in possible alternates. The views have to be analysed from all angles before conclusion. Romm³⁵ quotes two periods in broadening the idea of national security in the United States, within the span of a decade. The first occurred in the mid-1970s after the humiliating defeat in Vietnam. Inflation rose amidst the growing economic strength of Japan and Europe, and the first oil shock. In 1974, General Maxwell Taylor identified the most formidable threats to the United States in the non-military field. These included energy crisis, population explosion, retarded economic growth, higher costs of industrial production, new deficits in international payments and rising inflation.³⁶ In that year, other nations may have had some of these priorities in their agenda. In 1977, Lester Brown, the President of the Worldwatch Institute, discussed the energy crisis and such “economic threats to security” as inflation and migration, as well as “food insecurity” and related factors such as deforestation, soil erosion, and the threat of climate modification, including the greenhouse effect.³⁷ The list of concerns of

national security started lengthening. The second period began in the late 1980s with the changes in global development. Jessica Tuchman Mathews, vice president of the World Resources Institute, wrote in the 1989 issue of *Foreign Affairs*, that global developments suggested the need for broadening the definition of national security to include resource, environmental and demographic issues.³⁸ In the 1990–91 Winter issue, six primary areas for US national security policy were listed by Theodore Moran, Director of the Program in International Business Diplomacy at George Town University’s School of Foreign Service. They were:

1. Encouraging stability and reform in Soviet Union
2. Maintaining a cooperative US–Japanese relationship
3. Avoiding vulnerabilities from the globalisation of America’s defence industrial base
4. Reducing dependence on oil from the Persian Gulf
5. Moderating the impact on the Third World of the prolonged debt crisis.
6. Limiting damage from narcotics trade³⁹

How many of them are relative to the current and evolving scenario is an area that one can explore, but more important is the threat perception, geostrategic impacts, retention of superpower status, conditions for survival, and economic and energy security aspects, on national security. The list of Theodore Moran seemingly did not anticipate the effects of disintegration of the Soviet Union two years hence. Period analysis of the development of the concept of national security in the United States could also be seen outside Romm’s findings. The first period could be dated back to the Japanese attack on Pearl Harbour (7 December 1941) that was impetuous for the determined entry of the US into the Second World War and the final revenge with a nuclear showdown. If the debacle in Vietnam broadened the perception further, the third period commenced with the terror attack on 11 September 2001 when it unilaterally decided to counter the attack on its homeland. The 21st century “war on terror,” as the United States rationalises the act, supports military involvement to counter terrorism. It was more a transformation in the policy of national security than seeking revenge in its latest form. The transformation originates from the realisation that a superpower loses geostrategic esteem when it is projected as being vulnerable to terror or military attacks on its own soil. The concept of homeland security for the US reflects shades of military security applicable to other nations, though the concept of national security permeates beyond military affairs.

K. Subrahmaniam in his introduction to author Jaswant Singh’s book *Defending India* (1999) supports the latter’s conceptualisation of national security in broader terms encompassing economic development, food security, energy security, environment, etc., including evolving threats.⁴⁰ These observations broaden the concept of national security beyond military affairs. All these findings and observations suggest that the concept gradually evolved to include non-military components in its domain. The phrase was never defined properly. Those engaged

in national security issues should therefore, include not only those concerned with military and associated matters, but also experts on non-military aspects of national security. There is no singular expertise in national security governance. It is a multi-dimensional reality concept. In the concept of a state, nothing defines the concern for its people better than its Constitution and the best way to view a Constitution is from democratic institutions. The two Constitutions examined in this chapter (those of India and the United States) and the United Nations' humanitarian concepts point out the basic concern for humanity. According to the UNDP, they are justice, liberty, equality, fraternity, unity and integrity, welfare, equality and freedom. All these leads to the ultimate location—the well-being of people under the principles of equality for the unity and integrity of the nation-state. It is different from human development, improving quality of life or aiming at the chimera of absolute happiness. National security provides for apparent security, which is for everybody. Examination so far percolates to reliable conclusions on the subject.

- National security is a realistic concept that relates to safety, security and psychological aspirations of the people of a nation concerning their well-being in accordance with their needs and, therefore, has to be universally common to all.
- Hence, national security is a definable entity. The definition has to be arrived at by closely examining the existing definitions and the evolution of the concept from the earliest known time.
- Once defined, it could be measurable with respect to time and capable of modelling.
- Humans were concerned about their safety and security since the beginning. It is the same security principles coupled with the understanding of human aspirations that are to be considered within the framework of a nation.
- National security comprises various elements that are to be identified with the parameters integral to its evolution.
- This indicates that there could be elements that were prominent in the past and lost importance subsequently and also a chance for new elements to come up in the future.
- If national security is about the well-being of people, then the objective is to maximize the well-being.

DEFINITION OF THE CONCEPT OF NATIONAL SECURITY

Defining national security for universal acceptance is a challenge. All the existing definitions of the concept project its significance and relevance in relation to national policy. They are appropriate to the situation though seemingly not in consonance with the developments of the world. An attempt to define the concept may not therefore be the end by itself, as situations can drastically change in the

future. Reaching out for a definition involves careful examination of applicable factors that broadly include the following.

- (a) *Random Definitions and Perception over the Years*: The definitions of national security varied along with the evolution of time and perception of human beings. The variations also project the changes *en route*. The definitions and perceptions starting with the earliest known references as described by various scholars can be examined for their adaptations:
- *Yale University, United States of America (1790)*: First mention of national security in which reference was made to its relationship with domestic industries
 - *The two World Wars including inter-war period*: Preoccupation and fixation of the centuries with war and military matters were re-emphasised throughout the period, irrespective of the interruption between the first and the second
 - *Walter Lippmann (1943)*: National security was the ability of a nation to retain its legitimate interests without a war, and if challenged, to maintain them by war
 - *Senate hearing, United States of America (1945)*: Enquiry into broadening the concept beyond defence. It was a peep into a much wider connotation
 - *NSA, the United States of America (1947)*: Practical body to advise the president on the integration of domestic, foreign and military policies relating to national security
 - *NSC, United States of America (1950)*: Considers national security as the ability to preserve as a free nation with its fundamental institutions and values intact
 - *Harold Lasswell (1950)*: Balancing of all instruments of foreign policy; coordinated handling of arms, diplomacy, information and economics; proper correlation of all measures of foreign and domestic policy
 - *Arnold Wolfers (1962)*: An ambiguous symbol meaning different things to different people. National security objectively means the absence of threats to acquired values and subjectively, the absence of fear that such values will be attacked
 - *IDSIA, New Delhi (1965)*: Seemingly original on the idea in India that national security is a wider concept than defence
 - *International Encyclopaedia of Social Sciences (1968)*: Defines national security as the ability of a nation to protect its internal values from external threats
 - *William Blair (1972)*: According to Blair, the concept depends on things like balance of payment, economic affairs, foreign assistance, etc.⁴¹

- *Moss (1973)*: Brings out the paradigm of an ill-defined phrase
- *Yale Law Review (1976)*: Concurs with the ambiguity factor and imperfection in the definition of the concept
- *Jordan and Taylor (1981)*: Refers to the concept as more extensive in meaning than mere physical security
- *Barry Buzan (1983)*: Reiterates the imperfection in the definition, but considers the concept to be strong with the potential for power maximisation under ambiguity
- *Richard Ullman (1983)*: Narrows down to the quality of life and the range of policy choices available to the government or private non-governmental entities
- *Charles Maier (1990)*: Considers the concept to be the capacity for self-determination or autonomy, prosperity and well-being
- *Cold War (1948–1991)*: The world turned around on a bipolar symmetry similar to a world war with conflicting ideologies and subsequent containment policy of the United States against the Soviet Union and its supporters. The scenario was that of a war of sorts. The Cold War on a bipolar front was fought on political, economic and informational (propaganda) fronts, though recourse to weapons was limited
- *National Defence College, New Delhi (1996)*: Defines the concept as an appropriate and aggressive blend of political resilience and maturity, human resources, economic structure and capacity, technological competence, industrial base and availability of natural resources and finally the military might
- *K. Subrahmaniam (1999)* in his introduction on author Jaswant Singh's book "*Defending India*": Talks about the author conceptualising national security in broader terms encompassing economic development, food security, energy security, environment, etc., including evolving threats⁴²
- *Vinod Saigal (2000)*: Preservation of the unity and integrity of a nation is an essential prerequisite for global equipoise; the author succinctly advocates maximisation of the process
- *Anuradha M. Chinoy (2000)*: Advocates the need for defining the concept and considers that it is time to think of an alternate identity. For national security, the state combines force through its military power and consent. Otherwise it is considered a weak state
- *The Report of the GoM, India, subsequent to the 1999 (Kargil) Indo-Pak Conflict, (2001)*: The report states that national security is a function of a country's external environment and the internal situation, as well as their interplay with each other
- *International Fleet Review Seminar of the Indian Navy (2001)*: Acceptance of the idea of national security as a multi-dimensional

concept comprising political, environmental, economic, defence and cultural aspects

- *Scholars speak on various occasions:* Various intellectual inputs include importance of geographical location, periods of stability, attitudes of superpowers and powerful countries, neighbourhood hostility, internal security situation, economic vulnerability, social equilibrium and a host of other factors

- (b) *Threat Perception:* Threat is forewarning of impending danger or harm. It is multi-dimensional and can be identified even if invisible and abstract. After a serious study, the author has classified threats along a three-dimensional cube: external—internal; covert—overt; and direct—indirect.⁴³ The types of threats as per the cube are real and present. The degree or the intensity of a threat may vary with respect to time. The search for a definition should begin in correlation to the threats identified in the threat matrix cube. A detailed analysis of threat perception and its multi-dimensional character and interactive matrix is given in Chapter 5.
- (c) *Components and Meaning of the Term—National Security:* While “nation” refers to a people within a recognised national boundary, “security” relates to the satisfaction of their needs—physiological and psychological, including emotional. Security is a variable in its availability but not in its concept. The profiles and characters of nations vary. Within the volatility of a nation and its governance, the concept of national security can undergo changes coupled with chance. The formula for national security will be contingent to such changes.
- (d) *Relativity with Respect to the Period:* The concept is a function of time. At the same time, the definition should remain constant in time. While the threat matrix will remain unchanged, the nature of threat and its intensity will undergo continuous changes within it.
- (e) *Constituent Elements of National Security:* Identifying the constituent elements of national security is important in order to manage them and to maximise the concept. It is the primary purpose of national governance. In his research the author identified 15 elements⁴⁴ that are expected to contribute towards national security in an interactive matrix. The elements are explained in Chapter 4.
- (f) *Conditional Factors of National Security—Misrepresentation of Elements:* Often, a condition or a threat whether temporary or permanent, is misrepresented as an element in administrative decision-making on national security. This is caused by ambiguity, and when the systems turn towards the symptoms for treatment rather than the actual problem. The need for identifying the conditional factors, therefore, is paramount to separate them from the elements of national security. This is further explained in Chapter 4.

- (g) *The Concept of Global Security*: Global security is national security focused worldwide. Currently, global security is a concept that is asymmetrical with a nation-centred security perception, though it has all the necessary ingredients for evolution. The step towards global security was unwittingly laid in the post-World War I world, when the League of Nations was constituted. Global security is also a parameter while considering a definition for national security. Though unapproachable in the current context, an attempt is made in a separate chapter (Chapter 25) to examine the concept of global security. Unforeseen events that may threaten the existence of nations as separate entities can accelerate the world towards global security. The chances are quite limited, though. This book attempts only a peek into the concept. The integration of nations under the European Union, erosion of governmental power under globalisation, the US campaign of “war on terror”⁴⁵ that commenced soon after the 11 September 2001 terrorist attacks in New York and elsewhere have united (again unwittingly) a good part of the world mindset, if not nations.

Examples and criteria can be extracted from many sources for analysing the concept of national security. The examination so far is at random. There was a fleeting reflection on the subject in a collective gathering organised by an Indian daily, *Hindustan Times* at New Delhi on 5–6 November 2004. Select personalities discussed “India and the World: A Blueprint for Partnership and Growth” according to their insight. The keynote speakers were Manmohan Singh, the prime minister of India, and Sonia Gandhi, the president of the ruling Congress Party. Manmohan Singh’s posture was that of the world in general and India’s resilience and tolerance with a will that was determined to bring security to the people. Sonia Gandhi’s notable statement was that the world was still treated to a regime of groupings based on the Second World War outcome, and that the UN Security Council as now constituted, was not just unrepresentative, but also unintelligent. She argued that the US ideology of selective appreciation of terrorism was incorrect. According to her, such an attitude could be dangerous to global cause and security.⁴⁶ Chandrika Bandaranaike Kumaratunga, the president of Sri Lanka wanted history to be allowed to go on at its own pace without interference by the people. Her statements may raise questions such as, “are not interruptions part of history or can the world control interruptions that are natural?” The finance minister of India, P. Chidambaram was open in his admission that global price rise was not under the control of a government. It was an admission of the fact that global changes could impact the policy decisions of a nation and the control of the ruling power of the government. But, in national security, a nation has to have control over the global decisions that may affect its security. A nation does not mean the government. Nations are larger than governments. Arun Shourie, the former disinvestment minister of India, spoke about misguiding people in a democracy. But the principles of democracy

where the people have to elect their leaders, require that they have the capability and knowledge in the electoral process, and the understanding to avoid splintered mandates. Farouk Abdullah, the former chief minister of Jammu and Kashmir, India, highlighted the need for people-to-people contact and interactions to overcome such difficulties.⁴⁷ From his statement, it was clear that the people have the right to know—that leads to informational security. According to Pakistani politician Imran Khan, the position of Kashmir can be resolved by credible polls umpired by the UN. In reaction, Farouk Abdullah was quick to dismiss plebiscite as the way of determining a nation-state.⁴⁸ It was a case that imposed the principle that the people do not decide the nation-states in their original forms. People are decided by nation-states, even if some of them do not want to be there. Once settled, people decide their governance. Children do not decide their parents, at least before birth. They can divorce their parents and go away thereafter. Arguments for plebiscite in a human system are freaky attempts of skewed thinking, though wily and crooked at times. The freakiness can be exposed in the question, “if plebiscite is a choice why can’t it be applied worldwide once for all?” Can the world population be given one final choice to decide their country? What will be the result? Imagine a plebiscite, once and for all, under the (currently) highly confused and unstable UN for the whole world population to choose their favourite country! That will make the superpower of the day the most populated country in the world overnight. Well, such a plebiscite may halt migrations of all kinds for the moment. The whole concept of plebiscite in any part of the world considered under dispute could be a reflection in absurdity from this perception. Once the world has accepted the principles of nation-states, it is also important to concede to the fact that it is the nations that decide their people and not the people who decide their nations. It is the natural process, though this statement may look even intellectually absurd and hard to grasp. This revelation will come when people understand that they have no choice in the game. Of course, people can leave and migrate to another nation by choice, but they cannot change their nation *in situ* by means of a plebiscite. Fragmentation by partition, etc. is a different game in geopolitics. A nation is stable when it sways well without breaking down in all kind of turmoil internal and external to it. Absence of turmoil is not indicative of stability. Stability is the ability to withstand turmoil. Kumaratunga had another message: a united South Asia. According to her, there were only a few issues that kept South Asia apart.⁴⁹ Was it a subconscious suggestion from a responsible president of a nation reeling under insecurity and fear of disintegration? “Let us huddle” is a primitive instinct. It is not strictly unification. A united South Asia is an impossible dream. Whether the gathering was a conglomeration of prejudiced wisdom, learned experience, or traumatised feeling of geostrategic reality, the subjects of discussions revolved around humans. There was an identity of mind that the ultimate solution lay in human-centric governance, though it was not forthcoming as a declaration. The changing definitions and its approach by various segments of people clearly indicate that:

- (a) The concept of national security is existent in a form that is still vague
- (b) The concept is not likely to fade away; instead it will gain more strength in the course of time
- (c) It is already extending to global security since World War I, at least ideologically
- (d) There is a likelihood of the concept further extending towards global security at least partially in course of time
- (e) Hypothetically, if this is the case, national security concept should merge with global security one day while considering the hierarchy of human development although the chances are remote
- (f) It is an evolving concept and thereby, a function of time in human life.
- (g) It is related to humans and not the geo-property rights or other aspects of the sovereignty of a nation
- (h) The government is irrelevant but has conditional influences

DEFINITION

One of the ways to minimise ambiguity in a definition is to formulate a complementary statement. This is possible by introducing a mathematical variable. A suitable variable such as, a function of time, will be an index for national security. Once the national security index (NSI) is introduced, the concept can be explained as a measurable entity: *The state of apparent well-being of the people of a nation based on the aspirations of the ordinary people of that nation.* This is not the definition, but a perception of the concept. The state of well-being should be indexed within acceptable parameters particular to each nation. Here, it is necessary to elaborate on a nation, its people, the meaning of the term ordinary people and their aspirations in understanding the process of approach to a definition. People are central to it. They aspire for perceived security within their own limitations. It is applicable to the entire people of a nation—the super rich, rich, lower rich, middle, lower middle, poor or below it, the seven generalisations of people in terms of wealth and purchasing power. With this foreclosure and probability of introducing a mathematical assessment index, the term national security can be defined as:

The measurable state of the capability of a nation to overcome the multi-dimensional threats to the apparent well-being of its people and its survival as a nation-state at any given time, by balancing all instruments of state policy through governance, that can be indexed by computation, empirically or otherwise, and is extendable to global security by variables external to it

Well-being is about the entire population of the country getting elevated by the fulfillment of their hierarchical needs to the conditional state of self-actualisation, the highest level in Maslow's hierarchy of needs. There are two disclaimers here. Firstly, no governance can expect to take the people to that level. Hence, governance in national security is a process theory. Secondly, it is important to understand that self-actualisation for the purpose of national security is not just engagement

in creative activities for the purpose of freelancing within spiritual security in the absence of perceived security. It is the transcendence to self-actualisation within apparent security. Such self-actualisation is an indication that governance is effective. From another point of view, it can be said that, *it is the state when the survival instinct does not affect the individual motive of self-actualisation and thereby creativity*. This sums up the definition of national security as a concept that denotes the well-being of the populace of a nation that includes its domestic and geostrategic prosperity, in which the strength of that nation is seen against the multi-dimensional threats faced by it at any given time. Once the concept of national security is identified as a measurable quantity and a function of time, it could very well be indexed. Such indexing will give rise to the NSI, which will be a sliding index with respect to time and will need serious research for indexing and identifying appropriate parameters for accuracy. Once the NSI is assessed it will be easy for comparative analysis of nation-states in the world and for internal evaluation related to progress of a particular nation-state that could be audited by the people themselves. The NSI could be a reliable and intelligent index in assessing the state of a nation at any given time.

CONCLUSION

The evolutionary path to the concept of national security begins much before the origin of nation-states. National security is the apparent physiological, mental and emotional well-being of the people of a nation, defined accordingly as a measurable state. The word “nation” may be a misnomer in its early evolutionary stages but when conjoined with security, the meaning ends up with the well-being of a human system that in the form of a nation-state, is today the largest formal group. Table 3.1 progressively highlights the evolution of the concept.

TABLE 3.1 Evolution of Elements: Defining National Security

<i>Origin</i>	<i>Definition Dilemma</i>	<i>Constituent Elements</i>	<i>Elements Identified for Examination</i>
1. Prehistoric	Survival	Physical security	Muscle power
2. Hunters	Survival	Physical security	Muscle power, primitive weapons
3. Epics	Survival	Physical security	Campaigns
4. Spirituality	Supplements needs in the perceived security gap	Mental aspects for existential balance	Religion and inner self
5. Yale undergraduates (1790)	Earliest reference to the term national security	Fostering domestic industries	Non-military security for military security

(Contd)

Table 3.1 *Contd*

	Origin	Definition Dilemma	Constituent Elements	Elements Identified for Examination
6.	Adler (1870–1937)	Apparent security	Communal living	Organised protection
7.	Maslow (1908–1970)	Hierarchy of needs	Physical and psychological needs	Existentialistic deeds
8.	US Senate (1945)	Security is not just defence	Other than the navy and army	Non-military aspects
9.	NSC (US) (1947)	Flexible for wider use	Value based protection for freedom	Military and non-military
10.	Lasswell (1950)	Balancing instruments of policy	Arms, diplomacy, information, economics	Military and non-military
11.	Wolfers (1962)	Absence of threats and fear	Value based protection	Military and non-military
12.	IDSA (India) (1965)	Ambiguity	National defence and national security	Military and non-military
13.	International Encyclopaedia of Social Sciences (1968)	Power to protect external threats	Value protection	Military and non-military
14.	Blair (1972)	Dependency on economics	Balance of payments and foreign assistance	Non-military
15.	Moss (1973)	Ill defined phrase	Freedom of information	Non-military security
16.	Taylor, Maxwell (1974)	Non-military threats and the State	Energy, population, economy, technology, international trade, inflation	Military and non-military security
17.	Yale Law Review (1976)	National military capability	Military to protect interests	Military security
18.	Brown (1977)	Non-military	Energy, environment, climate, economy, illegal immigration, food	Non-military security
19.	Jordan, Amos and Taylor, William (1981)	Larger scope than physical security	Protection of values and vitality	Military and non-military

(Contd)

Table 3.1 Contd

	Origin	Definition Dilemma	Constituent Elements	Elements Identified for Examination
20.	Ullman (1983)	Threat based perception	Quality of life, policy choices	Military and non-military
21.	Buzan (1983)	Power maximisation	Political and military power as leverage for domestic affairs	Power: military and political
22.	Mathews, Jessica (1989)	Broadening definition	Resource, demography, environment	Military and non-military
23.	Maier (1990)	Power to control domestic and foreign conditions	Self-determination, autonomy, well-being, prosperity	Military and non-military
24.	Moran (1990/91)	Cold War fixation	Soviet Union, international relations, globalisation, energy, economics, narcotics	Military and non-military
25.	Lippman (1993)	National military capability	Military to protect other interests	Military security
26.	NDC seminar (India) (1996)	Multi-dimensional	Politics, environment, economics, defence, culture, technology, resources, military	Military and non-military
27.	Chinoy, Anuradha (2000)	State security	Maintaining political and other structures with military might	Military security
28.	Saighal (2000)	Overstretched. Need to redefine	Military, economics, global power support, strong UN institutions, unidentified factors	Military and non-military security
29.	Saighal (2000)	Insecurity model	Economic vulnerability, reduced military might, political unrest, social unrest	Chaotic situation edging towards disorder
30.	Kargil report (2001)	Military security	Military security against intelligence	Military security
31.	Report of the Group of Ministers, India (2001)	Military security	Border security, intelligence, unified command concept	Military security combined with non-military

(Contd)

Table 3.1 Contd

	Origin	Definition Dilemma	Constituent Elements	Elements Identified for Examination
32.	Paleri ⁵⁰ (author) (2002)	Apparent well-being of the people of a nation measurable through National Security Index (NSI)	15 identified elements	Military security through intelligent military might and non-military security. NSI needs to be researched

To appreciate the concept of national security with a feel, one could empathise with oneself under countless situations that will pose the reality of existential dread:

- A war victim, displaced for life as a refugee
- A young soldier with a leg amputated
- A person strayed across the border and incarcerated without reprieve
- Hungry with no meal guaranteed
- Under dismal poverty with a family
- Sick without health facilities
- A hostage in an airplane in an unknown place
- A victim of earthquake lying under rubbles in darkness at noon
- A live victim of a terror attack
- A hapless father finding the daughter mauled on racist bias
- A father with an unemployed son hooked on drugs
- An employee laid off from work place
- Terminally ill

Why all these? Just a power failure in a cold winter night is sufficient for people to feel insecure and blame the government and declare the country a failed state. See the panic and desperation among people at the airport terminal when a flight is cancelled. The security perception collapses suddenly and momentarily, all hopes drain off as can be seen in a single and simple bio-model of such nature. National security is not an issue meant for discussion in soirees and casual or informal gatherings. It is a serious subject that needs to be discussed with a feel. Ever tried to fight a fire from within a building without escape routes?

Notes

¹ “Agencies, Pull Up Your Socks: PM Tells the Army,” *Sunday Mid-Day*, Mumbai, 17 March 2001, p. 1.

² Bill Clinton, during his second election campaign for the office of the president of the United States. Also title of Chapter 18 of the Book *The Next World War* authored by James Adams, Arrow, London, 1999, p. 307.

³ “Indian Navy, A Primer on Information Warfare (Unclassified),” Naval Publication 6001.1, Naval Headquarters, New Delhi, 1999, p. 20.

⁴ Joseph J. Romm, *Defining National Security—Non-military Aspects*, Council of Foreign Relations Press, New York, 1993, p. 2. See Chapter 2.

⁵ Prabhakaran Paleri, “The Concept of National Security and a Maritime Model for India,” *Doctoral dissertation*, Department of Defence and Strategic Studies, University of Madras, Chennai, 2002.

⁶ Vinod Saighal, *Restructuring South Asian Security*, Manas Publications, New Delhi, 2000, p. 36.

⁷ Ibid.

⁸ Ibid. p. 37.

⁹ Ibid. pp. 37–39.

¹⁰ IDSA Journal, back cover and IDSA website www.idsa-india.org, 2000.

¹¹ Romm, n. 4., p. 3.

¹² Ibid.

¹³ Ibid. p. 4.

¹⁴ Ibid. p. 5.

¹⁵ Ibid.

¹⁶ Ibid.

¹⁷ Ibid.

¹⁸ Ibid.

¹⁹ Ibid.

²⁰ Ibid. pp. 5–6.

²¹ Ibid. p. 6.

²² Vinod Saighal, “Remoulding the Subcontinent,” Part II, *United Service Institute of India Journal*, New Delhi, October–December, 1999, pp. 526–534.

²³ National Defence College, Proceedings of Seminar on “A Maritime Strategy for India”, New Delhi, 1996, p. 22.

²⁴ “Reforming the National Security System,” Recommendations of the Group of Ministers, New Delhi, February 2001 (Unclassified).

²⁵ Ibid. p. 6.

²⁶ Ibid.

²⁷ *Encyclopaedia Britannica, Ultimate Reference Suite* CD-ROM, 2004. It was also the same year in which the Central Intelligence Agency (CIA) was created.

²⁸ Romm, n. 4, p. 6.

²⁹ Anuradha M. Chenoy, “Peace Process: Towards a Gendered Human Security,” *The Times of India*, Mumbai, 20 December 2000, p. 10.

³⁰ Ibid.

³¹ Ibid.

³² National Defence College, n. 23, p. i.

³³ R. Gopalaswamy, et al., “A Strategic Framework for National Security” in P.N. Chaudhary and W. Selvamurthy (ed.), *Battle Scene in Year 2020*, Defence Institute of Psychological Research, New Delhi, p. 16.

³⁴ The Kargil Committee Report in its unclassified form was published in paperback under the title: *From Surprise to Reckoning* by Sage Publications, New Delhi, in 1999. The terms of reference of the Committee was to review the events that lead to the Pakistani aggression at Kargil, India and to recommend measures to safeguard national security against such armed intrusions. p. 25.

³⁵ Romm, n. 4, pp. 6–7.

³⁶ Ibid.

³⁷ Ibid. p. 7, Lester Brown mentioned it in his paper “*Redefining National Security*.”

³⁸ Ibid.

³⁹ Ibid.

⁴⁰ Jaswant Singh, *Defending India*, Macmillan India, Bangalore, 1999, p. xxi.

⁴¹ Romm, n. 4, p. 7.

⁴² Jaswant Singh, n. 40, p. xxi.

⁴³ Paleri, n.5, pp. 60–61.

⁴⁴ Ibid. pp. 66–67.

⁴⁵ The United States’ campaign of war on terror commenced soon after the extremists hit the country on 11 September 2001 much to the shock and dismay of the majority of the world population.

⁴⁶ Saroj Nagi and Nandini R. Iyer, “Power behind Throne?” *Hindustan Times*, New Delhi, 6 November 2004, p. 1.

⁴⁷ “What Else did They Say?” *Hindustan Times*, New Delhi, 6 November 2004, p. 1.

⁴⁸ Vishal Thapar and Nandini R. Iyer, “Kargil A Misadventure: Imran,” *Hindustan Times*, New Delhi, 6 November 2004, p. 18.

⁴⁹ Pramit Pal Choudhury, “Unite and Rule, Kumaratunga Outlines Six-point Plan for S. Asian Growth,” *Hindustan Times*, New Delhi, November 6, 2004, p. 18.

⁵⁰ Paleri, n. 5.

4

Elements of National Security

The centre of gravity of national security lies in the configuration of its elements at any given time.

An element is the fundamental part of a concept. A concept may comprise one or more elements. National security is one such concept. It is multi-elemental. Elements are threat attractors. Threats derive from various factors. A threat to the elements cannot be observed easily since it is symptomatic. The symptoms are those that lead the attention of a strategist towards the concerned elements of national security indicating flaws in its governance and management. Therefore, the capability for proper diagnostics is vital in identifying and analysing elements of national security.

IDENTIFYING ELEMENTS

Elements of national security are identified from chosen parameters by examining their fundamental nature and characteristics in support to the vitality of national security governance. In the previous chapter, a reference has been made about the elements of national security and their interactive geometry. It is in this interactivity that the configuration of the element chain is involved. The definition and references to national security mentions a host of parameters that govern or influence it. There are many, and more are evolving. The elements have certain properties and periodicity. Unlike the periodic table of chemical elements, the conceptual elements of a sociological model normally have an informal hierarchy with identifiable characteristics. The elements develop and may even vanish as an independent entity by integration or disintegration on a larger time scale. Periodicity is a constant property of elements. Hierarchy of the elements can be determined by the period in which they were identified or with respect to their interactive superiority in a matrix. The choice can vary. The art of distinguishing various elements of national security is based on their contribution towards national security singularly and jointly by interaction. In a serious research, the author has identified 15 elements as the fundamental constituents of national security.¹ The properties of these elements reflect the properties of the period of their origin. The elements develop over a period and enhanced the concept as and when attempts to define

it progressed through the period of its evolution. More elements may be added to the list and some of them, though uncertain at this stage, may even be removed by redundancy or transformation. Though the elements are highly cohesive and closely binding with each other, they may be viewed from military and non-military angles under certain situations. The reason is that the violent nature of human beings as a survival instinct will not easily get out of the way for more serious issues to be acted upon. The transformation of human psyche from war to a no-war situational acceptance will be exasperatingly slow. It can be seen even in a common person who may criticise the country for not being able to react in a tit-for-tat situation. Warmongers win elections more conveniently than others, in many cases. For a nation that is always threatened with territorial aggressiveness, non-military security takes secondary status. Often, for a nation that does not encounter territorial violations, non-military security is of utmost importance. For academic interest, the elements therefore, can be classified under military and non-military security notwithstanding their close interconnectivity and mutual inclusiveness. The usage of the term non-military security is strictly in the academic interest. It is not objectively correct. It is also not the intention of the author to introduce military security as the most important of all the elements. The hierarchy of elements is with respect to situation parameters since they cannot be expressed in relative importance.

CHARACTERISTICS OF ELEMENTS

While identifying the elements of national security, all factors that are commonly linked with the concept and satisfy specific characteristics were considered:

- (a) *Directly influence human life*—as a system entity within its own boundaries
- (b) *Fundamental whole of the concept*—definable and appreciable within a system boundary
- (c) *Independent threat attractor*—continuously under threat at least in one of the eight forms of the threat matrix cube (explained in Chapter 5)
- (d) *Periodic in origin*—appeared in different periods of time in the evolution of the concept
- (e) *Continuous and uninterrupted since origin*—the element should be ongoing; an element interrupted in between will be a new element when it re-enters the chain
- (f) *Independent variable with a profile*—so that the indicators of the element can be ranged on a minimum-maximum scale
- (g) *Interactive with other elements*—mutually interactive and well interfaced with each other for effective integration in the national security matrix
- (h) *In vogue in its usage in national security*—should be known and easily comprehensible to the people, not just a select few

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- (i) *Macro level social impact*—national security is viewed at macro level and therefore, the element should be acceptable at the same level
- (j) *Terrain specific*—the element should be identifiable with one or more terrains (terrain specificity is explained in Chapter 6)
- (k) *Can maximise national security*—governance friendly with the capability to maximise national security
- (l) *Universal in character*—national security being a universal concept its elements should have the same appeal

An element has to be an integral part of national security tested for the appreciated characteristics. The effect within an element directly impacts national security, whereas, a condition or a threat impacts an element. There are many situational factors widely in use in assessing national security that can be misrepresented as the elements. Considerable effort and money goes into managing them as elements by wrong diagnostics.

ELEMENTS OF NATIONAL SECURITY

The elements of national security that are identified under the definable characteristics are:

1. Military security
2. Economic security
3. Resource security
4. Border security
5. Demographic security
6. Disaster security
7. Energy security
8. Geostrategic security
9. Informational security
10. Food security
11. Health security
12. Ethnic security
13. Environmental security
14. Cyber security
15. Genomic security

The order of the elements is not from the date of the Westphalian² nationalism, but from the earliest days of human life. They are explained briefly in this chapter and amplified in exclusive chapters subsequently.

Military Security

National security is perceived to be the protection of a nation against alien invaders. In spite of the fact that the experience of war is dreadful humans need military

security for physical protection. It is the oldest element of national security. The first ever war in human history dates back to prehistoric periods. Though other elements have been identified, military security remained the key element because it carried with it the power to influence the fear embedded in human psyche. The element will lose its importance only if humans understand the limitations of war. It is not easy since it is a conditioned instinct for survival carried over the years in the human psyche.

Economic Security

Economic security is a nation's economic strength. Nations invaded others in the past in order to boost their income by plundering or domination. It is necessary to see economic security in relation to military security on the one hand, and to the international rating of a nation in its economic capabilities on the other. An economically weak nation cannot protect its territories and interests militarily. In such cases, it feels feeble and threatened. The threat perception forces it to incur expenditure on the military and this further reduces economic standards, continuing the cycle in an ideal situation (Figure 4.1).

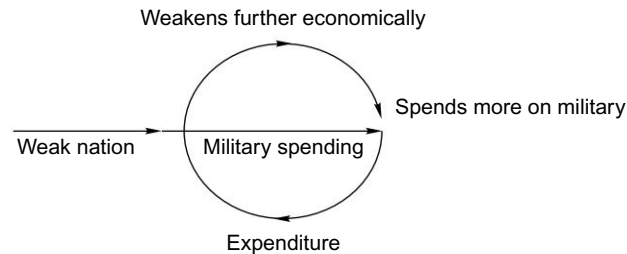


FIGURE 4.1 The Military Security—Economic Security Interactivity Diagram

In a hypothetical situation, an economically weak nation is considered to be vulnerable to external pressures and therefore, embarks on upgrading its military security status (creating military and other armed forces and continuously upgrading them). In this effort, its economic security declines slowly. The cycle continues since its feeling of being weaker makes it spend more on the military. This leads to a hypothesis: *in the diminishing correlation between economic security and military security, there is an optimum point that could be termed as economic defence spending (EDS) which is the optimum balanced spending for military security for a particular nation, variable in time.* The diminishing correlation becomes a law in defence spending. Economically weaker nations tend to spend more than they can afford assuming their fear factor and compulsions are high and they therefore, increase the spending rate. The point of EDS has to be identified through calculations for each nation-state—the stronger nations not excluded. The hypothesis assumes that war and conflicts are acceptable realities and therefore, military security has a counter effect on economic security. The optimum

expenditure for maintaining military security is the point at which economic security is balanced—the point at which spending stops. It is a variable, since economic standards of nations can vary. This calculation is not attempted in this book and is open for research. But military spending is not on defence alone. There are nations that spend heavily on dubious offensive objectives as a matter of policy. There are also wars that are economically profitable for a nation. It is often restricted to the powerful and the superpower. Offensive activities include limited wars, pre-emptive strikes, surgical strikes, state sponsored proxy wars, insurgency supports, etc. In such cases the economics takes a different turn, with money accounted from some other sources—secret spending, secret borrowings, money laundering, drug sales, arms trafficking, hidden oil futures, etc. Such money is used to encourage terrorism, insurgency, sleaze deals and more, that sometimes come to light in the public domain much to the embarrassment of governments. Economic security as a concept has not been valued much in the past; instead it was focused through various ideologies. The theories of political philosophy—liberalism, communitarianism, capitalism, communism and socialism³ were all based on economics. Economically weaker nations counted on military security either directly or by submitting to protectionism, which is a continuing trend.

Resource Security

Wars have been fought over resources since ancient times. In the prehistoric days, war used to take place over fire, a rare resource among human groups. Scarcity of resources led to colonisation of resource-rich countries by the strong and adventurous. Strategic control of resource-rich, but poorer nations has been an ongoing agenda for the dominant. Such resource colonisation is prevalent in the world today and is expected to continue in spite of global reforms and awareness. Scarcity can result in conflicts leading to nations assuming rival positions and creating environmental refugees. Water is a major cause for the Arab–Israeli conflicts. Nearly half of Israel’s water installations are located in areas that were not part of it prior to 1967.⁴ The scarcity of water causes rivalry between countries in the neighbourhood. The hidden issue in the Indo–Pak conflict over Kashmir is water. Interestingly, the word “rival” derives from Latin, meaning “one who uses a stream in common with another.” According to a UN estimate there are about 300 potential conflicts over river borders and drawing water from shared lakes and aquifers all over the world.⁵ The potential conflicts are not only between nation-states, but also within them.

Border Security

Borders originate from the territorial instincts of the animal kingdom as signposts, which indicate that territorial sovereignty is non-negotiable. In the case of a nation, the border is its geopolitical boundary that is recognised internationally. Protecting these borders, especially from cross border human movement is a serious concern.

Nations are actively engaged in defending their borders in every possible way to uphold their sovereignty and values. Human history is full of legends of people crossing the borders into alien territories either to invade directly or surreptitiously, or in search of opportunities. It continues even today. The nature of the border, whether mountainous, icy, oceanic, sandy or never-ending expanse of plain nothings, failed to deter the determined. Nations have to protect their borders against such odds. Protecting them with its associated disputes and all, at the outer perimeter or within the state at the entry points is essential for national security. This requirement endorses border security, as an element of national security from the beginning of nation-states.

Demographic Security

Unplanned and imbalanced population growth can affect the overall well-being. It is interlinked with environmental and resource security. But demographic security is not related only to population growth concerns. It also deals with human immigration, trafficking and similar socio-economic issues. A constant flow of world population over the ground can upset the stability of nations and their economy. Among the socio-economic issues of unplanned demographic shift, human trafficking is considered alarmingly nefarious. It is estimated to be the third largest transnational crime after drugs and arms with a stake of US\$ 7 billion (2001).⁶ The merchandise of this business is mostly women and children from marginal communities looking for viable employment and means of survival. The state has a responsibility here.

Disaster Security

While in the beginning there were only natural disasters, humans have grown sufficiently competent to induce “designer” disasters or accelerate natural disasters directly or indirectly. Disasters induce deep trauma and anguish. The agony would be reduced if disasters are prevented or the damages after a disaster are mitigated. It is a daunting task. The difference between natural and human induced disasters is marginal. There is no official definition for a disaster. But it is easily understood and often classified in accordance with their nature. No part of the world is free from disasters of some sort. The collateral damages of disasters can be equally serious and cascade into the social system. Economic growth, health, development and resource will be the victims. Disasters, like environmental issues, can also cross borders. The impact may even affect the geostrategic environment and change the maps of nations. The loss due to a disaster is socio-economic and generally irreversible. According to a study, two billion people were affected in the last decade by disasters globally and 90 per cent of them were Asians.⁷

Energy Security

Energy security objectives find a prominent place in the strategic map of a nation concerned about national security perspectives for growth and development. The

importance of energy security can also be seen from the problems faced by many nations during wars and the subsequent turn of events in the absence of a regular supply of fuel. Today, energy is synonymous with oil although there are other prospective energy resources. The energy policy of a government has strong military emphasis as well. Energy consumption through oil causes emissions of carbon dioxide that is responsible for ozone depletion and global warming greenhouse effects. Those who are concerned look at various sources of energy including nuclear power. Security for energy production is another concern. Environment friendly power sources will be more attractive in the future.

Geostrategic Security

Geostrategic security is about the bargaining power and goodwill a nation enjoys in the community of nations. It could also be seen as a situation when it has to muscle its way through international aggrandisement to retain its position of power without breaking the rules of international law. From early times, invaders and colonial empires lacked this security and the result is seen in their state of affairs today. Geostrategic security can be misconstrued as military security. The problem in geostrategy is also that of the image: regional bully, ugly American, Red China, Taliban Afghanistan, militant Islamist, rogue states, tar babies of Africa, etc. All are cases in point. Geostrategic security is depleted under these pseudonyms and nations will have to substitute it with other ingredients of security elements. Image building is not an easy exercise in a geostrategic context. It is also not part of power projection. A carefully cultivated image helps in geostrategy. Geostrategic security, though strictly not interrelated with goodwill, cannot attribute to strengthening international relations only on the basis of power. Goodwill laced with power is the right ingredient in the knowledge empowered and emotionally charged world. Power also flows through goodwill. It is the combination of power diplomacy and communication in a timely and sagacious form that will ensure geostrategic security.

Informational Security

Whether informational security is a separate element of national security or not can be a leading question. It can be answered if the term intelligence is analysed. Espionage and intelligence gathering were accepted norms according to Sun Tzu, Kautilya and other strategists, as strong points of nations. The argument whether intelligence is intention, information, or both, can be answered if we consider informational security as an element of national security. Information that affects national security including intentions, can be seen here as intelligence. Information that affects sovereignty, integrity, elements of national security, scientific or economic interests, conduct of international relations, etc. may require to be reserved and secured. Opposite to this are citizen's rights for disclosure of information. These rights may strike a discord with national security objectives, if not balanced properly. This is more so in a democratic scenario with a high profile

free media. Human rights laws may call for a certain amount of liberalisation that is only natural justice. The government has to have a say in information security in a balanced manner and appropriate to national interests. These are to be cleared and clarified through enactments on freedom of information. Another issue is the growing gap between the information rich and the information poor. Information rich are the people with easy access to information. Information poor are those with less access to information. This difference can effect social inequalities and cause negative consequences, and is therefore, a matter of importance in the overall strategy for informational security. Information equity is important. Another disturbing aspect of informational security is information trafficking—a serious matter that deals with free travel of information, which can cause damage to the vital interests of a nation or its people. Containment of information trafficking is as crucial as controlling other criminal traffic.

Food Security

Access to food for all, is a requirement for healthy life. Food security as an element of national security evolves from this basic need. The Food and Agricultural Organisation (FAO)⁸ is emphatic about it. Poverty among populations causes food insecurity. Under the FAO's findings, sustainable progress in poverty eradication is critical in order to improve access to food. A large number of people around the world are short of nutritional food in their daily lives. Access to food is the solution that could be improved by various means. Food security, aimed at nourishment of the population, is a vital planning objective for any government. Food is required not only to arrest starvation, but also to provide nutrition.

Health Security

It is generally accepted the world over, that little is being done in the approach of public health through policy debates. Such voices indicate the importance of public health in the well-being of people and point out that the greatest need of the day is to eliminate disease. All spheres of life impinge upon health and therefore, inter-sectoral planning for health is necessary. The parameters include air and water quality, control of child and old age mortality rate, and the worsening of health and social indices of the conglomerations.⁹ While governments are making efforts, the utility of such measures will depend upon public satisfaction. In Europe, public health arose as a special area of activity in the mid-19th century. In industrialised cities, health consciousness arose with the realisation that the health of one particular section of society was closely bound to that of the other, and that of each section was determined by its conditions of life. Improving the abysmal living and working conditions of the poor was undertaken, realising that these lead to rampant malnutrition and communicable diseases and also pose a threat to the health of the better-off through epidemics and social delinquency. In independent India, the Bhor Committee Report in 1946 set up the tone for health services

development. It insisted that the tiller of the soil should be at the centre of planning, and health care should be available to all irrespective of their ability to pay. In the last decade, highlighting of women's health and moves for gender sensitisation of public health has another democratising thrust. Public health also provided rationales for the Nazi acts of genocide (as eugenics) and barbaric experimentation on human subjects (as scientific knowledge helps humanity). Public health concerns seemingly motivated the extreme act of forced sterilisation during the internal emergency in India in 1975–77. Public health experience has also shown that simplistic single-pronged technology driven programmes have never fulfilled their promise.¹⁰

Ethnic Security

The term ethnic, for the purpose of this book, is taken as all matters of disparity that could be identified among people and usually used in comparison, often in relative terms of superiority—national, communal, cultural, racist, religious, tribal, caste, gender, origin, age, colour, sex, etc.¹¹ It is from ethnicity that issues, which threaten the integrity of a nation-state or the secular character of a democracy or a human system, originate. According to the Genocide Convention and in general lexicography, ethnic groups are considered separate from three other identified groups—national, racial and religious.¹² As an element of national security, the expression covers all differences under which humans are classified or perceived. The ground for ethnic breeding sets in when there is an identified difference between one and another. At the threshold of the 21st century, the contemporary world is witnessing ethnic campaigns of different kinds. These conflicts have been attributed to a lack of statesmanship and governance, paucity of reasonable leadership among various ethnic sections of society and the persistence of inappropriate military bureaucracy. It is a cruel predicament for the world. The end of the road in an ethnic conflict is the break-up of the nation-state. Little attention was paid to ethnic issues and conflicts during the Cold War. The developing world was misguided and ethnic issues have now overtaken in a stunning fashion. Ethno-nationalism, fundamentalism, militant secessionism, militarism, territorial disputes, national chauvinism, economic deprivation and gender-biased insecurity are all factors that affect ethnic security. There are millions of victims of such conflicts all over the world.¹³ The result of xenophobic nationalism that breaks into ethnic security is militarism and suppression. Ethnic security is when there is no marginalisation within the human species.

Environmental Security

There is much talk about environmental degradation issues like deforestation, acid rain, depletion of the protective ozone layer and global warming among others. Romm¹⁴ has divided environmental security in two categories: (1) transnational

environmental problems that threaten a nation's security, and (2) transnational environmental or resource problems that threaten a nation's security. In the first case, the problems can broadly be identified as issues like global warming that can affect the quality of life for the inhabitants of a state. In the second case, the issues are those that affect the territorial integrity or political stability of a nation such as disputes over scarce water problems in the Middle East or the question of what to do with refugees fleeing a degraded environment.¹⁵ In this book, resource security is examined separately as an element of national security. The environment can be damaged by war and military preparations. Economic security is also a catalyst for colossal damage to the environment. The concern for the environment, therefore, focuses on both military as well as economic security. The Environmental Modification Convention of 1977 forbids hostile use of environmental modification techniques having widespread, long-lasting or severe effects as the means of destruction, damage or injury to any other state party. Environmental modification means deliberate manipulation of natural processes over the composition of the planet and its sub-systems—the dynamics, composition or structure of the earth, including its biota, lithosphere, hydrosphere and atmosphere; or of outer space. Today, global climate change is considered to be one of the major issues related to environmental security. This is largely due to the alarm caused by the discovery of a hole over Antarctica in the ozone layer in 1985. Chlorofluorocarbons are considered to be the principal cause of ozone depletion. Secondly, the seven hottest years of the century all occurred in the 1980s (and the ten hottest have all occurred since 1973). Public awareness of climate change became particularly acute in 1988, a year of heat waves, fires, floods, drought and super hurricanes. The greenhouse effect was said to be responsible for this warming trend. There are no studies relating global warming to war and military preparations so far. There are also nations and governments who disagree with the findings on global warming.

Cyber Security

A few strokes on the computer keyboard can unleash panic and devastation in the cyber world that virtually controls the information matrix, most of which are vital for national security. The panic buttons can upgrade to cyber terrorism or take possession of information warfare. The cyber world has the potential to be fatal. According to the computer wizard Barry Collin, today's terrorists may look primitive when compared to the cyber terrorists of tomorrow.¹⁶ For the same reason, it is considered an evolving element of national security that needs to be studied carefully as a separate entity. According to the US Central Intelligence Agency (CIA), computer-generated terrorism is the "ultimate precision guided weapon" and this capability already exists with a number of terrorist organisations.¹⁷ Experts say that computer-generated attacks are much easier to carry out than other terrorist activities. It is also true that in the long run, cyber insecurity can jeopardise other

elements of national security. Already military security and economic security are within its reach.

Genomic Security

Ever since the world witnessed the secret of life unfolding in front of their eyes with the double helix, the twisted ladder and deoxyribonucleic acid (DNA), human life could not be expected to remain the same.¹⁸ It happened in 1953. Today, the world is quite advanced compared to the initial days. It is with this concern that the new and latest element of genomic security is added to the national security concept. It is also a fast unfolding terrain. The subject of genetic research is currently in the ethical mould. It deals with advancement in biological sciences related to biogenetics, informatics and genomic research. The world does not seem to be in a hurry to estimate its security aspects. But it is only a forewarning at this stage, that a silent revolution like genome research also has to have its darker elements that can strangle humankind in its appropriate revival. It has opened up all sorts of possibilities. Biotechnology is an instrument of development that can improve the quality and quantity of plants and animals quickly and effectively. In reverse, these alterations can cause havoc among forces that balance nature. For example, killer algae created with bio-modifications can wipe out fish sources at sea, by asphyxiation. Genomically created transgenic weeds can obliterate food stock. The scientific community has reason to worry about super weeds and super viruses. There are protests on ethical and ecological grounds. The safety, effectiveness and necessity of biologically modified food are also questioned.¹⁹

FACTORS CONSIDERED BUT NOT ACCEPTED AS ELEMENTS

There are factors often misinterpreted as elements of national security and treated with special attention in governance, that do not meet the requisite characteristics. Such treatment will be symptomatic rather than diagnostic in national security. Some such factors are:

- Governmental system
- Political stability
- Drug trafficking
- Arms trafficking
- Social security
- Violence
- Weapons of mass destruction
- Literacy and education
- Spirituality
- Terrorism
- Homeland security; internal security
- Judicial security
- Others

Governmental System

As an element, governmental system is not found relevant in national security. Various forms of government exist in the world. Historically, security has been a cause of concern for all types of governments. Whatever may be the form of government, good governance is a favourable condition rather than an element. Governance is the process of providing national security and not an element of it. There is no specific governmental system that can be identified as the most superior form in the national security chain that comprises the links: nation-state-government-governance-people. The much-hyped system of democracy is just another form of governance. Though democracy is hailed for human right observance and other humanitarian considerations, this is far from the truth. It is also interesting to note that there are democracies that support other forms of governance rather than another democracy. Some of the countries that democratic nations have in their bandwagon are highly undemocratic in geostrategic transactions. All these reduce the values of democracy. The UN itself, as a world body, admits members from various governmental systems. Not all of them are democratic. A united nations of democratic countries was never envisaged. But there are signs that democracy is the next stop for all other governmental systems.

Political Stability

A stable government is a good idea for national security governance. Political stability balances unrest and promotes positive decisions. At the same time, it is important to understand that checks and balances in a political system should not be misconstrued as political instability. In every way, political stability is more a state of affairs and thereby, a condition not an element. It helps governance.

Drug Trafficking

Drugs are projected as frighteningly serious substances. Since the 1980s, the “war on drugs” is a great obsession with the United States²⁰ (as is the “war on terror”, since 2001). “Why not earlier?” is a question. Drugs were there in the world before humans decided they were bad. The fact is that drugs are used to make medicines. Today they are considered illegal—well, not exactly. They are regulated. Governments know that drugs can fetch good money, which can be used to buy weapons that may be used by those who are not supposed to use them. Within these perceptions, there were debates whether it is a national security issue. Attempts were made to solve it by military means in some parts of the world. If it is a national security issue, it does not qualify to be an independent element. It is more a threat to national security because primarily, the money laundered by drugs can be used for arms trafficking and militant outfits involved in the business of terror and other criminal activities. In 1986, Ronald Reagan (1911–2004), the president of the United States signed a secret directive “that identified the illegal traffic as a national security threat and authorised the department of defence to engage in

numerous anti-drug operations.”²¹ But in spite of the war on drugs all over the world, drug production is increasing. Afghanistan has become the major drug producing country (2004) surpassing Colombia where the US military is actively engaged in containing the flow of drugs (2004).²² This is after the Taliban regime has been (temporarily?) eliminated under the “war on terror.” Drug trafficking poses a threat to governance. It is not a threat attractor; hence not an element.

Arms Trafficking

Arms trafficking is a threat similar to drug trafficking and closely related to it. A threat is different from an element. Arms and drugs are shadow buddies in the dark alleys of the new world.

Social Security

Social security is the support to the common person morally, economically and socially to tide over economic difficulties, direct or indirect. It is taken care of by welfare measures, subsidies, judicial support, etc. It can be in the form of concessions to a certain class of people, including concessions under a Constitution to weaker section of the society.²³ It is related to national security by ethically and socially justifiable welfare measures.

Violence

Violence has reasons. Often the reasons vary. It is one of the easiest aspects that can be understood as a symptom, not an element of national security. Violence is an effect supported by an identifiable cause. Violence is also a social balancer. It vents emotions. It is mentioned that suicide rates are low in violence prone areas of the world. Of course the correlations are not seriously studied.

Weapons of Mass Destruction (WMD)

“Weapons of mass destruction” is a word of convenience coined to depict primarily nuclear, biological and chemical weapons. There are more in the making; for example, the efforts being made to develop psychotronic weapons that can control the human mind. They are causes of concern for countries that face asymmetrical threats. They are linked with national security through its elements. In spite of their capabilities for mass annihilation, they do not qualify to be elements of national security. They are just weapons and therefore, should be treated as such and controlled appropriately within the threat attractors. As threats, they have to be prevented from reaching the targets.

Literacy and Education

It is a condition that supports ethnic security, informational security and other elements related to knowledge base in the national security regime. Education is

not just clearing illiteracy; it is a condition for creating a knowledge society. Literacy is the base for education. Literacy and education are conditional factors and not elements of national security.

Spirituality

Spirituality means all that which is concerned with the goodness and well-being of spirit—an abstract concept interrelated with an equally abstract soul that is expected to reside in a human with a live body and mind. Basically, it is playing with the mental terrain. Spirituality is primarily involved with religious and cultural rites and ceremonies and all activities that are concerned with pleasing the spirit; the perceived animating force. In this book a new term, spiritual security has been introduced. It is an entirely different concept, but has certain ingredients of spirituality as perceived today, included in it. In fact, religion, god and other aspects of spirituality are part of it. Spiritual security as already mentioned, is the filler that balances the human system in the mirage of perceived security. It is a way of comfort. It is more a concept than a condition, that too beyond the elements of national security. It is a security wadding that humans identified in the course of their existence. Spiritual security comprises all factors that contribute to such a fulfilment. Spiritual security is a factor for intelligent retention in human systems since, as seen earlier, national security is a target that can only be approached to a certain level and a lot has to do with spiritual security that will fill the void to balance human life.

Terrorism

The worldview on terrorism varies. “One man’s terrorist is another man’s freedom fighter”, was the definition of convenience for a very long time. Many groups engage in terrorist activities and many nations support and nurture them by providing sanctuaries and other means. They are used in ideological violence and territorial conquests. The United States got it where it really hurts and that too in front of the world that it dominates, in broad daylight on 11 September 2001. The shock and dismay made it declare the terror attack an act of war against its sovereignty. It was an irony that it took them so long to admit the fact that terrorism was actually an act of (undeclared) war. Terrorism brings unending misery to the people and is therefore, a threat to global peace and security. It is a stealthy and violent attack on human lives. It is a cost-effective attack by the enemy and therefore, a tactical form of asymmetrical warfare. Terrorism gives the enemy the necessary tactical advantage and capability to override the asymmetry. It is tactics that are fine-tuned to the attacker’s convenience. The solution here is to identify the enemy and hit at its centre of gravity. Terrorism is linked with military, economic, demographic and ethnic security elements of national security. One of the ways of handling terrorism is through military might, by bringing it under the laws of war.²⁴ Worse, it has been there from time immemorial; hence, according to the simple bio-model it

will be there forever, assimilated with the human system. What next? A lot! At least for now, terrorism is a threat not an element.

Homeland Security; Internal Security

Homeland security is an American expression that originated post-11 September 2001 terrorist attacks in the United States. It is a term of convenience and covers military and border security. Its origin is fear-drenched politics. It deals with the protection of its geo-property along with its assets, including lives. The concept of homeland security is a style of governance as part of military and border security. It is not an element for the purpose of overall national security management. The expression has not yet gained universal appeal and could even undergo a shift in the United States itself in course of time, with the change of governments. In some other parts of the world, the term “internal security” through roughly to the expression. These concepts deal with threat management in national security governance.

Judicial Security

The absence of quick legal recourse for the common people is a concern for most of the nations. This is in countries where the rule of law prevails. It is an administrative problem. The common person wants speedy justice. The shock and trauma only increases when the procedures are long and cumbersome. The people may stop believing in the system when they stumble upon delayed procedures. In India, the Supreme Court had commented on the delay in meting out judgments and stated as a stark reality, that judges forget that there were cases pending verdict for a long time.²⁵ The judiciary is one of the pillars of national security. It has to be ingrained in the system. It is not an element of national security per se.

Others

There are many other symptoms, threats, conditions, procedures, effects of governance, etc. in a human system that are often misconstrued as elements of national security—violence, child marriage, suicide, dowry, human sacrifice, illiteracy, superstition, social backwardness, poverty, etc. Symptoms of social decadence, apathy or subversion can only be seen as symptoms of elemental problems and not as elements of national security. They will be there because human psyche makes evolution a complex process as explained in the law of invariance earlier. Changes in such systems have to be invisibly slow under the law of invariance. The good news is that such changes can be brought in by maximising national security.

‘ELEMENTS’ ON THE HORIZON?

Anything that is visible on a far distant horizon needs a second look, often rubbing the eyes, or more than that. But, certainly without a patch. *“Is it a bird, plane ...?”*

No it is...” syndrome often plays truant with human perception and related findings. There could be new elements of national security over the horizon waiting to make their appearance as life moves on. Testing and identifying them is more important than prediction. One such idea that could break the line in the near future for an element could be ‘Intellectual Security.’ But, its inclusion in the table of elements has to be seen with caution. It has to be examined against the qualifying conditions (characteristics) of an element of national security as it emerges. The concept of ‘Intellectual Security’ is far beyond the idea of intellectual property and the rights associated with it. It means effective utilisation of the intellect of the people to maximise the benefits (positive maximisation) to the society. The argument ‘population is strength’ has a take off on intellectual security. However, the concept needs further examination before it is introduced in the hierarchy of elements of national security. A hypothesis need to be built up around the concept before testing it.

HIERARCHY AND INTERDEPENDENCY OF ELEMENTS

Formally, the elements do not follow a hierarchical system. At best they can be identified with respect to their period of entry. In this analysis, the element of military security qualifies for the first place, being a derivative of physical security and the oldest sense of security that humans envisaged. At the bottom of the hierarchy, based on the period, the latest addition and developing element of genomic security could be slipped in. Another way is based on their interactive preferences. It is a variable since interaction of elements will be based on situations. While considering the elements, it was stated that no element of national security was mutually exclusive. The elements should be based on one or more terrains. An element is always identified with its terrain(s) of operation. They should be transmutable with each other in such a way that an action in one reflects on the other. The reflection can be either negative or positive. The hierarchy therefore, could be based on one of the following criteria.

- (a) *The period of entry of the element in national security*—The element holds its position until totally petered out of the hierarchy. This is a fixed hierarchy and also universal.
- (b) *Interactive compatibility of elements*—Elements have interactive components within them. They are not mutually exclusive. This could be a benchmark for defining a hierarchical order. The more an element is interactive, the higher it will be in importance in the hierarchy. Here also, it is easy to identify military security as the oldest of the elements. That is the reason why the world is fixated on it when it thinks about national security—a reasonable mistake often made in national governance. In such hierarchy the elements may move between the planes when their importance in interactive matrix shifts positions. The profile of the hierarchy shifts with respect to the period it is in. It could also be

nation specific, because the importance of an element could vary for each nation at a given time.

Other aspects of hierarchy are not clear. What happens when an element becomes extinct by change of time? What happens to the interactive elements? It can be presumed that the interactive elements start weakening when the primary element becomes weak and slowly vanish. By that time, they may get totally detached. Looking at the current setup, it is not likely that any of the identified elements will weaken in the near future. On the contrary, their potency may even increase. There are also chances for more elements to join the matrix. A peculiar and emphatically determined character of the elements of national security is that they are not mutually exclusive. The interconnectedness of the elements is of special interest to analysts and strategists and often one may overlap the other, in importance as well as activity oriented security discussions. They have common characteristics as threat attractors and conflict inducers. The choice of a hierarchy is best left to the governments interested in managing national security. The hierarchy visualised in this book is in the fixed universal mode—according to the period of their entry into the matrix of national security. The hierarchy is identified as follows.

1. *Military Security* (the earliest known period)

Military security is considered the sole security issue from the very early days. Wars were fought from the time human groups interacted. The idea that one is not secure unless one kills the opponent still persists.

2. *Economic Security* (next in hierarchy—the early days)

In the olden days people exchanged relatively less important things for what was more important under mutual understanding. One could dispose of everything in those days of exchange (yes, almost everything...). It was a good time in the garden till the big apple bit the snake (or was it the worm?)—that was when the money came in. Thereafter one could buy, not exchange, what one wanted. Money is close to military security.

3. *Resource Security* (next in hierarchy—the early days)

Humans knew the importance of resources, very early. Adventurers and explorers went in search of them. More so, the importance was highlighted by the requirement of resources for war. Therefore, it is closely associated with military security and economic security.

4. *Border Security* (1648)

Importance of border security springs from the origin of nation-states subsequent to the Treaty of Westphalia in 1648—the European model. That was when defined borders started dividing nations. It is again close to military security historically.

5. *Demographic Security* (next in hierarchy—post-1648)

The idea of demographic security comes from the perception of a settled nation-state. Hence, it is placed below border security in hierarchy.

6. *Disaster Security* (next in hierarchy—post-1648)

Whereas disasters were experienced from the time humans began life on earth, the views were changed since the formation of stabilised nation-states; and hence, it is placed immediately below demographic security in hierarchy.

7. *Energy Security* (end 18th century)

The world was never the same since James Watt (1736–1819) released the genie of steam from the kettle. Since then humans became dependent on external energy beyond animal power. Watt's invention of the steam engine propped up the industrial world that set the change for human society from an agrarian and handicraft economy, to one dominated by industrial production. It began in England in the later part of the 18th century. Human dependence on external energy continues since then.

8. *Geostrategic Security* (1919)

The victorious allies established the League of Nations (1919) after the First World War to encourage international cooperation and avoid another total war. Though it failed, the origin of the concept of geostrategy is taken from that date. The UN followed it (1945) and there are calls for change. Boutros Boutros-Ghali who was the secretary general (1992–1996), mentioned it.²⁶ Geostrategic security flows from the concept of internationalism that is getting reinforced.

9. *Informational Security* (1927)

Dating the origin of informational security is not easy. It started figuring in strategic conversations in the days of war. World War II brought out the need for centralised information on military matters. The CIA was created in 1947 for gathering such information for the benefit of the president of the United States. The informational security mentioned in this book is not strictly on military security or intelligence matters, but all that which is related to the role of information in national security. It involves information management and sharing information with people who have the right to know in certain cases. It began with the advent of newspapers, but accelerated with the mass introduction of radio. The date is taken from when the British Broadcasting Corporation (BBC) was established (1927), though there were records of broadcasting earlier in a smaller way. The BBC played a major role in public information broadcasting. Information for the people, as a concept, developed fast since then.

10. *Food Security* (1945)

Food security is dated to the world food programme of the UN. The FAO, established by the UN in 1945, has the mandate of eliminating hunger from the world, increasing nutrition and improving agricultural productivity. Serious thought on food security originated from this regime.

11. *Health Security* (1948)

The UN established the World Health Organisation (WHO) in 1948 to consider matters related to improving the health of people by international cooperation. Since then, health security has been recognised as a serious issue of human well-being.

12. *Ethnic Security* (1949)

This book places ethnic security as a serious fallout of World War II genocide and subsequent activities that resulted in framing the Holocaust and Genocide Convention, 1948 adopted in 1949. Though it has followed the League of Nations' specific health concerns, it is dated on the formation of the WHO since when it gained momentum.

13. *Environmental Security* (1972)

Environmental security is dated to the formation of the United Nations' Environment Programme (UNEP) in 1972. The UNEP guides and coordinates environmental activities within the UN system. It is subsequent to the formation of the UNEP that awareness of the world towards the environment was focused as a transnational issue.

14. *Cyber Security* (1990)

The earliest known computer was the abacus (1,100 BC). The cyber world originated much later. Though computers are dated to 1943, cyber security as a serious subject can be taken from the beginning of the information technology boom in the last decade of the 20th century.

15. *Genomic Security* (2000)

Genomic security is associated with DNA, first discovered as a chemical in 1869, but identified in the role of the miracle helix of biology carrying genetic information much later. In 1953, James Watson and Francis Crick determined the structure of DNA. The subject has tremendous potential for human well-being. It is dated to the dawn of the new century.

All the elements of national security are interdependent. Interdependency is one of the essential characteristics of an element of national security. A change in one element induces a change in another resulting in an incremental or declining effect in the overall national security. This is an area that needs serious research.

CONCLUSION

This chapter defines national security. It is possible to index the national security of a nation at a given time accurately, by research. Careful analysis identifies 15 elements that are currently integral to national security. These elements are interactive with each other at varying degrees with respect to situation and under expert governance, are expected to contribute towards maximisation of national security. The chapter also points out many conditional factors that are often mistaken for elements of national security. They could be symptoms, threats,

conditions, procedures or modes of governance that are viewed by the public and government equally as elements. They are all related to national security. Though the elements may not form part of any hierarchical order, it is comfortable to place them in the order of the period of their origin. In spite of the presumed hierarchy, each element is equally important in modelling national security.

Notes

¹ Prabhakaran Paleri, "Concept of National Security and a Maritime Model for India," *Doctoral dissertation*, Department of Defence and Strategic Studies, University of Madras, Chennai, India, February 2002.

² There are opinions that nationalism is a European creation as a precursor to the concept of sovereign nation-states. According to them, European colonial empires transported the concept of nation-states to various parts of the world. Anti-colonial movements in various parts of the world embraced the "colonial" concept of nationalism to fight against them. This is an interesting viewpoint.

³ Robert Audi (ed.), *The Cambridge Dictionary of Philosophy*, Cambridge University Press, Cambridge, 1999, pp. 718–720. Political philosophy deals with the study of coercive institutions that range from family to nation-state to the United Nations. It sometimes uses force or threat of force to influence its members. This legitimacy is a question that has often been examined by political observers. Liberalism in coercive institutions is based on liberty to its members. In other words, it is a commitment to individualism. Opposite to this is communalism. Fascism is the extreme to which communalism can reach. Capitalism advocates that capable members of the society own the money production methods and reap the benefits of it. Opposite to this is communism where the community controls the production methods. Socialism is strictly, a contrast to liberalism and communitarianism and takes equality as the basic ideal. These philosophies are basically the underlying principles in which coercive societies have to work. But the concept of national security goes beyond all these and provides a universal acceptance rule to people to maximise their needs towards apparent security. Economic security is an element of national security and not a hidden entity of any of the socio-political philosophies practiced today.

⁴ "Now World Wars over Water?" *The Times of India*, Mumbai, 21 March 2001, p. 13.

⁵ Joseph J. Romm, *Defining National Security: The Non-military Aspects*, Council of Foreign Relations Press, New York, 1993, p. 21.

⁶ Advertisement in the *Times of India*, Mumbai, 23 April 2001, p. 18.

⁷ D.K. Datta, "Disaster Management," Proceedings of the World Conference on Disaster Management Infrastructure and Control Systems, Hyderabad, 10–12 November, 2003, p. 32.

⁸ The Food and Agricultural Organisation, a specialised agency of the United Nations established in 1945. Its objectives are aimed at alleviating food insecurity in the world, a matter that was found to be very serious at the time of the formation of the United Nations.

⁹ Ritu Priya, "The Two Faces of Public Health," *The Times of India*, Mumbai, 12 April 2001, p. 12.

¹⁰ Ibid.

¹¹ *Human Development Report 2000*, United Nations Development Programme, Oxford University Press, New Delhi, 2000, p. 1. According to the report, one of the seven

freedoms is “Freedom from Discrimination—by gender, race, ethnicity, national origin or religion.” In this book, the author chooses to confer discrimination by all means to one term: ethnicity, the underlying basis of ethnic security. Gender, race, origin, religion and all other forms of human differences are included in the term “ethnicity.”

¹² Adam Roberts and Richard Guelff (eds), *Documents on the Laws of War*, Clarendon Press, Oxford, 1989, p. 158. According to the Convention, genocide means certain definite acts mentioned therein, committed with an intent to destroy, in whole or in part, a national, ethnical, racial or religious group. Ethnic security as an element of national security means protecting these groups and employing them gainfully for the nation under the principles of equality as per the constitution. It is much broader in its sense.

¹³ Eric Beauchemin, “*Child Soldiers of Liberia*,” www.mw.nl, May 2001. According to reports, there are 300,000 child soldiers in 30 countries in the world (2001).

¹⁴ Romm, n. 5, p. 15.

¹⁵ Ibid.

¹⁶ “Nando.net and The Sacramento Bee, New Security Threats Rest in Cyber Terrorism,” *infowar.com*, February 1997.

¹⁷ Ibid.

¹⁸ The British born Francis Crick (1917–2004) and the American James Watson, discovered the DNA in its twisted ladder form as they first explained.

¹⁹ Insight, “Concept of Genetically Modified Food,” *The Navhind Times*, Goa, 24 August 2001, p. 10.

²⁰ Romm, n. 5, p. 9.

²¹ Ibid.

²² *PTI News Scan*, New Delhi, 27 October 2004.

²³ An example is Article 357 of the Constitution of India.

²⁴ Prabhakaran Paleri, “The United Nations: Decision Making under Constraints in an Uncertain World,” *Advanced Study Essay* (Unpublished), National Defence University, Washington DC, 1994.

²⁵ “Judges are Only Second to God, Belief must be Strengthened, Avers Supreme Court,” *The Free Press Journal*, Kolkata, 8 August 2001, p. 3.

²⁶ Nilova Roy Chaudhury, “India, the Next Great Power,” *Hindustan Times*, New Delhi, 13 February 2005, p. 4.

5

Threat Perception and Assessment

In the game of national security, a threat is as real as the ball in a football game; the secret is in preventing it reaching the target. That is not all...

A threat, in its simplest term, is what is regarded as a possible danger or harm to something—a target. In national security, the ultimate target is the well-defined objective—maximisation of national security (NS_{\max}). Threat is real, present and endless in a human system. It may not however, be clear. A nation should have the capability to identify and prevent the threat from reaching the target, and the knowledge that this alone will not be sufficient in maximising national security, which is the objective of governance. The collective centre of gravity of this objective is crucial because the objective will be annihilated if it is hit at the centre of gravity. The heart of the dragon, the Achilles heel, is situated at the centre of gravity of the objective. The threat is not to the concept, but to its objective.

THREAT PERCEPTION

A forewarning of threat—the approaching danger or harm, ignites the process of threat perception and continues till the threat is disseminated, destroyed, attenuated or the target is displaced from its path. The anatomy of a threat is multi-dimensional and can be identified even if invisible and abstract.

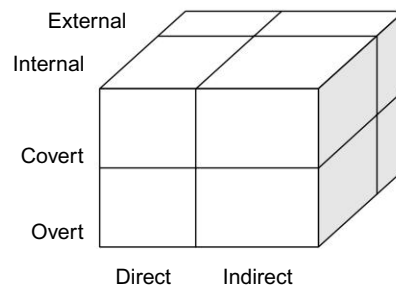


FIGURE 5.1 The Threat Matrix Cube (TMC)

According to a research by the author,¹ multi-dimensional threats can be analysed within the dimensions of a threat matrix cube (TMC) (Figure 5.1) as:

- (a) External and internal
- (b) Covert and overt
- (c) Direct and indirect

While the types of threats as per the cube are real and present, the degree or intensity may vary with respect to time. A threat is a vector with intensity and direction that can change. According to the TMC, a threat has to be within one or more of the eight multi-dimensional cubes. Once located inside the appropriate cube, observation of threat will become a continuous activity. It is a dynamic process. It moves within the cube and acquires a position with respect to time. The key aspect is measuring the intensity, changes and direction of threat. Preparation to protect the target from the threat commences here and should move on simultaneously. Identifying threats to elements of national security is the function of the government through the various machineries under it. The greatest danger is misperception of threat, which occurs all the time. Cervantes (1547–1616),² the seventeenth century author had hinted at the consequences of misperception of threats and wrong targeting through *Don Quixote*, the character he immortalised in his classic satire of the same name.³ The character imagines that he is a knight and gets into chivalric escapades in a scenario where threat perception was either totally absent or distorted. It may be a spoof on romantic novels of the period, but the fact remains that the Don Quixotic tribes still thrive around the world, in positions of authority. Some are of course smarter; they conveniently and deliberately misconceive the threat for what Barry Buzan called, “power maximisation,”⁴ not national security maximisation. Often, planning for threat response is based heavily on misperception and appreciation based on imagination. This is a chink in the armour of global security today. The perceptual differences have a lot in common all over the world and mostly because they are guided by imagination rooted in economics and power. In national security, deviation or static inertness arrests the momentum.

The threat originates from a place that is most favourable to it; a perfect place for it to bloom—the threat nursery. The location of origin could be calm and deceptive. Here, even nature could be an agent, a perpetrator or a threat generator. The location need not be just one. The threat could reside at multiple locations. In national security, a threat could be anything, coming from anywhere that has the potential to harm and dislocate human well-being, hitting the elements. The locations—the points of origin, in the case of multi-locations, could proliferate at different times.

TYPES OF THREATS

Within the TMC the threats are direct or indirect, overt or covert, and internal or external. A direct threat is straightforward. Even an indirect threat is easy to appreciate with respect to its direction to the target; it will always be towards it. For example, an island in the ocean that is likely to fall apart in an earthquake

could be an indirect threat to a far distant land across the ocean while being a direct threat to itself. The next category belongs to the overt-covert class of threat. Overt threats are easy to appreciate. They are non-deceptive. Covert threats are surreptitious. They should not be considered as threats that are not known, but those that the agents want to execute without the knowledge of the target most of the time. External-internal threats are based on the relative position of the threat with respect to the target. A threat at any one time will have the combination of the three ingredients of the group. Within these complex parameters, the threat has to be identified and appreciated for pre-emption or countermeasures. Pre-emption is before the threat originates. Counter measures are after it leaves its original location towards the target. Mitigation of damage comes after the threat hits the target. The choice is laid by different perceptions and parameters of governance. Table 5.1 summarises the eight combinations of threats within the TMC with examples chosen for illustration.

TABLE 5.1 Types of Threats to National Security with Select Examples

<i>Type of Threat</i>		<i>Select Examples</i>	
1.	Direct-Overt-Internal	DOI	Insurgency, communal violence, corruption...
2.	Direct-Covert-Internal	DCI	Naxalism ⁵ , corruption, insurgency...
3.	Direct-Overt-External	DOE	War, terrorism, sanctions...
4.	Direct-Covert-External	DCE	Proxy war, transnational crimes...
5.	Indirect-Overt-Internal	IOI	Environmental degradation, disasters...
6.	Indirect-Covert-Internal	ICI	Social insecurity...
7.	Indirect-Overt-External	IOE	Terror support, neighbourhood instability...
8.	Indirect-Covert-External	ICE	Surreptitious foreign aid...

Each of the cubes can be taken off separately from the main threat matrix cube for dynamically analysing the threat perception in national security studies. Figure 5.2 shows the eight different types of threat dimensions.

EXAMINING THE TYPES OF THREATS

A threat could be human-induced or otherwise. This book does not attribute any threat to acts of God, accident, nature, destiny, etc. But the word “agent” is used to refer to the entity—also perpetrator or generator—that causes a threat. In this examination, national security is the target entity.

1. *Direct-Overt-Internal (DOI) Threat*: The DOI threat explicitly heads towards the target from within the system. Insurgency, corruption, etc. may fall within this category. Being explicit also gives a certain degree of acceptance by the people in governance. There will be rationalisation as

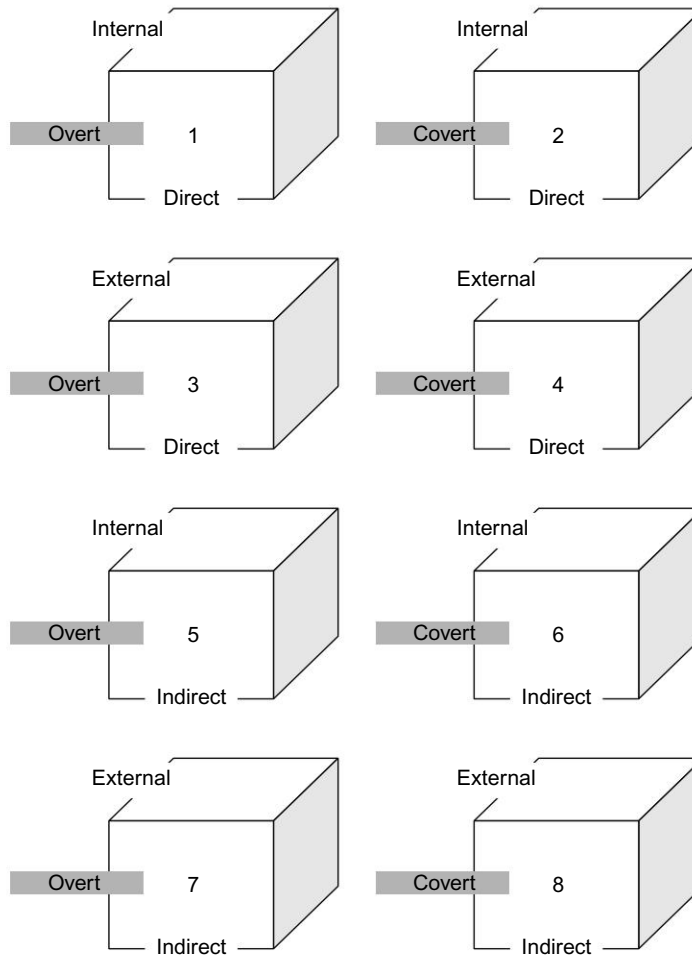


FIGURE 5.2 Types of Threats and the Threat Perception Dimensions of the Threat Matrix Cube

well as politicisation of such threats. Most of them are natural threats that may not be uprooted from society. There will be a sense of acceptance to live with such threats. In national security, such threats are better pre-empted. Countermeasures are not likely to be effective, besides being prolonged and costly.

2. *Direct-Covert-Internal (DCI) Threat:* The examples quoted above can also be seen covertly in this type of threat. The threat being covert cannot be directly identified. But the actions aimed at overt threats (DOI) could have an effect on the covert factor, if it has a relationship with the former. In other words, most of the DOI threats have their buddies within the DCI threats. The measures advisable for both are pre-emption in

- governance rather than countermeasures after the threat breaks its static inertia. Thereafter it becomes a prolonged affair, often very damaging.
3. *Direct-Overt-External (DOE) Threat:* War, terrorism, sanctions, etc. are examples of DOE threats. They are very prominent and frequent. The world has been reeling under them.
 4. *Direct-Covert-External (DCE) Threat:* The DCE threats may be known strategically, but are executed surreptitiously. An external support to insurgency, proxy war or geostrategic support by a superpower to a country under its traditional protectorate with an intention to damage an adversary, etc. belongs to such threat dimension.
 5. *Indirect-Overt-Internal (IOI) Threat:* A general strike called by a union that would affect a nation's economy or violence and looting by people, etc. cause indirect but overt threats internally.
 6. *Indirect-Covert-Internal (ICI) Threat:* This is a case that is not easily identified. Social insecurity, simmering discontent against a system, etc. are examples of threats to national security that are indirect and covert, and internal. Governments show a tendency to take these lightly.
 7. *Indirect-Overt-External (IOE) Threat:* Unrest in the neighbourhood or a forest fire across the border—such threats can always impact national security. Here the threat is external and overt, but indirect. A breach in a dam can cause a flash flood in the neighbouring country. It is a threat from across the border, and is hence external.
 8. *Indirect-Covert-External (ICE) Threat:* Indirect threats that are covert may seem to be strange. But the fact is that they are too frequent and far too many. Internationally, geostrategic domination mostly relies on indirect methods, often covert. They are external to a nation. Foreign aids and other acts that demand obligation from the beneficiary form part of such threats.

ANALYSING THE THREAT WITHIN THE CUBE—THE FLY BOX APPROACH

There are eight separate cubes within the TMC. The threat perception cube given in Figure 5.3 as an example, belongs to one of the eight cubes. The threat is “inside it,” like a fly in a glass cube. This example (the fly box approach) is important to understand the concept. The fly is the threat; it starts from a point and then unlike a real fly, is expected to settle only on the target, often aimed at its centre of gravity. Assume the point from where the fly will start is a filthy sewage trench and the point where it will sit is the sugar cube it is in search of. In the figure, the point from where the threat will start is “P.” So far it is fine...

Before the sugary point is examined, it is important to understand that a threat cannot exist without a target. The game ends in mutual destruction or destruction of the threat at the end of it, if it fails to hit the target. The location of the target is

at the maximum distance the threat has to travel, the point “Z” in the figure. It is the point where the fly will land at the end of its non-stop meandering flight. It is called engaging the target from the language of the threat.⁶ (In military vocabulary, a threat is considered the target in the attack mode—reverse appreciation). The path the threat will adopt need not be linear with respect to time. When deciding the preparation of the cube, the position of the point of the target is at the diagonally opposite side, the maximum distance from “P.” It is with these points as the baseline that the cube is designed to envelop the threat dynamics. Once the points of the origin of threat and the target are fixed, the cube can be prepared and analysed for its eight-fold nature. The threat need not move in a linear mode towards the target. That is why the example of the fly box is taken. A fly does not move in a straight line.

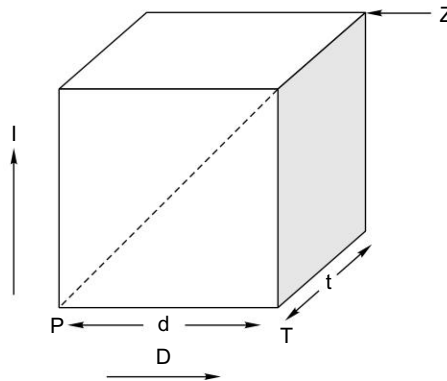


FIGURE 5.3 The TMC Analysis—the Fly Box Approach

The various positions in the figure are:

- P: Point of occurrence of threat (the threat plane)
- T: Position of target (target plane)
- I: Intensity
- D: Relative direction
- d: Distance to target plane (threat-to-target distance may be more)
- t: Time since occurrence (time warp relative to the position of the target)
- Z: Hit point on the target plane
- P-Z: Threat-to-target distance (in the example)

“P” is the point of location from where the threat originated. The target is at the point “Z.” PZ is the distance the threat has to cover relative to the three-dimensional plane—the cube, one of the eight cubes of the TMC. There are two planes, one on which the point P is situated and the other on which the point “Z” is situated—the threat and target respectively. The lateral distance is “d” between the two planes—the threat-target span. But the span is not the real distance the threat has to cover to reach the target, but the relative distance. This is an interesting

concept. Because there are many threats in the world that have already travelled more than the relative distance in time, the threat-target span, but are yet to reach the target. This is based on the entropy of the system. As long as the entropy of the system does not increase, the threat will be wandering in its plight towards the target without closing. A threat meanders through the space in the cube and the distance to target changes with respect to the relative location of the target. There may be circumstances when the target may peter out before the threat reaches it. The TMC relative to the threat becomes non-existent since the threat disappears along with the target. This argument establishes the constancy of the threat and the target plane as well as the essentiality of a target as the threat attractor for the threat to exist. For example, a target can be destroyed to eliminate a threat in an ideal mathematical situation. (It could be real too. Female foeticide is an example. What is it after all? It is determined elimination (misunderstood for moving the target) of the “target” (the female foetus) by the deranged (frightened) parents (the protectors) to avoid a perceived threat once born as a female who is considered a threat attractor! Here the parents become the threat to the foetus!) The location of the target will always be on the target plane, and the support that the threat may receive on its passage to the target has to come from it—the plane from where the threat attraction forces emanate.

The dimension of the target plane gives the relative time factor, though in reality, the time that affects the target could be more. It is denoted by “t” in Figure 5.3. The time warps the target and attracts the threat towards it. The threat remains on a variable course relatively in the direction of the target. Attempting to control the time may not be an acceptable proposition in countering the threat. The control that can be exercised therefore, is limited to the threat and the target. The control over the target is also limited if the target cannot be moved in the target plane to deflect the threat or gain time. The time gained is the time available to engage the threat before it annihilates the target. But the reason why direct control over time is not advised is that the threat can change its aspect in relation to the target and become more complicated. An example is a border dispute. A target may be deflected from the path of the threat by temporarily increasing the threat-to-target distance or deflecting the target permanently out of the direction of threat. But it should be understood that moving the target is not always possible; where possible, the target can move only on the target plane. The choice is either to move the target or destroy the threat by engaging it.

Time can neither be reversed nor kept still. It is linked with system entropy that is irreversible. In a system where the threat hits the target, the entropy is constantly increasing and maximises at the time of the hit. Can the entropy be controlled to control threat? What about an attempt to extend the time to target? What is called a (new) lease of time? In select cases these methods could be possible. Often, it is not a determined effort but an occurrence by chance. If it is a chance-induced activity, then is there a possibility of time getting advanced? It could be, at least hypothetically. If that is so, the target will take the hit early. When the

threat hits the target, the target would have undergone certain changes with respect to time. Assuming that it is the same plain as it was originally, it would be hit when the time is the maximum (Z), i.e. when the fly settles on the target in the fly box. The most important aspect that is to the advantage of the strategist is, ironically, the time that cannot be controlled. It can be used to engage the target. The engagement is in two ways: pre-empting—anticipating the threat and engaging it before it occurs, and attacking or evading it after occurrence before it hits the target.

This in a nutshell, is the basic model of threat perception. There are eight models applicable to all types of threats. Each one has its own specific characteristics. The approach is to prevent the threat from meeting the target. But the issue often is not a single threat perception. There could be multiple threats and threats that transform in their character once originated. There are also multiple targets in a system each with its vital centre of gravity that needs to be protected. There is nothing more interesting and engrossing than threat chasing. All types of threats to maximising national security can be included in these models.

THREAT MONITORING WITHIN THE THREAT MATRIX CUBE

Figure 5.4 is a model to explain threat monitoring under the fly box concept. A hypothetical example is chosen to examine the three factors in threat analysis within the box—time, intensity and distance. The time-intensity-distance (TID) cell at a chosen time on the threat-to-target path in this hypothetical example shows a few parameters, which indicate that the threat continues towards the target as its relative motion is seen in the shaded area. It has neither gone away nor attenuated as it can be seen at a particular time on its motion in the cell.

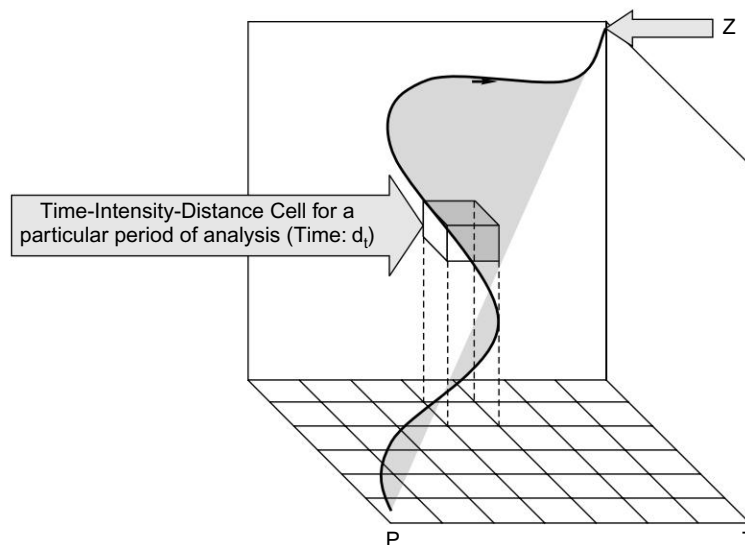


FIGURE 5.4 Time-Intensity-Distance (TID) Cell for Threat Monitoring

The cell parameters at a time " d_t " in the figure are as follows.

- (a) The threat has closed in before deflecting slightly away from the target. The reason for its deflection may vary. It may increase the time to the target.
- (b) The shaded area shows the advance. It is more towards the target. The threat therefore, is advancing to its destination.

The probability of neutralising the threat is increased since it has moved away from the target. However, it is not known whether its speed will increase in the direction of the target, countering the advantage available now. It is time to be careful about complacency. The parameters of the three-dimensional cell where the threat originates can give a direct hint about the threat that sometimes could empirically be used for threat-to-target analysis. In the above case, the threat shows a tendency to build up intensity and also to deflect away from the target. At the same time, its intention towards the target is evident. But there is serious difficulty to appreciate the threat at the time of its origin. Often it is perceived on its way to the target. In such cases, it is very important to see the distance and the time left in which to neutralise it. Identifying the parameters of threat is important in order to calculate the TID indicators at any given time.

THREAT ATTRACTION AND TARGETS

A target is an entity that attracts threat. The target is at risk the moment threat originates. One of the methods usually adopted in understanding a threat is risk analysis. Strictly it is a forlorn method because risk is not threat. Risk may even exist without a threat. It is certain once a threat originates. Risk analysis may not help in understanding whether the threat to the target exists or not. But it may help in insurance premium negotiation or licensing a particular target. A threat is a dynamic vector with varying intensity and direction during its course towards the target. It can get attenuated or change into a different form; it therefore, needs to be monitored constantly even after considered for pre-emption. The risk is associated fundamentals. Risk analysis is secondary to the threat perception and therefore, may not strictly speaking, help in the objectives. In effective management of national security, a government should never lose sight of a threat once located. Losing contact with the threat could be extremely fatal. Locating a threat within its cube is an art of strategy.

The way to identify a threat is to study the target thoroughly in order to understand its threat attractiveness factor and susceptibility. Distinguishing one kind of target from another and recognising specific classes of targets are important. Identifying the elements of national security just does it. Target recognition is the next step in which the varying characteristics are to be accomplished. Observing the target in high resolution in all available dimensions does this. The idea in maximising national security is strictly in defending the objective rather than

attacking another's objective. In military attacks, the target is to be recognised and acquired. Target acquisition locks the target, so that the threat follows it, wherever it moves. In national security, target acquisition is not part of the game plan. It is recognising the targets within and identifying threats towards them. The threat thereafter becomes the "target" to engage. The subject of national security does not recommend offensive strategy external to a nation except in attacking threat to national security objectives because, the basic principle of national security, and to that extent, even in global security (when the concept gains momentum), is creating win-win situations. That is the underlying philosophy that will hold the principles of national security and also support the choices available to the players in the game.

It can be seen from an example. An oil platform is a threat attractor because damage to it can cause a dent in national security elements. But it may not be in a location where certain threats can reach. In risk analysis, a threat attractor always remains within an area where a threat can generate. In the case of a threat attractor without a threat, the government ends up spending on imaginary threat perception. The threat attractiveness factor of a target alone need not meet the criteria for the existence of a threat. In normal risk analysis there is a presumption that the threat exists. Hence, threat perception techniques are of better value than risk analysis for cost effective target protection. Playing down the threat attractiveness factor of a target is an ill-advised method. For an insurance company, profit rings in enveloping insurance cover to prospective threat attractors that lie outside the threat area. It may not be possible because the threat homes on to it irrespective of being played down. Besides, it is more a psychological solution and applicable only in a few cases. Playing down the threat attractiveness depends upon deterrence strategy, camouflaging, secrecy, decoying, etc. It may work, but not always. These models are not appropriate in the modern world of information and knowledge. They also talk about the folly of raising the security level in a place under the shock and trauma of a tragedy, in another place. It amounts to risk analysis. Elevating security level, etc. is not cost-effective. Irrespective of what may happen, threat perception under threat attractiveness of the target is always the preferred method. It is different from the age-old method of risk analysis and temporary forays into upgrading security perception. The procedure for threat perception is analysing the TMC in its entirety and plotting the position of various threats within it as a function of time under the TID cell in the fly box approach. By inducing countermeasures the time parameters can be changed. Deflection can be either by moving the target or barricading it.

THREAT-TO-TARGET ANALYSIS

There is always time before a threat reaches the target. It may vary from seconds to years. Threat-to-target analysis is carried out to take advantage of the time available to respond to the threat before it encounters the target. However, an appropriate

level of preparedness is necessary in all such situations. Preparation cannot start after the threat is in motion towards the target in most of the cases, since the time available to engage the threat will be short. Threat-to-target analysis and interception methods can be analysed equally and identically for a long ranging threat to an element of national security or that of a random case of a house being broken in by a burglar. It is a question of time. The objective is to prevent the threat from reaching the target. There is a moment in time when the threat originates. The action, thereafter, is continuous unless it attenuates or vanishes before reaching the target. The action may be slow, quick or constant with respect to time until it reaches the target location. The object is to interrupt and destroy the threat in this period or to deviate the threat from the target. These are the only two options available. Collateral damage of the impact of the threat is the prime factor that is to be weighed, along with cost. In this process, the important steps are detection, analysis of the path and time, and response to neutralise the threat or deflect it. Moving the target is also an option. The probability of threat neutralisation depends upon the obstacle that can be provided to the threat on its way to the target. These principles hold good for any situation, any threat attractor and all kinds of threat models. The time periods involved in this calculation are:

- (a) Time to target
- (b) Time to detect
- (c) Time to intervene
- (d) Time to respond

The time parameters may change. For example, there will be more time to intervene if the threat is appreciated earlier. Sometimes this time could be more than the time to target. That is when it becomes known that a threat is likely to occur against a target. This adds another time factor: the time of likely occurrence of the threat. In such case pre-emption also becomes a suitable action. The time for pre-emption is the optimum time before threat occurrence. It is the pivotal time. Modelling threat-to-target analysis will indicate an optimum approach solution that will obviate the problem of subjective judgment. Surprisingly, even at the highest level of threat analysis, estimation is mostly subjective. That is attributable to various factors: ignorance, political compulsions, external pressure, administrative style, organisational system characteristics, urgency, opportunism, etc. Politicians or bureaucrats may not find time to carry out threat analysis even if competent. Therefore, there is a requirement for professional threat assessors and analysts to model the threat. Often their findings may also be disregarded based on prevailing bureaucratic policies and political pressures. That is natural. In any case, there is a need for a mechanism in which professionals carry out threat analysis. Modelling is a helpful tool that will provide optimal trade-off between costs and benefits. In all these parameters, the important keys are time to target and probability of detection. As the threat moves through the space available in

many cases, it can also cause collateral damages in terms of cost before it hits the target. Early detection therefore, minimises cost of damage while on track.

Today, a cruise missile flies at more than 900 kilometres per minute. The speed of a tsunami that will hit a sleepy coastal town is around 900 kilometres per hour. The missile, once it leaves its silo or launch pad, is a threat to an identified target. Before it leaves, the threat is the human system behind it. Pre-emption, here, means preventing the missile to be active. It could mean controlling the human system behind it. In the science of pre-emption, the system that will trigger the threat could be contained. Pre-emption is a highly competitive and specialised technique and an advanced tactical activity in defending the target. Of course, the onus of proof will be vested in those who pre-empt a threat. There are threats that cannot be pre-empted. In the case of the tsunami the system that may trigger it may be outside the reach of human containment. Nor can the tsunami be intercepted en route. But the damage that it is likely to be caused can be pre-empted by disaster avoidance (preventive disaster) management techniques. Here the target is the coastal system including human lives that could be partially deflected from the threat. Pre-emption is not always military strategy; it is applicable in very aspect of preventing a perceived threat reaching the target. One of the mistakes in threat-to-target analysis is the failure to see whether the target is relatively moving towards the threat. The position of a target relative to the threat at a given time will be stationary; moving towards the threat; moving away but in course with the threat; or moving away but not in course with it. In the last two cases the threat may not meet the target unless situations change. Such situations are not unpredictable, though difficult to appreciate easily.

TECHNIQUES OF PRE-EMPTION

Pre-emption of a threat to national security is not always the forte of the powerful. Anyone can do it with proper governance and management. The techniques may vary. Scientific appreciation and information are extremely important. Pre-emption may be unnecessary and can complicate the situation if it is wrongly perceived. Another danger is that governments may use pre-emption as an excuse for hidden objectives. Pre-emption is the most effective method of handling threats to the elements of national security. Though the subject by its name has gained notice of the public only recently, it has always been present in national security by its usage in military strikes. The saying, “prevention is better than cure” is the native form and perhaps the crude beginning of pre-emption. Today pre-emption is what happens more or less when an international agreement is prepared for cooperation in handling transnational issues; a contingency plan is made to evacuate people in an impending disaster; or the governments estimate budget for development. There are many threats that have been pre-empted before they take destructive forms. But the greatest drawback of pre-emption is in the inability of governments or planners to make the people understand the existence of threat(s) that need to be

pre-empted. These threats are not visible except to a few who are engaged in their elimination by pre-emption. Another problem is using pre-emption by misrepresenting people. These drawbacks could be obviated to a certain extent by effectively managing information. The greatest advantage of pre-emption is that it eliminates all the preoccupation and chaos related to engaging the threat in threat-to-target analysis once the threat has moved towards its ultimate destination because, it is where chance plays truant and makes it difficult to engage the threat. A prolonged border dispute is an example of how chance can transform the threat itself while on passage.

THE GAME OF CHANCE IN THREAT ANALYSIS

Chance is a word that according to some, used to express the unknown, or what one is not sure about. According to Rastrigin, the Russian scientist, chance is unpredictability based on human ignorance.⁷ It is central to human ignorance in a cause and effect situation. Chance exists in every system. Though Daniel Goleman, the author of *Emotional Intelligence* states that the human brains are still primitive designed for the caves and forests,⁸ humans undoubtedly belong to an advanced breed today, at least on the surface. But their handicap in knowledge is as massive as the universe itself. It is an ideal world for chance to intervene. Limitations of humans are in the accuracy of measurement because of the complexity of the system and the principle of uncertainty or indeterminacy. Werner Karl Heisenberg (1901–1976) the German physicist was the first to formulate the principle of indeterminacy in 1927. That earned him a Nobel Prize in 1932.⁹ While the principle of indeterminacy or uncertainty is based on physics, it is equally applicable in other activities. The principle simply states that when uncertainty of a particular part of the system increases, the accuracy of predictability by measurement (certainty) in another part of the system increases and vice versa. A prejudice triggers an uncertainty; chance takes over. But the world of humans with their quest for knowledge lives on in spite of all uncertainties. Chance, according to the studies of Rastrigin, rests on:¹⁰

- (a) The principle of uncertainty or indeterminacy
- (b) The inexhaustibility of the Universe
- (c) The limitedness of human inability (at the particular moment in time)

The conclusion that can be deduced from these findings is that chance will always exist where indeterminacy or uncertainty prevails, because the system has too many unknowns within it and there is a limitation for humans to predict the future, just as the past cannot be changed. Allowance for chance, therefore, becomes an expert field of study for the never-ending spirit of humans to learn and practice. Many scholars in various fields have studied chance as a subject. But for the purpose of this book, it is limited to the statement that a major activity in threat perception is managing chance.¹¹ Chance cannot be discussed in isolation without reference

to another equally complicated, but very friendly concept—entropy. It originates from the famous second law of thermodynamics postulated by the French engineer Sadi Carnot.¹² According to him, a closed system tends towards its most probable state—the state of complete chaos.¹³ According to this law, all systems that are completely isolated ultimately become disorganised, decayed and dead. In engineering, it is called depreciation; in biology, aging; in chemistry, decomposition; in sociology, decay; and in history it is termed, decline.¹⁴ The second law can be further extended to serious studies on issues related to national security and allied subjects. The term entropy explains the degree of chaos or disorder in a system. It is clear that in such systems that tend to proceed towards chaos, entropy will increase until it maximises at the point of death or destruction. This means that entropy is irreversible; it does not decrease in a closed system. In other words, a closed system cannot by itself increase its state of organisation.¹⁵ In threat perception, one is dealing with a closed system where the entropy is on the increase with respect to time. According to the laws of chaos and disorder, the solutions under such situations are far too many for those who dare to explore.¹⁶

INTELLIGENCE IN THREAT PERCEPTION AND ANALYSIS

A wider section of the strategic community consider information as intelligence, whereas it is important to understand that threat perception and analysis can be carried out only by effective intelligence beyond the cornucopia of information. Here intelligence is the intention of the agent of threat. Understanding the intention is important in order to decide countermeasures. Intention also includes the time dimension. It is all the more important therefore, for it to be supported by well-coordinated intelligence outfits in every faculty of national security. Threat has to be ascertained accurately. That calls for accuracy in actionable and real-time information without which the threat gains advantage (for the opponent who or what it may be). Such information is intelligence. There is a difference between intelligence in threat perception and assessment, and that related to operations. In operational intelligence, secrecy is the key word; intelligence is denied to the opponent. In threat perception and assessment, one may sometimes let the opponent know about the threat by overt activities, warnings, etc. Often it is done when the perpetrator is trying to save cost and effort by achieving the result otherwise. A threat that is exposed by the perpetrators in human-induced situation is a sign of weakness on their part unless it is a planned psychological operation. These observations can apply to any field of competition, not only in a conflict situation. These are the points the planners of national security should know. An intelligence system makes planning effective. It will acquire, collate and process information from sources and will evaluate processed information to appreciate the situation. Planning starts with evaluation of the characteristics of the threat. The next step is to identify its likely momentum and position in the TMC. Its path is evaluated and the most convenient position to engage it or nullify its impact

is identified subsequently. This activity with respect to a threat may last for seconds, days, years or even centuries. Though secrecy is important in intelligence, transparency may stand to advantage in certain cases. Deception is of advantage in a conflict situation, except when a win-win scenario is desirable. In most cases of national security, a win-win scenario yields better results.

THREAT APPRECIATION AND BUDGETING

Threat measurement in relation to each element of national security is important for budgeting countermeasures. Techniques will vary for each element. For example, the threat to military security is normally taken as the gap in the military capabilities between a country and its potential enemy.¹⁷ Threat measurement in other elements will depend upon their peculiarities. There are no thumb rules yet. Mostly, it is based on the perception of those in authority. Balancing expenditure as percentage of gross domestic product (GDP) is important in national security. Threat measurement has to be with respect to national security as a wholesome concept and, thereafter for each of its elements. The overall objective is to maximise national security. A question that can arise in national security governance is about optimum budgeting. This will depend upon the accuracy of threat appreciation and the commitment of those in governance towards national security maximisation.

CONCLUSION

A threat is a force that may hinder the objective of governance—national security maximisation. The requirement is to prevent the threat from meeting the target—the objectives of national security. Threats come in eight different dimensions. They need to be identified and calculated precisely. The threat–target encounter is eliminated either by moving the target to deflect the threat away from it or by destroying the threat. The threat is destroyed either by pre-emption or by engaging it within the time span. While pre-empting, the profile of the threat will be different. It will be the prime mover mechanism of the yet to happen threat. In the study of threat perception, it may be thought that one of the methods could be reducing the threat attractiveness of the target. But this is not practical. The threat attraction of the target is always by default in national security. An interesting find is the system of entropy—the measure of disorder in a closed system. Entropy always increases and is irreversible. Reversing entropy is impossible. If it happens, it will be a miracle. But, entropy blocks miracles.

Notes

¹ Prabhakaran Paleri, “*Changing Concept of National Security and a Maritime Model for India*,” Doctoral dissertation, Department of Defence and Strategic Studies, University of Madras, Chennai, February 2002, pp. 60–61. The TMC was first introduced in the book, *The Role of the Coast Guard in the Maritime Security of India*, by the author, researched for the United Service Institute of India, Knowledge World, New Delhi, 2004, p. 25.

² Miguel de Cervantes Saavedra, Spanish novelist, playwright and poet.

³ *Encyclopaedia Britannica*, CD-Rom, 2001., Miguel de Cervantes Saavedra wrote *El Ingenioso Hidalgo Don Quixote de La Mancha* ("The Ingenious Hidalgo Don Quixote of La Mancha"; known as Don Quixote, Part I). It was published in 1605.

⁴ See Chapter 3, Table 3.1.

⁵ An uprising of peasants in India in the late 1960s against the landlords at Naxalbari in West Bengal. It continues today as a full grown idealist insurgency activism primarily supported by the Chinese Maoist communist principles and has become a way of life for the people in certain villages.

⁶ The readers pre-occupied with military concepts will find a certain difficulty in understanding the concept at this stage, because in such cases the threat is often referred to as the target—acquiring the target, engaging the target, etc. are the terms used in conventional military studies. In this book the threat is different from the target. The target is the concept of national security and its various elements. The perception, therefore, needs to be absolutely clear in order to understand the concept.

⁷ L. Rastrigin, *This Chancy, Chancy, Chancy World*, Mir Publishers, Moscow, 1973, pp. 18–22.

⁸ Tom-Butler Bowdon, *50 Self Help Classics*, Nicholas Brealey Publishing, London, 2004, p. 156.

⁹ Rastrigin, n. 7, p. 25.

¹⁰ Ibid. p. 33.

¹¹ Chance occurs all the time in shaping the Universe, the world and all in it including the human system. It happens every moment. Some are noticed and people are not even aware of others. Among those that are noticed, is a beneficial chance called luck and a damaging one, which is ill luck or bad luck. Whatever is neutral is not talked about. It is chance that gives rise to the fog and friction in a war scenario, as well as in many conflicts and activities. Managing chance economically and effectively is therefore, a crucial aspect of any activity, not just of those related to national security alone. It is making allowance for chance when a debate takes place with such titles as, "if so and so had not happened, what would have been the situation today?" Under the laws of chance such a situation has no probability of occurrence and hence, is not a valid argument.

¹² Nicolas Leonard Sardi Carnot, (1796–1892), was a French physicist and military engineer. In 1824 he conceived the ideal heat engine called the Carnot engine, which used all the available energy. Here is where he discovered that heat could not pass from a colder to a warmer body and that the efficiency of the engine depended upon the amount of heat it was able to convert into energy. This discovery was called the Carnot's cycle in heat engines and paved the way for the second law of thermodynamics. This second law makes use of the concept of entropy that states that in an isolated system any change is accompanied by an increase in entropy. Entropy, under chaos theory is not restricted to thermal engineering alone.

¹³ Rastrigin, n. 7, p. 43.

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ More on chance and entropy is covered in Chapter 25.

¹⁷ Such analysis though vague is wrong as can be seen from the example given in military spending with respect to economic security in Chapter 4, Figure 4.1. For example, when

the potential rival goes for an advanced weapon, the military demands the same weapon or a superior weapon in their arsenal. The end effect is economic breakdown and an impact on economic security. If the defending country does not invest in overcoming each new threat to its capability—by technology, new types of weapons, increasing the stock of current weapons or all three options simultaneously—it will risk a reduction in the probability of non-attack, that is, its deterrence capability will be compromised.

6

Terrain Assessment and Specificity

The terrain is where the duel is set, victory decided and time never ends...

In its original form, terrain meant land, ground or topography. According to *Art of War*, Sun Tzu's¹ much-revered classic on military strategy, terrain is the immutable and real entity in a confrontation. Understanding the terrain clearly is an indisputable quest in any game plan in strategy. Confrontation takes place on a terrain that can be identified and well-defined for strategic appreciation. Understanding the terrain is therefore, important for success and ultimate victory in any situation that needs a decisive ending. Since confrontation takes place on a terrain, the capability to enter and manoeuvre within the terrain is an overriding requirement. For Sun Tzu the terrain was one of the four elements of detailed strategic planning. Others were the enemy, the self and the weather. "Know the enemy, know yourself, and your victory will not be threatened. Know the terrain, know the weather, and your victory will be complete," Sun Tzu stated in his principles of detailed planning.²

Battles were fought over land in the days of Sun Tzu. A war is normally concluded in the primacy of land. The reasons were obvious. Humans clung to land for survival. For these reasons, the word terrain, evolved and established as the "area over the land." The ground as a terrain, decided the type of operations, based on various factors that are important in its changing concept. These factors were:

- (a) Compatibility of the ground for operations
- (b) Nature of the ground—open or constricted
- (c) Distances that will affect operational logistics
- (d) Threat from the terrain
- (e) Scope that the terrain can provide for operations and manoeuvres
- (f) Tactical advantage of the terrain for attacks and withdrawals

For Sun Tzu, the term terrain, was actually different from the term, ground. Terrain applied to the characteristics of a ground,³ as a domain. A ground was the medium on which the terrain existed as per Sun Tzu's appreciation. The terrain was fixed once the operation began. The idea that stands out in this classification is appreciation of the concept of *terrain advantage*—the good and bad aspects of terrain.⁴ The term is also relative to the players and their visualisations. Once the

decision is locked on to a particular terrain, it will have to face the consequences the terrain offers and also facilitate the support that the terrain provides, relative to the advantage of the player. The threat occurs on terrain. It is also where it has to be settled. The quantum of terrain advantage is important for decision-making. Terrain advantage is the result of favourable and unfavourable conditions with respect to a terrain. It is a relative expression. It can also be construed that decisions with respect to a terrain and the capability to manoeuvre within its domain will be complementary to terrain advantage. This argument makes all realms of operations as potential terrains for manoeuvres and hence, a favoured topic for managing national security. The concept of terrain in national security has a majority constant characterisation like in any system with a boundary. It need not be strictly geographical.

Apropos to these statements, there is a caveat. This book does not recommend overdependence on Sun Tzu's principles in managing national security. The advocacies are simply not suitable. The primary reason is that this book does not advocate national security as a subject of defeating, but winning. Winning does not mean defeating. A winning plan is not necessarily a defeating plan. In national security, defeating does not guarantee victory. Though the concept of terrain in national security is identical in character with that explained in Sun Tzu's classic, it is not a land or ground based concept. This will be seen later in this chapter.

THE MEANING OF TERRAIN

According to the dictionary, terrain means a ground or a tract regarded as a field of view for operations, or as having some sort of unity or prevailing character. The word terrain came from the Latin *terrenus-tera* meaning earth, natural features and configuration of land, and its topography. Terrain is also a region characterised by common ownership or geographical features. It is an area, field, realm, province, territory or domain. The meanings are many, but all of them underscore the term as an expanse, geographical or otherwise, which is important for competitive operations or activities.

According to Kautilya's *Arthashastra*, terrain is a vast area where conqueror could carry out military operations. A careful study was needed to understand the terrain in order to make it advantageous in terms of strategic planning. This statement is in agreement with Sun Tzu's observations.

TERRAIN AND WARFARE: INQUIRY INTO A DEFINITION

As seen from Sun Tzu's *Art of War*, the principles of terrain specificity originated from warfare. Since the 19th century, the nature of war has changed immensely. Proliferation of scientific and technological inventions added new dimensions to the way battles were fought. New categories: air and space warfare, guerilla warfare, etc. were added to the already existing traditional classifications of sea and

continental warfares.⁵ The basic tenets of all types of warfare remained identical. One of the identifiable commonalities was in their terrain specificity. From the very beginning, land warfare depended upon topographical elements for tactical and strategic manoeuvres. Sun Tzu is not alone here. Among other strategists of the early period, Kautilya highlighted this concept in *Arthashastra*, and much later, so did Clausewitz (1780–1831)⁶ in *On War*. Land warfare unfolds over a concrete terrain including roads, passages, elevated ground, cover and obstacles of every kind. The winning recipe in a combat requires thorough understanding and utilisation of the terrain to its fullest advantage.⁷ Understanding the terrain is a decisive factor in any operation. Terrain incongruent decision-making can upset the object of an operation. It is applicable to all the identified terrains and those that may come up in future. It is against this background that the concept of terrain has to be defined with respect to national security. This book defines a terrain as, *a domain, geophysical, physical or otherwise, that has the capability to decisively define the management of national security towards national power by influencing the concerned element of national security*. From the definition, the terrain specificity characteristics can be identified as:

- (a) A system entity of expanse, geo-physically, physically or otherwise, and with a distinguishing character that separates it from other terrains
- (b) A domain that is continuous within its identifiable boundaries
- (c) Clear connectivity with other terrains from the point of view of national security
- (d) Strategically and tactically decisive for manoeuvres in managing national security
- (e) Directly involved with the strategic interests of a nation
- (f) Qualified threat attractor for conflicts
- (g) Capable of closing and opening at will

An important deduction here is that a terrain, from a national security point of view need not be strictly a geophysical entity. It is the overall strategic space in which an element of national security manoeuvres. A terrain influences an element decisively. Being a strategic space, a terrain also influences an element in its tactical manoeuvres for attaining the desired objectives. Terrain is fundamentally associated with tactics and strategy in the achievement of a goal. In this parlance, every realm of operation becomes a terrain. At a macro level, humans operate on varied realms. Identified terrains fall in the geophysical and non-geophysical categories. While land, air space and ocean form the three geophysical terrains, outer space, cyber space, genome and the human mind⁸ are identified as non-geophysical playgrounds for hunting down the threats to national security. Operations on these terrains encompass all activities of human survival. Therefore, they are to be governed by the terrain specificity principle. The terrains are not identical, but inclusive in a continuum.

GEOPHYSICAL TERRAINS

Geophysical terrains are congruent to earth in all aspects and directly perceptible to human senses. The three-dimensional profile of geophysical terrains comprises landmasses, oceans around them and air space that constitutes the atmosphere over them. The three together make the planet Earth. The geophysical terrains are divided into nations with boundaries between them. Boundaries between nations are volatile. Disputes are normally over land and sea; air space is collateral to them.

Land

Land is the primary terrain for diverse operations and activities since the beginning of human life. Human psyche is innately involved with land. Though the most vibrant terrain with human activities, it is surprisingly the smallest of all geophysical terrains with the possibility of reducing further in area. Land is the only terrain which humans are comfortable to inhabit. In other geographical realms and outer space, they need platforms designed appropriately for habitation and manoeuvrability. Land is the natural platform for human inhabitation. Mostly, the interplay of elements of national security is over land. Land is the command platform for humans in their quest for national security. The importance of land as a terrain in national security is governed by varying factors:

- (a) Ownership: geo-property rights—whose land is it?
- (b) Contour and geo-profiles: geographical characteristics—high, low, embedded, submerged, etc.
- (c) Habitability for life—habitable, uninhabitable, hostile, temporarily habitable, etc.
- (d) Historic impact: human activities over land and changing values—ethnic security, demographic security, etc.
- (e) Arability—food security
- (f) Resource availability—resource security
- (g) Changeability—ethnic security, demographic security, etc.
- (h) Connectivity—internal and external
- (i) Environment—environmental security, life sustainability, etc.
- (j) Threat attraction factors—disaster security, border security, etc.
- (k) Overall command platform for strategic application of national security principles

National security is not national power. But both the concepts are linked closely. Maximising national security elevates national power. In this process, the land holdings—geo-property rights related to land—have an important role to play. Land property is a common denominator in conflicts. This is the only terrain that is also owned by individual people of a nation and not by the government alone. People do not own other geophysical or physical terrains; at least not yet. Human struggles relating to land are notorious in some cases. These struggles have been

carefully recorded as part of human evolution through the ages. Many military aspects were related to land property in the past and still continue in border and island disputes in the world. Ownership of the property is also treated separately in different countries. According to V.I. Lenin (1870–1924),⁹ the one who held land property was a bourgeois. Abolition of private property was the theory propounded by Karl Marx (1818–1883)¹⁰ and Friedrich Engels (1820–1895)¹¹ as per *The Communist Manifesto*.¹² In some systems land is owned collectively. Each system has its own arguments that ultimately points to human welfare. It is the communist manifesto that extends to other geophysical terrains currently. No individual owns a piece of sea, air or space, probably because of limitations. The approaches chosen are not identical. Even where individuals own land, there is collectiveness in ownership with close family having a stake in it in its present or future form by inheritance. This was also applicable to the rulers of a kingdom where the common people seldom owned land as freehold. There were multiple owner identities.

Humans settled down in concentration in the so-called Neolithic revolution that witnessed the growth of towns and cities. Land was reclaimed, where possible, from seas and forests for cultivation and was owned by residents under communal distribution. Land placed pressure on energy and capital. Technology replaced animals, and where it could not, the animals continued as cheap sources of energy. Where cost was important and animals scarce, there was alternate energy. An example is the windmills of Holland. There was no limit to human innovation through seemingly simple but extraordinarily dynamic individual perception. Not just the crops, but even intellect originated as the way of life from land. And soon population threatened to outstrip all that was made.

In original communist ideology, the sense that individuals have no right over land property stems from the fact that the land is not made by human beings. They inherited it. According to the ideology, it belongs to the entire species as a common property. That is how the ocean (almost) is visualised today. It is not known how the outer space and distant planets will be seen one day from the point of view of ownership rights. The people who came early took over the land. Those who followed bought from the owners. Common properties are owned by the state; it may sell or acquire them from private holders depending on situations. States have sold land to other countries as extension of their borders or as a place for the settlement for official or diplomatic business within their geo-property perimeters in four continents. The fifth continent Antarctica, is an exception. Property rights go in tandem with human rights and the former takes precedence when there is a conflict.¹³ Land establishes the state-individual relationship. Land as property, is associated with national power. Territory and population can be called as the critical mass in power equation. Politico-individual relationship is established through land reforms. It is a property-focused strategy in national security. This is especially so when the land is at a premium. In all these studies, a major question surfaces. How much land does a nation need to balance its national

security? What should be the type and quality of the land? What is the optimum size? How is it calculated? How much should the government own? What should be the proportion for arability, urban limits, industrialisation, environment and other needs? In the olden days, it was presumed that the more the land, the more the power. It may still be perceived that way. But the concept of national security, in accordance with its definition, does not fluctuate by land acquisition. It is not necessary that the NSI of a nation will be proportionate to its land holdings. The next question is, which land area in the world is the best for setting up a nation? Does choice of location to set up a nation matter in national security? These questions are only hypothetical. As long as a nation-state is in existence, in whichever form it may be, it is its exclusive responsibility to manage its national security concerns in the best possible way to maximise it. In that, the land terrain is one of the playing fields. How the game is played is the way the national security will be governed. Human existence is fixated to land. Disputes over land holdings separate families, communities and nations. It often turns violent and results in clashes or agitations that need intervention. Land disputes are not just border disputes, but also disputes over resources. Expropriation of land for public use is another cause of dispute within a state. The same goes with pastoral land. Pastoral life is not nomadic; yet these people are called nomads in some parts of the world. For them the cattle are important—like the transhuman people, the Barabaigs of Neyrere's¹⁴ Tanzania. Food comes from cattle. East Africa had one of the greatest communes of pastoralists but they became endangered for reasons not recorded clearly. The cause was assumed to be developmental projects. For a pastoralist, the guiding principle is land, not development or money, because land nourishes their cattle, which in turn nourishes them.¹⁵

The closeness of humans to their land in whatever hierarchical status they are is an important issue in their welfare. Humans are attached to their land whether as a state or as the owners, physically, mentally and emotionally, irrespective of their position and geographical location. They are close to their land and to their environment; take them away and they will choke. In places where land or environment is not available, they will find it symbolically. Trees are dwarfed so that they can be kept on their windowsill; they are called the bonsai. There is no problem even if the objects of land-based nature are made of plastic, clothes, paper or any other suitable material. They are displayed in a city skyscraper to bring the feel of the land that humans cannot separate from their psyche. It is too close to their consciousness and they become restless when a threat is envisaged to their earthly possessions, imaginary or otherwise. Their well-being depends upon protection of their land and environment more than anything else. The terrain is strong and inseparable in their psyche. People are close to the land where their ancestors, and close friends and relatives are buried. Those who were born and then separated from their place of birth are conditioned in the early years of life to be close to the land where they grew up. Under this argument, some may have a duality in their mental land holdings. Any attempt to sell, divide or take over for

development means violation of their souls. There are traditions that are followed by people, which no government can understand in its developmental planning. Developmental planning can be interpreted as exploitation. Construction of a dam that may bury villages under water can be heart-rending to people who live there. It is painful for people to vacate their land where they and their ancestors have lived for many years. A government planner may not understand such feelings. These feelings are emotional and emotions affect well-being, which is the essence of national security. No local “Barabaig” will be able to express the feeling. They can only resort to aimless agitation under opportunistic or insincere leaders from elsewhere, for their agony that is perpetrated in the name of development. Without well-being, development has no place in national security. Quantifying the feel of the earth is impossible in economic theory. Pearl S. Buck’s (1892–1973)¹⁶ classic *The Good Earth* draws a line under to show what the concept of land signifies for humans in their drama of destiny.¹⁷ Land is at the centre of every class struggle, conflict and decline. Partition of land can cause havoc in the ethnic psyche of the human population. Their behaviour patterns will change beyond normal. An example is the partition of India in 1947. The injuries are not yet healed even after more than half a century; and probably never will. They will transform and stay there for centuries. Land is the underlying conscience. Displaced people carry the loss even in their genes for generations. However, partition and subsequent displacement under coercion from the land one owns has its better sides too. A majority of such people become more determined and persevere for better opportunities in life, which perhaps would not have existed in the original place. Those who survive the distortion of partition or dislocation generally succeed in every respect in their chosen locations.

Governments resort to land reforms for agricultural and associated economic measures. The early Greek and Roman empires had introduced land reforms as early as the 6th century BC.¹⁸ Though reforms are meant for solving problems, they may induce problems if carried out with deviated objectives. The socio-political objective of land reform is to abolish feudalism, liberate peasants and support democracy. But do land reforms uplift the peasants? They have to be associated with additional compatriot reforms. Nation-states brought a new era in land reforms. The feudal order was abolished. The reforms over the world since then have not been unilateral or identical. Each nation had its own contribution in the principles of land reforms. The degrees of seriousness varied. While the intermediaries were abolished in India and Pakistan, China introduced village communes. In Latin America, it was based on primary plantation economies and small units. The United States’ paranoia on communism was strongly reflected in Japan’s land reforms and their Southeast Asian partners. The allies who occupied Japan after World War II governed its land reforms. It was maintained in order to make it an industrial economy with a high literacy rate. The objective was to sustain political order, lest they should fall under the grip of communism. In the Egyptian society, land was divided into private and *waqf* ownerships. The *waqf* land was

inalienable, whereas private property was speculative and tradable. Mexico witnessed land reforms with the revolution, in the early 20th century. It was based on conversion of the lands of the aborigines to plantations and the abolition of serfdom. How much the land reforms contributed towards its primary objective of agrarian revolution and making the peasants free and independent is not a question here. The aim is to establish the importance of land as a primary terrain in national security. Reforms were not just related to land tenure and distribution. It is much more than that, and deals with total revolution in agrarian land usage. There are clashes between people and government officials in industrialising countries like China and India where governments acquire land from farmers for industrial use—the terrain specificity of national security is hidden here.

The question, “how much land does a nation need?” has been asked earlier. There is no more land available for ownership. Is excess land an advantage unless it is resource specific? What if the land available to a nation is considered short? Can extraneous land space—multi-city towers, city ships, ocean cities, reclamation, etc. resolve the issue? These questions also may not be valid in national security since the age of land grabbing by states is almost over. What are left now are disputed territories at certain border areas. Can nations consider selling their landholding in the way Napoleon (wisely) sold off the French area in 1803¹⁹ and the Mexicans (unwisely, though under intimidation and coercion) sold off New Mexico in 1846 to the United States? It is a question a nation has to ask itself. Does it have optimum land territory? If not, can it purchase land from the neighbourhood owner state to resolve border issues as well as to balance shortage? In the midst of all such questions, land as a terrain remains central to national security.

Ocean

The maritime dimension of the world is embedded in the terrain specificity of the ocean. To understand the importance of the ocean, one could observe in antiquity the story of the Trojan War, Greece against powerful empires from Asia, 19th century England against Napoleon, the United States and its allies against the Soviets and Red Chinese empires in Eurasia and other gargoyles of maritime history of the world. The ocean has had a profound influence on the world.

In the early days the ocean was at a very low level. Around 20,000 BC, people could walk across today's continents. Today's crowded seaports were dry lands, that too, far from the sea.²⁰ Global warming melted ice around the world between 12,000 BC and 9,000 BC. According to compiler Rodney Castleden's *World History*, the sea level rose by 40 metres by 13,500 BC.²¹ Large areas were flooded. People could never figure out the reason for the rise in sea level. By 7,500 BC, the seawater rose to a level that was about 30 metres below the present altitude and continued to rise rapidly devouring the land. By 3,800 BC, the level reached eight metres below the present level.²² The temperatures were higher than they are today.²³ According to author Geoffrey Blainey, the sea rose as much as by 140 metres with

the rise in temperatures during the prolonged period, though he states that the rising was complete by 8,000 BC.²⁴ In his assessment, it was the most extraordinary event in human history during the last 100,000 years. It transformed human lives forever. The ocean terrain came to stay and influence human life considerably thereafter. It also has the potential to extinguish the majority of life on earth one day if it further rises uncontrollably. The ocean can cause proximity and isolation—both powerful determinants of history.²⁵ Today, oceans cover 360 million square kilometres, about 71 per cent of the Earth's surface. The land adjoining the ocean has a coastline of 504,000 kilometres (continuously changing).²⁶ Though the sea appears to divide the nations, from a different perspective, it unites them geographically. It binds the continents. It is a medium that humans have ventured out for centuries to discover, conquer, trade and harvest. The average depth of the ocean is four kilometres. Those who traversed it depended on each other, helped and developed special bonds. The contents of the ocean are yet to be calculated accurately. It is expected to hold:²⁷

- (a) 328 million cubic miles of water
- (b) 58 species of sea grasses
- (c) 1,000 species of cephalopods: squids, octopi, and nautilus
- (d) 1,500 species of brown algae
- (e) 1,000 species of sea anemones
- (f) 7,000 species of echinoderms: starfishes, sea urchins, sea cucumbers, and sea lilies
- (g) 13,000 species of fish
- (h) 50,000 species of molluscs
- (i) Oil
- (j) Gas
- (k) Metals
- (l) Minerals

Another way to understand the ocean is from identified facts:²⁸

- (a) Global fish production exceeds that of cattle, sheep, poultry, or eggs and is the biggest source of wild or domestic protein in the world
- (b) Two-thirds of the phyla, the major grouping below the kingdom level is predominantly marine
- (c) 85 per cent of fish landings in 1985 were marine
- (d) 15 of the world's 17 largest fisheries are over fished or in trouble
- (e) Less than 30 of the coral reefs in Japan, Philippines and Costa Rica are in good or excellent condition
- (f) The Great Auk, Steller's Sea Cow, Panamanian Fire Coral, San Diego Mud Snail and Eelgrass Limpet are now extinct
- (g) The ocean floor is an exact replica of land

From the point of view of national security, the following oceanic components are identified as the factors that historically contribute to the development of the regions around the ocean, jointly classified as “ocean property” by the author, in a research carried out to study the maritime components of national security.²⁹

- (a) Ocean resources
- (b) Ocean advantage
- (c) Ocean environment
- (d) Oceanic islands

Threats to ocean property can affect the national security of a maritime nation. The ocean is a multi-dimensional terrain that will be critical to the national security of maritime nations. It has the surface, the ocean layer, the interfacial zones with air and land, the deep abyss and finally the floor—the seabed. Wealth and stealth are the key factors of the ocean. The stealth factor has been greatly advantageous for military security from the time of the submarines. The submarine proved its worth as for the classical *guerre de course*.³⁰ The ocean is the only geographical terrain that provides such an advantage of stealth and a stock of almost everything that life on earth needs.

Air Space

Humans were so preoccupied with land for survival that it took them ages to understand other geophysical terrains, especially air space that envelops the world as its armour. No life form on earth can survive with the vagaries of the sun unless clothed by air space. Even a small opening in this garb can invite deadly consequences. Since the time the Wright Brothers³¹ created a vehicle that was heavier than air but could move through it by levitating under speed, air space has never remained the same. An aircraft provides the virtual “high ground” in the dimension of air. Invention of a flying machine that was heavier than air was an event in the process of accelerating the rate of change. Air space became an element of national power. Airplanes and air warfare, commercial transportation and all other activities changed the world. Air space has its own threats from the point of national security. The world’s most daring terrorist attack so far came from air space on 11 September 2001 in the United States.³²

Air space is not a security terrain alone. It is the churning machine that produces climate variations, though it originates from the ocean. Air pollution is a major cause of concern for communities because the impact can be felt beyond the point of origin, across national boundaries. The environmental security of a nation can be seriously hampered by air pollution even if the origin of its cause is somewhere else. Air space is the only terrain that has continuity with all the geographical terrains. Each interface is peculiar by its own characteristics. In aerial warfare, the control of air space is essential to control land. Air space has been visualised as a terrain with an advantage, much earlier in military aspects. Military security was

overwhelmed by the term “air power” coined by Douhet Giulio (1869–1930)³³ an Italian army general trained in artillery. He revolutionised air space as a terrain of advantage and was later known as the father of strategic air power. Initially his contemporaries mocked at the idea.³⁴ In spite of resistance he persisted in making strategic air power an accepted part of military thinking. He advocated creation of an independent air force and unification of armed forces besides reduction in ground and sea forces. Some of his ideas were followed and some dismissed.

NON-GEOPHYSICAL TERRAINS

As already seen, the terrain of operation in national security governance is not determined by its geophysical nature alone. The observation will be inconclusive, if this evolving fact is not stated. Terrain specificity also extends to non-geophysical domains like outer space, cyberspace and the evolving genome. Another potential non-geophysical terrain could be the complex human mindscape itself.

Outer Space

Outer space is the physical terrain adjacent to and around the earth’s atmosphere. It is non-geographical. It is a vast continuum of a different dimension and perception. It borders air space into infinitude at the current level of human erudition. Space has become an important component of the international world in strategic thinking.³⁵ In the 21st century, space systems will be under the nexus of economic, diplomatic and military elements of national power.³⁶ Therefore, it is a terrain by itself. Outer space has been brought under international law since 1957 when the first artificial Earth satellite was launched. International space law regulates human activities in outer space. The United Nations have adopted a number of resolutions embodying recommended standards of activity in relation to outer space. Outer space is a terrain where primitive sensual experience of the human takes a bend. There is no spatial quality in the sensual perception of a human being. Space perceptions may fail to correspond to reality. Not all of them are veridical. The bend in perception is attributable to primary gravitational effects.

Outer space is an excellent realm for power multiplication to the extent that the old saying, *he who rules the seas will conquer the world*, can be changed to, *the one who rules the outer space will rule the world*.³⁷ During the presidency of Ronald Reagan, the United States propounded the theory of strategic defence initiative (SDI) taking into consideration the terrain specificity of outer space for military operations. His proposal on 23 March 1983 was aimed at defending the United States from the potential threat of intercontinental ballistic missiles (ICBM). The SDI was turned around later.

In course of time, it is destined that outer space will be imbibed even further into reality life on a day-to-day basis, with commercial space flights originating from Earth. The business in outer space will involve anything that the human mind can develop and will obviously add to security risks when individuals and

syndicates with other than national objectives get into it. There could be many space related subjects and business concerns including floating and orbiting hotels and holiday resorts.³⁸ Currently, the craze is for bases on the moon with specific interests expressed by nations. According to a report, the possibilities are on Mars and the moon. It is estimated at about 30 years for Mars (2035) and seven years for the moon (2012).³⁹ The current interests in moon missions include research, military, economical and development by testing new age technologies. The parties in the list are China, the European Union, India, Japan, Mexico, Russia and the US.⁴⁰ Ultimately, expansion of the terrain will be based on economics and its limitations.

Cyberspace

The root, “cyber” originated from the word cybernetics meaning the theoretical study of control processes in biological, mechanical and electronic systems. Cyberspace was an imaginary domain originally invented by a science fiction author (1984) William Gibson, and mentioned repeatedly in his writings. It was only a matter of time when the domain became a reality with the advancement of information technology and reaffirmed with the introduction of the greatest web of all, the Internet. Cyberspace, in the imagination of Gibson, was a computer-simulated reality that showed the nature of information, foreshadowed by virtual reality technology. It is considered the author’s major contribution to the genre.⁴¹ In the initial days of the author’s publications, the term cyberspace was widely discussed and debated in public. By 1995, there was a growing consensus that cyberspace could significantly affect the structure of the economies of nations, the development of communities and the protection of citizens.⁴² The boundaries of cyberspace are still expanding to envelope human activities of all sorts.

Genome

The genomic world is modern. But, it has records of human beings identical to us that walked the earth in Central Africa 60,000 years ago. Genetics grew as the cutting edge science only recently. It has opened up a rare insight into a never-seen-before terrain that may affect the future of humans in a way that was never envisaged—the genome.⁴³ It will be the next revolution in human development after information technology and the knowledge age that the world is currently creeping through. It will be an amazing age and could even be a more dangerous one. The revolution is just waiting to explode. Genome is the micro world of DNA—deoxyribonucleic acid that carries information, which determines individual hereditary characteristics. The DNA is identical for all organisms. It is the sequencing of DNA that makes the difference between the organisms. The genome is the complete set of DNA of an organism or more specifically, of a life form. That is the terrain humans are invading for knowledge about the process of life itself. They have made enviable progress in this regard making the genome a separate terrain itself.

Mindscape

The human mind is a veritable field. During the Cold War studies in the United States and Soviet Union explored the possibility of using the much-hyped theories of extra sensory perception (ESP) of telepathy, psychokinesis, etc. to invade the mind of the enemy under deceit. The research on similar topics still continues. The human mindscape is constantly targeted in information warfare, misguided propaganda and psychological operations besides attempts to control it using electromagnetic energy. The implications of such mindscape trackers are chillingly real. Mind control has the potential to become the most dangerous non-lethal weapon of the future. Some even count it as a new entry in the list of WMD. On the other hand however, it is doubtful whether human mindscape will ever evolve into an independent terrain. It could be argued that mindscape is not a terrain, but a faculty for human evolution. The argument originates from the assumption that it has its own self-regulated ways of retaining balance by the identified concept of spiritual security. In all proximity human mind will function by default and the concept of national security can feed it in a limited way by providing the maximum possible apparent security and supporting spiritual security inputs. Mindscape is not considered as a separate terrain for the purpose of this book. But the terrain may find a place if the emerging concept of 'Intellectual Security' qualifies for an element of national security.

TERRAIN HIERARCHY AND THE FUTURE

Terrain hierarchy is the way in which terrains have been identified with respect to their evolution. The interesting findings are:

- (a) Terrains evolved along with human development
- (b) They evolved into positive consideration one at a time in a sequence
- (c) The time gap between activation of each terrain was considerably long
- (d) The gap between the evolutions of terrains has been narrowing
- (e) No terrain has become unimportant in the process of development
- (f) The importance of identified terrains is increasing
- (g) Geophysical terrains already existed; only their development took time
- (h) Non-geophysical terrains are evolving along with developments therein
- (i) Terrains evolved one at a time at their own pace

In Figure 6.1, the terrain hierarchy is seen against the period in which the particular terrain assumed prominence as identified in this book. The land, being the place where humans live, is the basic terrain; the rest of the terrains evolved consequently.

Figure 6.2 gives a hypothetical picture of the hierarchical concept based on the evolution of terrains on an inverted time frame, with the earliest period at the base.

Terrains encompass national security with overflowing elemental activities, though some of the elements may not exist in a particular terrain. The fresher the terrain, the lesser may be the number of elements involved in it directly.

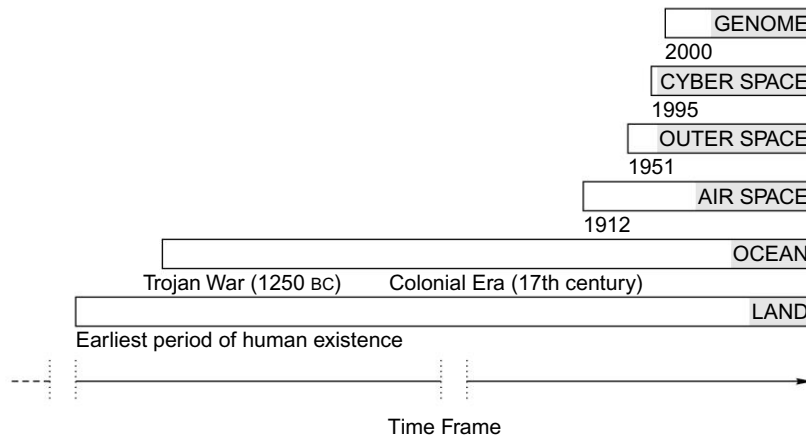


FIGURE 6.1 Evolution of the Terrain Concept

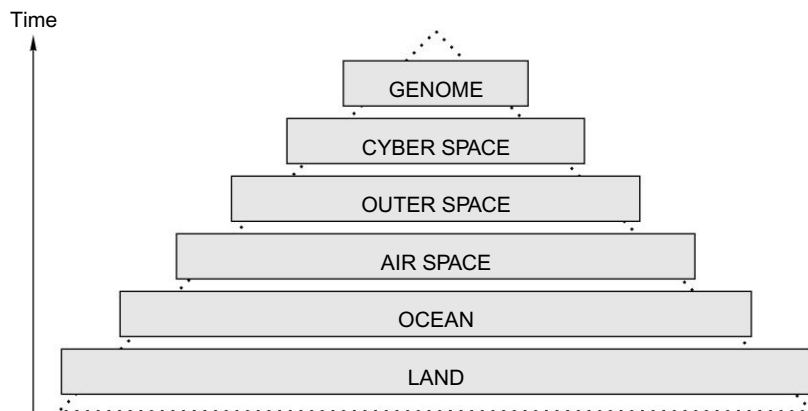


FIGURE 6.2 Hypothetical Hierarchy—the Terrain Concept

TERRAIN SPECIFICITY AND APPLICATION

All these terrains are domains of intrigue in one way or another. Within this intrigue, humans continue to explore them. The concept of terrain specificity examined here is against the contemporary beliefs, but within the sphere of influence and application for decision-making and operational execution for national security. What is identified as a terrain is a constant entity that has the characteristics of continuity and interconnectivity. These domains are of specific nature on which the operations are sustained. These are land, ocean, air space and outer space, and emerging entities such as cyberspace and genome. Any programme for upgrading national security standards will have to go through all these terrains, either jointly or independently. Each terrain is distinctive with its multi-characteristic influence on human affairs. The concept of terrain specificity, is with respect to a specific

problem that needs a solution. The terrain is the domain in which the activities will unfold. Terrain specificity is imperative for strategic assessment as well as planning manoeuvres. Developing a strategy without understanding the terrain can cause difficulty in its application.

TERRAIN ADVANTAGE

Terrain advantage is a term used to define the strategic aspects of a particular terrain, whether geophysical or non-geophysical, to a particular nation. The term terrain advantage mentioned in this book deals with the concept of viewing a terrain from its positive and negative aspects as a whole for a particular task associated with national security. A positive advantage is supportive to the nation whereas, a negative advantage is non-supportive. They are variable expressions relative to national security perception. An interesting aspect in the study of terrains is that a negative aspect of a terrain could also lead to positive advantage. For example, a snow-clad mountain where an operation is difficult will also be difficult for infiltrators to create a breach in border security. A heavy weather condition at sea may prevent a piratical attack or make landing by sea difficult for transnational criminals. This is equally applicable to non-geophysical terrains too.

CONCLUSION

Terrain is the domain where strategists play. It has to be identified before the game begins. In national security, there are geophysical and non-geophysical terrains. Land is the original terrain and the basis of all other terrains, since humans are based on it. They need appropriate platforms or interfaces in other terrains. The concept of terrain is important in the study and application of national security. As a physical terrain, the entire Universe spanning 156 billion light years in diameter (may change dimensions when studies progress further) is theoretically speaking, at the disposal of the tiny bipeds of the planet Earth.⁴⁴ That is at the ultra-macro level. But at a less reduced level, there are terrains where the games are played. Terrain advantage plays a key factor in resolving problems, provided it is appreciated correctly. This facet is applicable to every perceivable terrain, whether geophysical or non-geophysical.

Notes

¹ *Encyclopaedia Britannica, Ultimate Reference Suite*, CD-ROM, 2004. Sun Tzu was a Chinese military strategist of the 4th century BC. *Art of War* (Ping-fa) was the earliest known treatise on military science and war.

² Chow-Hou Wee, Khai-Sheang Lee, and Bambang Walujo Hidajat, *Sun Tzu: War and Management—Applications to Strategic Management and Thinking*, Addison-Wesley Publishing Company, Singapore, 1996, p. 16.

³ *Ibid.* p. 24.

⁴ Here the word “advantage” does not mean positive benefits alone. It also includes the word disadvantage, which in tactical expression is, reduced advantage. When terrain advantage it decreases below hospitable limits, turn the terrain hostile and further down, inaccessible. All these can be expressed in a model by indexing the term “terrain advantage” at varying degrees.

⁵ Wee, n. 2, p. 272.

⁶ *Encyclopaedia Britannica*, n. 4. Carl (Philipp Gottlieb) Von Clausewitz was a Prussian general who in his work *On War* advocated total war that meant attacking everything about the enemy—territory, people and property. His work is the subject of a major study in military strategy. An important aspect of his work is his explanation of *Coup de Oil*.

⁷ *Encyclopaedia Britannica*, n. 1.

⁸ Examined further in the chapter on its terrain applicability.

⁹ *Encyclopaedia Britannica*, n. 1. Vladimir Ilyich Lenin was the founder of the Russian Communist Party (Bolsheviks) and the revolutionary leader in the Bolshevik revolution (1917). He was the first head of the Soviet State (1917–1924).

¹⁰ *Encyclopaedia Britannica*, n. 1. The author of the Communist Manifesto, the most celebrated document in the history of the socialist movement.

¹¹ *Ibid.* German socialist philosopher and the closest collaborator of Karl Marx in the foundation of modern communism.

¹² *Ibid.*

¹³ Geoff Demarest, *Geo-property*, Frank Cass, London, 1998, p. 22, as quoted by Theodore Roosevelt.

¹⁴ *Encyclopaedia Britannica*, n. 1. Julius Nyerere (1922–1999) was the first prime minister of independent Tanganyika (1961). The author feels that his name is permanently associated with the country; hence the usage, Nyerere’s Tanzania.

¹⁵ John Stackhouse, *Out of Poverty*, Penguin Books, New Delhi, 2000, p. 72.

¹⁶ *Encyclopaedia Britannica*, n. 1. Pearl S. Buck was an author noted for her novels on China. She was awarded the Nobel Prize for literature in 1938.

¹⁷ Pearl S. Buck, *The Good Earth*, Jaico Publishing House, Bombay, 1943. Wang Lung, the key character of the book rose from a simple unpretentious Chinese farmer to a wealthy landowner, glorified on the earth he worked that was more important to him than everything else. But, between his love for his land (the terrain) and life stood every perceivable constraint—flood, draught, pestilence and revolution. The book traces the cycle of life of the Chinese peasant and his family against the terrain of earth from the viewpoint of a peasant. Life ultimately ends up with meagre rewards against the agony. Wholesome well-being has its limitations and it performs on a terrain.

¹⁸ *Encyclopaedia Britannica* CD-Rom, 2001.

¹⁹ *Encyclopaedia Britannica*, n. 1, and www.gatewayno.com. Louisiana, purchased from Napoleon’s France on 30 April 1803 was an important event for the United States with great strategic advantage. It was the greatest land bargain in US history. 2,144,520 sq km of land was purchased at less than 3 cents per acre. At the same time, it was the best sale for Napoleon. He needed money and troops to face renewed war with Great Britain and Louisiana was not of much use in his strategic plans.

²⁰ Geoffrey Blainey, *A Short History of the World*, Penguin Books, New Delhi, 2000, p. 24.

²¹ Rodney Castelden, *World History*, Parragon, London, 1994, pp. 3–6.

²² Ibid. pp. 6, 9.

²³ Ibid. pp. 30–31.

²⁴ Ibid. p. 31.

²⁵ Ibid. pp. 41–43.

²⁶ *Discovery Channel*, TV Quiz, 2002.

²⁷ Compiled from the Internet, FAO, and Indian Coast Guard sources.

²⁸ Ibid.

²⁹ Prabhakaran Paleri, “*Changing Concept of National Security and a Maritime Model for India*,” Doctoral dissertation, Department of Defence and Strategic Studies, University of Madras, Chennai, February 2002, p. 137. First introduced by the author in his article, Maritime Security and the Concept of Ocean Property, *Journal of the Society for Indian Ocean Studies*, Vol. 10, 1, April 2002, pp. 15–25, and subsequently in his book, *Role of the Coast Guard in the Maritime Security of India*, Knowledge World, New Delhi, 2004, pp. 90, 103–107. The concept of ocean property constitutes living and non-living resources, ocean advantage, ocean environment and oceanic islands that a nation has in its maritime zones.

³⁰ Montgomery C. Meigs, *Slide Rules and Submarines*, National Defence University Press, Washington, DC, 1990, p. 3.

³¹ The Wright brothers, Wilbur (1867–1912) and Orville (1871–1948) invented and flew the first practical aeroplane on 17 December 1903.

³² In this attack, terrorists crashed their hijacked airplanes against the World Trade Centre in New York and the Pentagon in Washington DC, causing heavy casualties and spreading terror.

³³ *Encyclopaedia Britannica*, n. 1. Douhet Giulio was in charge of Italy’s first aviation unit from 1912 to 1915. He was responsible for getting the three-engine Caproni bomber for the unit during the First World War. He grasped the potential of air power and used it wherever he could. He was court-martialed and imprisoned for being a critic but when the Italian defeat in the war was analysed, it was found that Giulio was right. His conviction was reversed and he was appointed head of aviation service.

³⁴ Advertisement by the Confederation of Indian Industries in *The Hindu*, Chennai, 7 February 2005, p. 21. Marshall Ferdinand Foch (1859–1929), the French strategist was quoted as saying in 1911, *airplanes are interesting toys but of no military value*. He was the commander of the Allied forces at the closing end of World War I and much credited for the Allied victory.

³⁵ Institute for National Strategic Studies, *Strategic Assessment 1999*, National Defense University, Washington DC, 1999, pp. 301–308.

³⁶ Ibid. p. 301.

³⁷ Prabhakaran Paleri, *The Dynamics of Power Projection in the Geostrategic Context*, Long Essay, (Unpublished), National Defence University, Washington, DC, 1994.

³⁸ Aditi Khanna, “Virgin Plans to Offer Space Flights by 2007,” *The Asian Age*, New Delhi, 28 September 2004, p. 1.

³⁹ Kalyan Ray, “All set for Chandrayan,” *The Deccan Herald: Economy and Business*, Bangalore, p. IV, 13 December 2004.

⁴⁰ Ibid.

⁴¹ *Encyclopaedia Britannica*, n. 1. It appeared in Gibson’s book *Neuromancer* (1984).

⁴² Ibid.

⁴³ The author feels that the terrain of genome is just the beginning of diversion of terrain specificity into the biological realm. It is poised to grow further in the distant future where the entire aspect of biosciences may come under the bioterrain into which the genome will assimilate, taking along with it the element of genomic security with others related to health—health security, food security, environmental security, etc.

⁴⁴ “Full Measure of the Universe,” *Hindustan Times*, New Delhi, 26 May 2004, p. 19. As known now from the primordial radiation imprinted on the cosmos that it is 13.7 billion years old.

Part Two

Analysing the Elements of National Security

The centre of gravity of national security is embedded in its elements.
For this reason, it is necessary to understand them and
their interactive geometry completely.

The elements are the constituent parts of the concept of national security. Though independent in character, they are mutually inclusive with strong interactive geometry. They evolved in the course of time along with need based human developmental processes. Some of them may break off or transform in the course of time. New elements may spring up. There are no indicators of such change today. Understanding the elements clearly is important in planning for national security under strategic wisdom. A commonly observed flaw in national security is the absence of a holistic approach in its governance, including consistency in monitoring. This often occurs because of:

- (a) Mistaken identification of elements
- (b) Incorrect appreciations of cross elemental effects
- (c) Focus shift from elements to conditions and other non-elemental aspects
- (d) Neglect of the interactive principles of elements
- (e) Wrong perception of centres of gravity of each element and their shifting nature in an interaction
- (f) Wrong perception of the centre of gravity of national security at a particular time
- (g) Inaccuracy in threat perception and assessment
- (h) Inability to pre-empt or engage a threat
- (i) Bias in planning for national security management
- (j) Interruptions in monitoring the path of the threat to the target
- (k) Complacency when there is a need to be alert

- (l) Prioritising outcome before process in national security matters
- (m) Unusual haste in diagnostic conclusions
- (n) Disruptions in governance
- (o) Importance of political priorities over national security
- (p) Power maximisation goals interfering with those of national security
- (q) Insufficient knowledge base in governing national security
- (r) Bureaucratic conflicts
- (s) Chance induced shifts in governance

While governing national security, the entire chain of elements of national security has to be taken as an integrated unit. The interactive matrix of the elements has to be considered seriously. The changes in the centre of gravity related to each element need to be seen regularly in order to modify the plans for governing national security. General assumptions related to the elements and their governance are:

- (a) Each element is equally important in the chain of national security governance
- (b) The hierarchy of elements is only a matter of knowledge convenience arrived at based on the appreciated period of their entry
- (c) The elements do not fall within a table, but in an ever-expanding continuum until they attenuate themselves; new elements may join the continuum
- (d) None of these elements is likely to be dissolved in the near future
- (e) There are chances for more elements to join the chain in the future
- (f) The elements are stand-alone entities with strong affinity to each other in their interactive matrix in which an effect on one element may reflect on the other
- (g) The interactive matrix is time variable and therefore, a decision may change with respect to time
- (h) The elements demand a country specific approach; the method of governance adopted by one nation for maximising national security may not be suitable for another
- (i) In national security maximisation, it is the nature of governance that matters, not the nature of government. It is only a general appreciation that democracy is a better choice because the blame could be evened out among the people
- (j) Each element has its centre of gravity, which ultimately contributes to the resultant centre of gravity of national security. The centres of gravity of elements may shift with respect to the period in time as well as the country
- (k) One of the ways of governing national security is by inducing shift in the centre of gravity to effectively manage it
- (l) When it is a question of maximising national security professionally, the subject is “national security governance”

- (m) National security is about winning, not defeating. Most of the time it is possible by creating a win-win situation with respect to its elements. It is the preferred method. The next choice is win-hold-win method, but never the win-lose method
- (n) Deception and coercive diplomacy can be damaging to parties
- (o) Outsourcing diplomacy and other geo-strategic techniques can be unpredictable and costly

In this part the elements of national security are examined more critically.

7

Military Security

If there is an antithesis to war, it is war itself.

No other forms of life except humans, go to war—an intensely offensive behavioural action within a human system. Against this background, military security means preventing and suppressing alien invasion with the use of military force by combat or preventive deterrence. A nation needs to set up and equip a military if it appreciates a threat to its sovereignty and territorial integrity. In the “civilised” world, the laws of war, i.e. the laws that govern the actual conduct of an armed conflict (*jus in bello*), govern war. The laws of war do not refer to the rules governing armed conflicts (*jus ad bellum*). The laws of war¹ are applicable only to those related to declared wars. There are authors like Ingrid Detter, who prefer the term “law of war” and not “laws of war” since the rules are homogeneously applicable to the modern state of war.² Detter defines war as, *a sustained struggle of the armed force of certain intensity between groups of certain size, consisting of individuals who are armed, who wear distinctive insignia and who are subject to military discipline under responsible command*.³ In the early days, wars were classified as limited wars in a restricted area, and total wars at a global level. While the concept of total war has dissolved slowly since the Second World War and formation of the United Nations, limited wars have continued in various parts of the world. Revolution in military affairs (RMA) changed warfare. Asymmetry between parties also brought changes in limited wars leading to undeclared wars and other forms of conflict situations. Nuclear weapons created the fear of proliferation with a forewarning of assured mutual destruction. Unprecedented fear caused everybody, who could afford it, to run for the bomb instead of renouncing it under enlightened wisdom. Stalin (1879–1953)⁴ acquired the bomb in 1946 through research in ten secret cities collectively called the Atom Grad. The race for the bomb has spread beyond treaties and regulations under the perception of assured military security. Ironically, the nuclear bomb is nothing but a weapon. The question is, “what use is a weapon, if it can never be used?” A weapon is a tool for attack or defence. Defence also means preventive deterrence. A nuclear weapon may carry factors of deterrence but it is still more an agent of threat than a weapon. Handling such agents is different from handling weapons.

From the theories on war and strategy, it can be seen that all combinations of the threat matrix cube are involved in military security. There are signs that attitudes towards war are changing and war may become a non-desired human activity in course of time.⁵ International relations and public opinions may reach new lows questioning the ethics and national strategies of those involved in war. According to Jane's publication,⁶ lack of first hand experience of the politicians and civilians on military matters is the biggest single change since the Second World War.⁷ Growing affluence and civility have reinforced the feeling, at least among part of the population, that wars are barbaric. In his work *War and Our World*,⁸ military historian John Keegan ponders over the question whether the concept of war is dying out. Keegan feels that the worst wars are behind us. He compares them with the great famine and plague that once threatened to eradicate human life on earth. His examination leads to the conclusion that wars will no more be a threat to humankind. But in spite of global abhorrence, wars still continue.

ABOUT MILITARY SECURITY: THE FIRST ELEMENT⁹

Historically, wars were fought for resources. The purpose deviated to colonisation, political survival, nomadic violence, power projection, religious conversion, resource mobilisation, succession, economics, domination and at times, sheer vindictive behaviour. Today, military security means maintaining the nation's physical security, economic interests and values against foreign aggression. The subject of national security itself is not about peace or war; it is about the well-being of people. The concept of peace is totally abstract. Peace is cited in tandem with war and therefore, explains a condition—absence of war. The situations with respect to military security could be better stated as war, and other-than-war situations, rather than war and peace situations. In the human system where conflict is ingrained, peace or paradise on earth as it is perceived, is simply unattainable. Human beings are not designed that way. The closest approach to peace is when it is talked about as a “situation without war, disputes and conflict.” Such a state has to be enforced. Hence, it is the United Nations dictum of peacekeeping, peacemaking or peace enforcement that is more appropriate to the usage of peace than what wishful thinking for peace can provide. The rule of law contributes to peace enforcement but peace as perceived is an unattainable objective. This book may even argue that “peace breaking” is sometimes necessary to control social depression like breaking soft ice to prevent an avalanche in a ski resort. Peace, the way it is perceived is strictly an impossible as well as imperceptible objective—it is a different subject not further elaborated in this book.

WAR IN HISTORY

The colour of war is red; the odour is of putrefied human blood and body fluids. The pattern of war has changed with time, but nothing else. The whine of agony

of the wounded and those waiting for the return of their beloved from the battlefields echoes the world over. War in its active form, emerged around the third millennium BC when pastoral societies developed counter attack forces to respond to savage raiders, though people fought in disorganised clusters even before that. By about 1,300 BC, the first military empire emerged in Assyria. By the 19th century, it was felt that state and war were inseparable. The revolutionary French Republic set the pattern of compulsory military service. But lately, war and militarism seem to have lost legitimacy. War with its punishing duration and unparalleled destruction of life is despised the world over. While the world felt that major wars were almost history, the opening shot of the 21st century showed otherwise. The revival was caused when terrorism, already well established as the poor world's asymmetrical warfare against the more powerful, widened its jaws a bit more than it could snap back. The jaws got dislocated and the world went frighteningly hysterical at the gaping mouth of terror. That led the relatively powerful nations to take to war on terror. Terrorism became yet another reason for war. Albeit the feeling against it, war is expected to be the primary organised human activity that will shape their destiny as the most powerful arbiter of change in the human system. Table 7.1 shows the period classification of warfare and changes in the profile of military security.¹⁰

TABLE 7.1 Period Classification of Warfare

<i>Period</i>	<i>Changes in Military Security Situation Profile</i>
1. Prehistoric wars	BC; anatomy is not clear to analyse change
2. Wars till 1648	Birth of nation-states
3. Inter-period 1648–1919	End of World War I; birth of the League of Nations
4. Inter-period 1919–1945	World War II; nuclear weapons; beginning of Cold War; birth of the United Nations
5. Cold War (1945–1991)	Disintegration of Soviet Union
6. Post Cold War	Till major changes in the UN will take place
7. Post changes in the UN.	Based on the High-power panel recommendations (2004)

Prehistoric Wars (BC)

Though it is believed that the ancestors of today's human beings fought for hunting grounds as early as 37,000 years ago,¹¹ the first war said to have made a difference in human conscience was the Trojan War between the Mycenaeans (Greek) and the Trojans (the people of Troy in western Anatolia). The war that was said to have occurred in 1,250 BC lasted about ten years. There is no proof that it was real but it shows the way wars were fought in those days. The cause of war was attributed

to avenging a personal loss of esteem and respect. The invaders won the war by deception—soldiers hiding in the not-so-soft underbelly of the wooden horse that was pulled in by the superstitious Trojans (a case of the target guiding threat under deception). Deception was the cheapest and easiest tactic. Though it requires cutting edge tactical acuity to succeed, deception takes away the ethics of human value and code of honour from war. In the modern world, deception is a cheap strategy and not acceptable under the principles of geostrategic security. In the long run, deception causes permanent damage in international relations.

Whether mythical or real, it was a wholesome war fought with a superficial objective of avenging a wrong with a hidden objective of empire building. Terrain specificity was evident in the sea-land war with a massive sealift. The hunger for domination and the way for coalition were explicit. Some of the members joined under coercion. There was violation of ethics, abuse of prisoners, misdirected killings and above all, deception as the key to victory. A (dirty) war, indeed! The Trojan angle showed the importance of defence in warfare. For the victorious coalition, it was reached through two different terrains. It also showed how naval power influenced ultimate victory from the earliest known period of warfare. The situation may change in the future with outer space replacing the sea in reach and stealth. In a nutshell, warfare has nothing new to flaunt. Every character and the aspect of the legendary Trojan War are repeated today.

Larger wars are recorded from 5th century BC. The largely famous Peloponnesian War broke out between Athens and Sparta in 431 BC. The war lasted 28 years. It was the period of freethinking philosophers. Socrates was among them. There was already a decree against atheism issued against the philosopher Anaxagoras (500–428 BC)¹² who had to leave Athens. The port of Athens and other neighbouring parts faced a serious problem with the outbreak of a killer plague. Death and social impairment seemed to have a choice. The people slaughtered thousands of visitors to Athens attributing the cause to them. It was also the period of Hippocrates (460–377 BC) regarded as the father of medicine. The effect of the war and plague was so chaotic that the Athenians lost faith in the gods and the rule of law. The sea-land war¹³ ended temporarily in 421 BC. Peace was negotiated by king Pleistoanax of Sparta and Nicias, an Athenian mine owner. There was also hostage taking by Athens. The Athenians surrendered in 401 BC.¹⁴

War, became a prolonged affair in the absence of powerful regulatory forces. War came along with other miseries including deterioration of food and health security. An interesting find is that in a disaster scenario (a pandemic in this case) people lose faith in their gods and contemplate change. Another interesting aspect is how non-governmental players influence war and its outcome. The Peloponnesian war reinforces dependence on the navy for logistics movement en masse.

The Punic War between Rome and Carthage was fought in three phases: 264–241, 218–101 and 149–146 BC. This too was land and naval warfare. In the second Punic War, the Carthaginian General Hannibal's (247–183 BC) army slaughtered 16,000 Romans in Lake Trasimene that became red with their blood. In 216 BC,

Hannibal annihilated a Roman army of 70,000 by slaying 50,000 of them with the sword, the weapon that was most user-friendly but for reach and reusable.¹⁵ The war that lasted more than a century ended with victory to the Romans. 50,000 Carthaginian men, women and children were sold into slavery. Cruelty, death and mayhem became part of the lexicon of war.

Wars were meant to kill since early days. The best way to dispose of captured adversaries was to slaughter or sell them as commodities. It was easy. Selling them generated income for another war. Is there a change?

Wars between Prehistoric Period and Pre-nation-state

More than a thousand years later came the Crusades. There were four phases in short bursts: 1096–1099, 1147–1149, 1189–1192 and 1202–1204. The crusaders with the support of the prevailing religious order were engaged in plundering, raping and killing, along the way they advanced. It became a way of life. Each crusade lasted two to three years at a stretch and was fought between the Saracens¹⁶ and the Christians over Palestine. A close look at history shows the crusades still continue in a different form.

After a gap, war became a way of life. The cause did not matter, though religion gave it the perfect excuse. Opportunity to indulge in carnal pleasures of wild sex, pain and sadism besides beastly freedom of the savages increased the demand for war.

The Hundred Years War started between England and France in the English Channel in 1336. It was a continuous struggle between England and France thereafter to take over possession of the channel and each other's territory. Generations of kingdoms challenged each other. The world moved on with wars of relatively smaller magnitude elsewhere. Empires were being built by conquest and surrender. Around 1348, plague made a reentry in Europe. This time it was known as Black Death. Italy, France and England were under its grip. Jews were accused of poisoning the wells and spreading Black Death. Thousands of Jews were publicly prosecuted by burning or hanging to death. The Jews in Europe had begun to remain the victims of persecution from then on ending in the holocaust many years later. The first phase of the Hundred Years' War ended with the Treaty of Bretigny in 1360. King John II of France was kidnapped and then released by England for a ransom. Even then he had to leave behind three of his sons as hostages. He had to return to England when he failed to raise the ransom of three million gold crowns. In 1372, Charles V of France regained control of the channel. In 1396, Charles VI made a truce with England that lasted for two decades. France recovered slowly from the defeats and Charles VII gained more control over England by 1436. By 1451, the English were expelled from every part of France except Calais.

Powerful territories vied for domination especially when caged with feeling of smallness of land terrain they possessed. This was passed on to generations. Hostage taking for ransom and acts of intimidation became common practice. Royalties lived and died dangerously

accumulating wealth, and fat and flatulence as accompaniments. Enmities persisted beyond generations in history. Select communities were persecuted attributing blame by ignorance.

A series of French civil wars were set off in 1562 when François Duc de Guise ordered the massacre of Huguenots (French Protestants) at Vassy. The Huguenots retaliated by murdering Catholic priests. In 1563, peace was temporarily restored between both parties with the murder of the Duc de Guise by the Huguenots. The trouble between the Huguenots and the Catholics brewed in serious disorder. 15,000 Huguenots were brutally murdered in France in 1572. It continued till Henry IV by the Edict of Nantes gave Huguenots political rights equal to that of the Catholics in 1598.

Cruelty in war touched unseen limits. Besides wars between religions, those within a religion became another cause to celebrate cruelty. It continues today—the clashes within a civilisation. They are old forms of entrapped human behaviour and assertions that wars cannot be easily eliminated from the world full of humans.

On 23 May 1618, with the defenestration of Prague, the war that created nation-states at the end of it all began in Europe. It started when the future Holy Roman Emperor Ferdinand II, in his role as king of Bohemia, attempted to impose Roman Catholic absolutism on his domains. The incited Protestant nobles of both Bohemia and Austria rose up in rebellion. The war that later came to be known as the Thirty Years' War went beyond religion and was also fought by hired mercenaries.¹⁷ It became a series of wars fought by numerous territories in Europe for different reasons: religious, dynastic, territorial, political, commercial and others. It ended with the Treaty of Westphalia in 1648. The treaty changed the map of Europe irrevocably.

The wars saw new recruits who did not have the true identity of the side they were fighting except for paid enlistment—the mercenaries. They were the pros. Their generations continue today as a breed of hired bands of illegitimate soldiers, especially in asymmetrical wars across the world. But the end of the Thirty Years' War brought permanent and long lasting changes along with rays of hope that the future would be orderly and safe. Subsequent event, however, show that a nation-state does not have the competence to abolish war as long as it is ingrained in the human psyche.

Inter-period 1648–1919

During the period of Westphalia, the English Civil War (the Great Rebellion) between Cavaliers and Roundheads, which started in 1642, was coming to an end. In 1649, the English monarchy was abolished when Charles I was renounced after his secret dealings with the Scots became known, and the Parliament set up a Commonwealth run by a Council of States.

Economics, ransom and internal conflicts slowly found their way into human conflicts graduating into full-scale wars. Secret negotiations and scandals startled the people.

In 1689, Louis XIV of France engaged in the War of Augsburg that lasted eight years against an alliance led by England, the United Provinces of the Netherlands and the Austrian Habsburgs. Louis XIV was aiming at a shift in balance of power to France when the rival Hapsburg dynasty was to be left heirless with the demise of their insane king Charles II. The war saw the rise of England and Austria as effective counter forces to France. Louis XIV's expansionism and hatred towards Protestants made him many enemies. When he died, his body was borne and jeered by the populace. France was heading for a revolution unnoticed.

Wars within religion, and alliances (coalition) in warfare became permanent affairs. Geostrategic mindset slowly developed at least within the roundels of perceived nation-states.

The Great Northern War between Sweden and an alliance of Russia, Denmark, Poland and Holland for supremacy in the Baltic area began in 1700. The anti-Swedish coalition made swift victory and occupied most of the Swedish area. Sweden opened peace negotiations in 1717–1718 while simultaneously expanding its army in anticipation of a new offensive. By the Treaties of Stockholm (1719–1720), Sweden, Saxony and Poland returned to the status *quo ante bellum*, and Denmark gave back its conquests to Sweden in return for a substantial sum of money. Sweden ceded most parts to the coalition countries by 1721. The war between Spain, France and Bavaria on one side and England, Holland, Austrian Empire and Portugal on the other, later known as the War of Spanish Succession broke out around the same period (1701–1714). Louis XIV had already engaged in the War of Augsburg for the same reason, much earlier and withdrawn by military, political and personal decline at the end of it. When he died King Charles II had already bequeathed the Louis XIV's grandson who remained king of Spain, but the treaties of Utrecht marked the rise of the power of Britain and the British colonial empire at the expense of both France and Spain. In this latter aim he failed, for his death led to the War of the Spanish Succession and the dismembering of Spain's European possessions. The succession wars continued. The War of Polish Succession (1730–1738) was fought by Russia and Poland with France. Though it was a conflict to determine the successor of the king of Poland Augustus II, it was only a pretext for the parties to settle other issues. The war resulted mainly in a re-distribution of Italian territory and an increase in Russian influence over Polish affairs. The war ended with the treaty of Vienna in 1738. Two years later, in 1740, the next succession war erupted in Europe—the War of Austrian Succession. The war was between Austria and Britain, and Prussia, Bavaria, France and Spain. The War ended in 1748 with the Treaty of Aix-la-Chapelle. Colonialism too had its share of wars between countries in alien terrains. The Seven Years' War started in Europe in 1756 by Prussia supported by Britain against Austria, France and Russia, ended abroad in the colonial world against overwhelming odds in 1763. The British triumphed completely over France in India and America and gained substantial territory in the colonial world, including Africa.

The wars started reaching out with the advent of colonialism in the world and states fought elsewhere in their occupied colonial territories. Today it still continues in a different colonial form restricted to the powerful.

After the Seven Years War (1756–1763) the British felt confident on their colonies especially in America, to make them pay more tax. That aroused heated opposition. British intransigence to their grievances provoked the Americans to fight for independence in 1775. On 4 July 1776, the American Declaration of Independence was signed in Philadelphia. The conflict ended with the Treaty of Paris on 3 September 1783 and 13 of Great Britain's North American colonies went on to form a new nation—the United States of America.

It was a war that triggered the journey of the United States to the position of a superpower¹⁸ today. It took two centuries with a major conflict in between—the Civil War (1861–1865) and exceptional sacrifices by its people. No other nation in the world has suffered so much and at the same time benefited by certain definite advantages—convenience of time for an early start (the early bird syndrome), geo-location, brand new citizens ready for empowered governance, and freedom and will of democracy without shackles of ingrained traditions and restless history that fetters free thinking and will to perform. If these are the ingredients to become a superpower, it is not easy for any other nation in the world to place their bet in the roulette machine for the slot of the powerful deposing the United States, whatever the strategic soothsayers may predict. No way, guys! But there is a caution for the United States—history stores many surprises.

The Napoleonic Wars of 1793–1815 were massive campaigns in terrain expanse, logistics support, cost of operations and personnel. They were continental wars. It ended in 1815 in the Battle of Waterloo when the British with their allies (Austria, Sweden, Russia and Prussia) defeated Napoleon and their supporters. Napoleon's defeat helped Britain to dominate much of the world for a century thereafter.

Colossal wars made strategists like Clausewitz and Jomini discover their analytical prowess about war and strategy.

The Greeks fought with Ottoman Turkey in the War of Independence in 1821. Greeks of all classes nurtured Hellenism, the sense of Greek nationality. Revolts broke out against Turkish rule in January 1822. Egyptian sea power supported Ottoman Turkey. The Greek cause however, was saved by the intervention of European sea powers. A settlement arrived with the adoption of the London Protocol in 1829. Greece became an independent monarchical state.

Nationalism was taking root in military affairs; sea powers continued flying their flags at sea.

The American continent witnessed its own major wars. In 1846 war erupted between Mexico and the United States when the former refused to sell New Mexico to the United States. But the Mexicans were bullied in typical realtor arm-twisting mode by the powerful United States and defeated in the two-year war. The war ended with the Treaty of Guadalupe Hidalgo. Mexico surrendered land equivalent

to approximately a third of its territory north of the Rio Grande to the United States for 15 million dollars. That was cheap.

Grabbing real estate by paying for it was a dictum that worked well for the United States in consolidating its land holdings with strategic wisdom. War was used as more than a rap on the knuckle when the owner of an entity refused to let go of it even on a consideration.

War broke out between the Russians and a coalition of the British, French, Ottoman Turkey and Sardinia-Piedmont in 1853–1856. The war arose more directly by Russian demands over the Orthodox subjects of the Ottoman sultan and a dispute with France over the privileges of the Russian Orthodox and Roman Catholic churches in Palestine. The Treaty of Paris signed on 30 March 1856 guaranteed the integrity of Ottoman Turkey and obliged Russia to surrender southern Bessarabia, at the mouth of the Danube. The war was a moral blow for Russia that awoke to the reality of its backwardness.

Besides nationalism and religion taking up the mainframe theatre of war, the mental isolation of the Russian state was set in motion.

The American Civil War began on 12 April 1861. Abraham Lincoln had taken over as president in November 1860. The disintegration was fast. The battle between the Confederates and the Unionists lasted four years. It also included pitched battles at sea. The turning point came in the Battle of Gettysburg (1–3 July 1863) when the Confederates were routed. When the war ended on 9 April 1865 with victory to the Unionists, it had cost an estimated 618,000 lives. Five days later, Abraham Lincoln was assassinated at Ford's theatre in Washington.

One of the fiery incidents in the history of the United States showed the way the tectonic plates of a new nation would settle down. The birth of a nation and its process to a balanced human system may be violent and ridden with trials and tribulations. It took more than a century for the United States to settle down (1776–1863). This should give a rough estimate of the natural process that goes on in every nation towards stability. Under the law of invariance the natural frequency of the human system remains more or less unchanged, even if superficial changes are highly noticeable. Deep down, change is trivial.

1866 witnessed the Austro–Prussian War also called the Seven Weeks War. The Austrian troops were easily defeated. In 1870, Prussia established its domination further by defeating France in the Franco–Prussian War. The underlying causes of the conflict were the determination of the Prussian statesman Bismarck¹⁹ to expand his domain. When Paris surrendered in 1871 people were devouring everything they could lay their hands on under extreme poverty—cats, dogs, rodents, etc. Louis Napoleon (Napoleon III, Napoleon I's son) was deposed. Germany was united and William I, the Prussian king, was crowned as the German Emperor.

In 1894, provoked by a dispute over Korea, the Japanese forces sank a British ship carrying Chinese troops to Korea. That resulted in the China–Japan War. The Japanese won easily because they were highly modern compared to China. Five years later, in 1899 the Boer War broke out between Britain and Boers (Dutch)

in South Africa. The war lasted three years. President Kruger of the Boer Republic acted to stop the British buying the Transvaal with its gold mines. The Boers lost and sought German support. It ended in 1902 with the Boers agreeing to accept British sovereignty in South Africa. War broke out in 1904–1905 between Russia and Japan. For the first time armoured battle ships, torpedoes, battle guns and modern machine guns of the period were involved in warfare. The Japanese navy bottled the Russians in an attack on Port Arthur in Manchuria, thus instigating them into war. In the end, the Russians surrendered to the Japanese. President Roosevelt of the United States mediated the peace treaty. There was a mutiny on the Russian Cruiser *Potemkin* that followed major concession from the Tsar and included a constitution, a parliament (Duma) and grant of civil liberties. But the Tsar withdrew them one by one in course of time.

For the war-hardened world, the entry of World War I was like any other war. It was sparked off on 28 June 1914 with the assassination of the Archduke Franz Ferdinand, the 51-year-old heir to the Austrian throne, in Sarajevo. He was in a car with his wife when the assassin Gavrilo Princip shot him. Austria used the assassination as an excuse to declare war on Serbia. The war unlike previous wars spread like wildfire across Europe with Germany, Austria and Hungary on one side and France, Russia, Britain and others on the other. Within a year, the war was called the Great War. It involved land, air and naval forces. For the first time, war took to underwater involving submarines. In 1918, the Spanish influenza, a dangerous epidemic spread across Asia, Europe and North America. It originated in China and killed 21,640,000 people—one per cent of the world's population—in a short time. The war ended the same year with victory to the Allies with the signing of an armistice. The war officially ended with the signing of the Treaty of Versailles by the Allied and Associated powers, and by Germany on 8 June 1919. It came into force on 10 June 1920. With a view to end future wars and destruction, the victorious allied powers steered a proposal to create a body for international cooperation. It was the first time a joint proposal for collective security action against an aggressor under an international body was mooted. Geostrategic security was taking a turn towards collectivism by international consensus. The League of Nations was established after the Paris Peace Conference in 1919. But it soon weakened and vanished. The primary reason for this was non-adherence by the United States.²⁰

In the middle of wars that have become habitual to humans, a seemingly innocuous incident flared up a conflict into an uncontrollable frenzy never witnessed before in human history. It brought them not only close to their original mindset of the primates in a reverse order of time, but also warned them of total annihilation if they do not behave. For the first time, the people felt they needed an overseeing body that could save them from themselves. But soon, the product—the League of Nations—was disbanded. The power of war and self-destruction are too overbearing to resist. To think of it all, the mega war of the period was a typical pointer to how clashes within individual human minds can collectively lead to annihilation of the society. It was only two decades to the next big war,

the inter-period before the world reluctantly woke up to the reality of war that, in a sense, is yet to be accepted.

Inter-period 1919–1945

The Russian Civil War had broken out a year earlier (1918) between the Bolshevik Red Army and the White Russian Army. Finally, victory went to the Bolsheviks in 1921. Elsewhere in the world, nationalism continued to migrate. The Spanish Civil War (1936–1939) between the Nationalists (Franco) and the Republicans ended in 1939 with victory to the Nationalists. The same year saw the beginning of World War II. The watershed event of the war came on 6 June 1944. 175,000 soldiers from all over Europe and North America landed on the German occupied hostile beachfront in Normandy in north-eastern France, travelling 60 to 100 miles by water (shades of the Trojan War?) The aim in invading France was to drive occupying Germans into Germany. It was also the first land conquered by the Nazi's that was taken back by the Allies. An armada of 5,000 ships set sail that night from England with 11,000 aircraft flying above. It was a war of a kind that the world had never witnessed before and perhaps, never will. It was the single greatest military event of the 20th century, a study in the deployment of overwhelming force. There were many casualties. US companies that landed at the Omaha beach suffered 90 per cent casualties in 20 minutes. Hundreds of soldiers from their landing craft drowned in the sea. Many of the 17,000 paratroopers were dead before they set foot over the land. But the footholds eventually allowed the Allies to march on to Berlin and bring about the end of Nazi Germany.²¹ Though the landing was the beginning of the end of the war, two nuclear attacks, for the first time in the history of the world, by American bombers devastated the cities of Hiroshima (6 August 1945) and Nagasaki (9 August 1945) in Japan. It was live testing, with more bombs on the line if necessary, rather than decisive attacks to end a world war. Along with innocent civilians, the nuclear arsenal incinerated the psyche of a nation forever and of the civilised world to a considerable extent. The Manhattan Project (1942–1945) of the United States Government had produced the bombs after a successful trial, code named Trinity, in New Mexico on 16 July 1945. The Second World War formally ended on 14 August 1945 with Truman, the president of the United States declaring that the war was over. 55 million people died and 10 million were displaced—the greatest casualty ever in a war in the world. The war paved way for the United Nations with the intent to stop wars in the future. On 24 October 1945, the United Nations replaced the beleaguered League of Nations as a new symbol of hope for humankind.

If anything, World War II re-established the fact that assured mutual destruction and genocide by wars would continue in a human system. Mutual confidence of a nation in another would wane. This assertion was strengthened by the introduction of a nuclear arsenal and establishment of the already existing biological and chemical agents in warfare especially in countering asymmetry. It also brought out the story of holocausts and worse,

the fact that there was no value for a human being in a crowd. The most important revelation perhaps, was the re-invention of the League of Nations in an entirely different form—the United Nations. Will there be another world war? The question is old. Already there was one, following the Second—the Cold War that again divided the world and stalled its order for half a century. It had all the reflections of the Third World War.

Cold War (1945–1991)

Every war fought thereafter till the end of the Soviet Union on the Christmas of 1991 was in the shadow of the Cold War. The first serious war was between North and South Korea (1950). When Seoul fell to the Communist North Korea, the United Nations asked its members to help South Korea. The United States dispatched air and naval forces. Seoul was regained, but 80 per cent of the city was already destroyed. The US bombed dams in North Korea flooding fields and habitats, causing heavy damage to the environment. In 1953, an armistice was signed at Panmunjom, ending the war. At the end, North Korean and Chinese casualties amounted to 1,500,000. About two million civilians were killed in Korea.²² The total estimate was about four million casualties.²³ It was a war in which the United Nations with the United States was the principal participant. China supported North Korea in the war that was finally, inconclusive.

The war brought the newly formed United Nations into limelight increasing its stake in collective military security. The war established the authority of the United States in coalition victory. For the United States, it was an opportunity to establish its containment policy against the communists. It got an edge over the Soviet Union in the middle of the Cold War. The US was already pacing the road to dominion. And it was soon to experience how treacherous it would be by its involvement in Vietnam.

A protracted war was fought between North Vietnam, and South Vietnam and the United States from 1964 to 1973. On 2 August 1964, North Vietnamese patrol boats fired on the US destroyer Maddox in the Gulf of Tonkin. After the US President Lyndon B. Johnson (1908–1973) asserted that there was a second attack on 4 August—a claim later shown to be false—the US Congress almost unanimously endorsed the Gulf of Tonkin Resolution authorising the president to take necessary measures to prevent further aggression.²⁴ The US involvement fanned the fire. The credibility of the United States was at risk more than the independence of South Vietnam. By the end of 1967, it was clear that the Americans were no match to the Viet Cong who depended on stealth, concealment, ambushes and other surprises. Casualties mounted. Public demonstrations echoed in the streets in the United States. When the US announced first withdrawal, there were 540,000 military personnel in Vietnam. By late 1970, the number of US military personnel in South Vietnam had been reduced to 335,000. The peace talks did not progress well. The war ended with the surrender of South Vietnam to North Vietnam. A military government was instituted. On 2 July 1976, the country was officially united as the Socialist Republic of Vietnam with its capital in Hanoi. Saigon was renamed Ho Chi Minh City. The casualties were heavy. More than

58,000 American lives were lost and 303,000 were injured. According to estimates 185,000 to 225,000 South Vietnamese were killed and 500,000 to 570,000 wounded. 900,000 troops were killed and an unknown, but huge number wounded on the other side. Civilian casualty amounted to more than a million. The terrain and its environment were heavily damaged. Much of the population of South Vietnam became refugees. Agriculture, business and industry were totally disrupted. The United States faced a major setback in morale. Its progressive economic programme towards a “great society” was largely halted by the economic and military demands of an unpopular war. It was a victory for the communists that extended to Cambodia and Laos.

For the world, the war was a cause celebre with meddling issues; for the United States, a cause to introspect and learn that defeat could be humiliating and protracted wars undermine success.

All these were happening during the Cold War that arose from the shock of the post (nuclear) world war based on suspicion and fear. Mutual suspicion continued. From a particular perception, the 1945 nuclear attack was the most foolish and spiteful act the human race indulged in history. The irony of human tragedy is that Hiroshima and Nagasaki were attacked with nuclear bombs²⁵ annihilating civilian population when the war had virtually ended. The act has clear shades of a war crime. The shock waves of the act will continue to haunt the world for many years to come under various situations and semblances. To some extent, it was these bombs that opened up the era of the Cold War that brought the world psychologically retarded and withdrawn, into the past. According to the faithful in the reality of human fallacies, the third nuclear bomb too may explode one day for no acceptable purpose. Another perception points out that, but for the act of the United States in exposing the power of the nuclear apparition in Japan, there would have been a more serious and regrettable nuclear showdown somewhere else in later years. The world would not otherwise have been convinced about the destructive power of nuclear arsenal. Today, the world understands that everyone is a loser in a nuclear war. Does this mean that war is a surgical operation for a better world and not plain, straightforward butchery? Does it indicate that war is necessary? Whatever it may be, the Cold War changed the psyche and behaviour patterns of nations under fear of nuclear war caught between two political ideologies—capitalism and communism. It was a long war that more or less stunted the growth of the world, though advanced it technologically. The Cold War ended in 1991²⁶ with the disintegration of the Union of Soviet Socialist Republics (USSR) commonly called the Soviet Union. Indirectly it was a declaration of the superpower concept and the ideology of a monocentric world. It may stay.

The Cold War was a war equivalent to a World War. The world lay on the lee of one of the powers, settled like disciplined tea leaves at the bottom of a Chinese cup. The wars fought during the period were strictly battles under the shadow of the Cold War between two powers vying for superpower status, seemingly under a law that only one can stay on top.

The wars between Israel and Arab states mainly on the Palestinian issue were ongoing in spite of the world's attention on various other wars. The first war immediately followed the proclamation of the State of Israel, on 14 May 1948. Notable wars were fought between the two sides thereafter in 1956, 1967, 1973 and 1982. The 1967 war, known as the Six Days War started on 5 June 1967. Within two days the Israelis took control of the Arab part of Jerusalem. Israel did not heed to the UN request to withdraw from the territory.²⁷ Besides, it also retained control over the Golan Heights. The war was over on 10 June 1967 with Israeli control on strategic points. On 6 October 1973, Egypt and Syria jointly staged a surprise attack on Israel. It was the Jewish holy day of Yom Kippur. The Israeli forces suffered heavy casualties. The Yom Kippur War ended with Egypt's acceptance of UN ceasefire call on 22 October 1973. It was a war in which both the parties celebrated victory at the end, in their own ways. Israel and Egypt signed a peace treaty on 26 March 1979, under the Camp David Accords and formally ended the state of war between them that lasted for about 30 years. Egypt recognised Israel's right to exist. It was a political victory for Egypt and recognition for the UN.²⁸ In the far away Atlantic, a brief undeclared war was fought between Argentina and Great Britain in 1982 over the control of the Falkland Islands (*Islas Malvinas*). Argentina had claimed sovereignty over the islands since the 19th century. Britain had occupied and has been administering these islands since 1833. After an initial victory, the Argentineans were ignominiously defeated by the British in the two month long war. There was a prolonged war between Iran and Iraq during the 1980s. Iraqi forces invaded Iran on 22 September 1980 to settle a number of disputes and also with an eye on oil revenue. But, the events did not turn out the way Iraq anticipated. The casualties were heavy. Estimates range from 1,000,000 to twice that number in total casualty. Iraqi forces killed some 100,000 Kurds during the final months of the war. In 1988, Iran accepted a UN mediated ceasefire.²⁹

Post-Cold War and Beyond

Even before the formal end of the Cold War, there was an untimely attack by Saddam Hussein's Iraq on neighbouring Kuwait. The decision was an isolationist thinking seemingly without logical reasoning. Iraq was facing a serious economic burden as a result of the protracted war with Iran. It invaded Kuwait on 2 August 1990, with an eye on economic benefits. Iraq had been claiming Kuwait as part of its territory for a long time. Under the intervention of the United States, the Arab countries took a firm stand against the Iraqi annexation of Kuwait. The coalition forces launched an air war against Iraq and Iraqi-occupied Kuwait on 16–17 January 1991. A ground campaign that began on 24 February secured eviction of Iraq from Kuwait in just four days. Iraqi military and civilian casualties were heavy, estimated at about 100,000. Another 100,000 soldiers reportedly surrendered to the coalition forces. The coalition armed forces suffered fewer casualties—about

1,500 killed or wounded in action. It was a one sided war, and that too an unfinished one as the later events proved.

The reforms in the Soviet Union were in progress and it paved an excellent scenario for the United States and its coalition to plan the attack without being cast under the shadow of the Cold War as it was already getting diluted. Only the reassurance was pending and it had to wait till the fall of the Soviet Union a few months hence.

Against the background of the reforms in the Soviet Union, the long suspected disintegration of Yugoslavia began in 1991. Slovenia and Croatia declared their secession from it on 25 June 1991.³⁰ Battles between Serbs and Croats erupted. Macedonia and Bosnian Croats and Muslims followed suit. As civil war raged, Serbia and Montenegro created a new federation with their own governments under separate constitutions. The civil war aggravated. In the wake of failed international efforts to mediate the conflict and in response to a major Serbian military offensive against the Kosovo Liberation Army, the NATO retaliated in March 1999 with a bombing campaign, prompting Serbian leader Slobodan Milosevic to order a campaign of “ethnic cleansing” that made refugees of hundreds of thousands of Kosovar Albanians. In June, however, a peace accord was reached. A change in the Yugoslav government late in 2000 brought reinstatement in the United Nations and the Council of Europe. Nevertheless, agitation for independence continued in Kosovo and Montenegro. The Yugoslav and Montenegrin presidents and the Serbian prime minister agreed to a European Union brokered accord that would maintain the federal union, but with greater autonomy for each partner. The agreement, ratified in 2003, renamed the country Serbia and Montenegro and effectively erased the name Yugoslavia from the annals of history on 1 January 2003.³¹

The disintegration of the Soviet bloc nations of the Cold War is a proof of the lost time in the Cold War world and it was also similar to the situation of reconstruction of a post-war world. It is for this reason the Cold War is considered to be another war of total magnitude in this book.

Much before all these, another poignant story of human suffering was unfolding elsewhere in the world—in Afghanistan, the landlocked country that remained a pawn in the power games of empires for centuries. In 1978 a pro-Soviet government, after a coup established a long-term military treaty with the Soviet Union. The Soviets moved in, in support of the Communist regime that was resisted by insurgents supported by the United States through Pakistan who was the major player in the supply chain of weapons, training, sanctuary and intelligence.³² It was guerilla warfare with ample support from the controlling powers. The money came from the United States, Saudi Arabia and other Arab countries. Weapons were bought from China, Egypt, Israel, America and Britain.³³ The CIA coordinated the entire operation with the help of Pakistan. In spite of the system being riddled with colossal corruption³⁴ in the pipeline, the insurgents against the Soviet forces

were able to repress them. This was facilitated more by the Taliban, an austere movement of religious students who were determined to establish a theocratic regime (1996–2001) that soon fell under the influence of a group of well-funded Islamists led by an exiled Saudi Arabian, Osama bin Laden. The Taliban regime collapsed in December 2001 in the wake of a sustained US military campaign, post the terrorist strike in the US on 11 September 2001. Soon thereafter, anti-Taliban forces agreed to a period of transitional leadership and an administration that would lead to a new constitution and the establishment of a democratically elected government.³⁵ It is from here, one has to revisit Iraq. With the success in Afghanistan after the Osama attack, the mind of the United States turned to Iraq once again on an unfinished job with more confidence. Saddam Hussein survived the previous attack that, according to textbooks, was intended. He was considered a cushion according to the Saudis between the Sunnite Arabs and the Shiite Iranians. But things were different now for President George W. Bush, of the United States. He could find reasons in a world without reason. For George W. Bush, overthrowing Saddam Hussein was not a bad idea, except that the reasons he put across to the United Nations and the world were not convincing. But in pre-emption, the law can be modified to argue that, *the one who pre-empt knows why, and thou shalt not ask why not*. This is the drawback of pre-emption when the most powerful handles it. The basic maxim of pre-emption is that only the powerful should attempt it. A failed pre-emptive attack can have serious aftershocks. It will be a colossal failure of power projection.

“Qui disiderat pacem, praeparet bellum”—let him who desires peace, prepare for war—wrote the civil servant Vegetius³⁶ in the late 4th century AD in his “Epitome of Military Science”—the sole surviving Latin treatise on war. In its favoured expressionist form, the term is mentioned “si vis pacem, para bellum” (if you want peace, prepare for war).³⁷ Vegetius stated that the Romans always kept their fleet at the ready “since no one dares to challenge or harm people they know are fully armed and ready to fight.” It is the oldest evidence in support of preventive deterrence. Pre-emption is a form of deterrence. In pre-emption, the forces are not just ready and projected, but actually deployed. It is not a new concept. It is older than the concept of deterrence Vegetius discerned in his treatise. In 424 BC, the Boeotians were expecting an attack from their neighbours, Athens and contemporary Greek Historian Thucydides (460–400 BC) makes their general Pagondas, say to his troops, “when one has to think about the safety of ones own country, calculations about what is prudent does not come into it. Prudence is for those whose country is secure and who are attacking someone else. But the Athenians are the most dangerous of all people to have living next door, and such people will always march out boldly against those who make no move against them but merely defend their own territory. But when someone goes out to meet them and takes the initiative, their enthusiasm for battle wanes.”³⁸ That is pre-emption.

According to the arguments on pre-emption in the modern world, Saddam Hussein, the president of Iraq (2004), was accused of planning to unleash a WMD terror. The United States and Britain along with a handful of supporters went against

Iraq before Saddam Hussein, as stated by them, unleashed terror. The assault known as Operation Iraqi Freedom began on 19 March 2003. It was swift. Baghdad fell on 9 April 2003.³⁹ That was the end of three decades of the Baath Party rule under Saddam Hussein. This time the objective was to end his rule. The United States along with the coalition forces achieved it meticulously. But the war opened out a stream of stingers that may take years to settle. In moments, lives got blown apart for many in Iraq. The number of the coalition forces increased in course of time to settle issues in Iraq.⁴⁰ Kofi Annan, the secretary general of the United Nations watched powerlessly. He went on record to state that the war was illegal since it was not according to the UN Charter.⁴¹ The US president countered this statement in another session. Annan expected the war was a lesson for the United States and other UN members and hoped that there would not be another Iraq type war. This also shows that the UN cannot exercise a mandate under conditions when a superpower undermines its authority. It is a clear indication that the superpower is beyond the United Nations as of today and there are nations that follow the superpower more precisely than they do the United Nations. It also means that pre-emptive strikes are here to stay and such attacks will have, or will require the sanction of the superpower, not the United Nations. The state of the world will continue within the paradigm of simmering attrition among warring nations. Military security will remain as the noisiest element of national security rattling like a tin box rolling over never-ending steps.

ANATOMY OF WAR

Is war an art or science? The question lingers. What is established is that war can create and become history. It is a structured behaviour pattern exclusive to human beings. This provides it with an anatomy, if conceptualised into an entity. War is unprecedented violence. Even non-state actors accept it in totality as one of the means to gain control over a controlled affair or settle disputes. War will continue; patterns will change. War nurtures order and disorder at the same time. Theories on war evolved from the inchoate thoughts of the human intellect which primarily differentiatable war from unaccepted behaviour patterns of humankind to those that are acceptable. The theories justified the act, which otherwise would regress into the realm of cognitive dissonance of the human mind. Justification prevents guilt. Shift the angle; one will see that it is the level of insanity that counts on those who ride the horses of apocalypse. Meanwhile in psychology, justification is called rationalisation.

Bhagavad Gita, the song of the blessed, incorporated in the great Indian Epic *Mahabharata*, whose exact origin is undated, justifies war as a means of achieving morally correct political objectives, when all other means fail. In a war that is just, one doesn't have to feel guilty for killing, nor fear death. The obvious question is, "when is war justified?" Military theories evolved over ages need not be pragmatic ingredients of strategy. War is shaped on reality. It is necessary to think beyond

theories while estimating strategy to preclude an end defeat at the hands of the enemy. But the frame for such analysis has to be drawn from the profundity of military theories themselves. The views of individual theoreticians vary. Their applicability as an art or science of war depends upon the personal preference of the commander based on situation appreciation. Irrespective of personal preferences, theories remained as the concentrated essence of nature, purpose and conduct of war. The theorists formulated their thoughts as appropriate to their period. Sun Tzu advocated war as the ultimate instrument of statecraft, hence of vital importance to the state.⁴² According to him, the supreme art of war is to subdue the enemy without fighting. Such a thought of eschewing violence was atypical of the inherent thoughts of wise people of the period. For Sun Tzu, mere numbers conferred no advantage. Moral, intellectual, and circumstantial elements of war were more important. Violence, chance and reason formed the Clausewitzian thought. His theories found expression in waging a war more effectively within its nature and purpose. Antoine-Henri Jomini (1779–1869) was contemporary to Clausewitz. Unlike Clausewitz, he propounded the theory of mass force, manoeuvre, decisive points and communication as the most important elements of war. The influence of Napoleon Bonaparte and 18th century warfare was evident in his theory. Jomini expanded his views under Clausewitzian influence but did not evolve out of his basic treatment of the subject.⁴³ Much later, Schlieffen (1833–1913)⁴⁴ advocated the theories of Jomini and Clausewitz. Even his theories remained fixated with the basic treatment of ground war. For the later day theoreticians, war was an extreme natural expression of policy. Ethics of war was veiled within the theories. Annihilation became one of the forms of strategy. Statesmen, historians, scholars and military strategists contributed to the theories over the years but the essence of basic theories remained unaffected. The influence and applicability of these theories and the way wars were fought varied from region to region. It was often difficult to identify a war with another, as they were explicable different in their motives and elements of style, except through the basic theories underlying their very nature and purpose. The style of war was often predominated by the character of the states that participated in it. There are wars that demonstrate the advantage of defence. In others, victory was based on offensive tactics. There are reality speculations that wars may not be decisive and end results may not be proportionate to losses on either side. “Zero casualty” repeatedly proved an impossible objective. The world was at war throughout history. Some wars are fought to stop wars! Wars and warfare have changed; wars have changed lives. But the theories of war are intact. No more new theories are added to those that already exist. Additions to these theories are findings and appreciations of a different kind:

That wars will continue; there will be lies and super lies by heads of states, military and governments; the media will be embedded and will be at war with each other for a clear view of bloodshed; everybody loves to watch a good war; objectives can change in the middle; victory in election is assured to the one who is still at war; anti-war protests are

a waste of time unless they are just to pass time and a means of fund collection; war is economics for some, but halts economic programmes for many; it is a universal excuse for a government; in war both parties can win if they play carefully; the lessons learnt are not about the tragedy that is war, but how to win the next war; wars are fought for domination; corruption and opportunism is prevalent in a war situation; cruelty is on the forefront; declared war is in no way different from undeclared war; power brokers, middlemen and corporations will control war decisions; dictators in disguise will take on dictators who are exposed; end of war treaties will be to the advantage of the winner; mercenaries—hired soldiers—are part of war; coalition is an old concept; coalition could be implied and invisible; pre-emption is the virtue of the powerful... Many such dictums can be uttered in a breathless Shaolin chant.

War is regular, destructive and constructive. It brings untold misery to humans—physical, mental and emotional because it is cruelty at its highest order, and it unfolds without ethics. War curtails freethinking. The purpose of war could be anything. Place them all in one straight sentence; it will read—war is a situation where the old bury the young for reasons not very clear to them. Wars may be relayed to generations by dormant causes. That gives rise to the concept that no single generation can resolve a problem associated with military security from the past. Exploitation of differences remains a good strategy in war, especially those related to colonialism and insurgency. Enemies become friends and devils become darlings in a coalition when the ground is common. War has a point towards the concept of global security. The League of Nations and the United Nations are just the beginning pointers of global security. Both were the afterthoughts of war. Coalition is also a symptom of global security issues—a subconscious acceptance of the concept. If that is so, it was there since the Trojan War when Agamemnon gathered all including the rebellious Achilles.

WAR AND DESPISE—THE COUNTER THEORY

The theories loaded so far will go bust if the war adversaries have a say. There were many efforts in the world to stop war between nations. Some of the theories went to extremes. There were people who thought that a common language might eliminate wars forever. They felt people were not able to understand each other because of too many languages and went on to invent a new international language “Esperanto”, in the early 1900s. Others felt promoting tourism might end war because the one you befriend will not be the one with whom you may want to fight. But in the course of human history, most of the wars fought were between neighbours.⁴⁵ Language showed no connection and Esperanto vanished the way it came. There are many notables in the anti-war thoughts. Jimmy Carter, the former president of the United States stated in his Nobel speech on 10 December 2002 that the “war could prevent war” argument was wrong. War was evil, he said.⁴⁶ While wars could not be stopped, relief came occasionally in the form of regulations. The subject of regulating warfare was a point of attention of scholars, leaders,

diplomats and soldiers for years. The Greeks and the Romans customarily observed certain humanitarian principles, which have become the fundamental rules of the contemporary laws of war.⁴⁷ Ancient India had seen ethical principles incorporated in war. Scriptures like the *Mahabharata* inscribed ethical principles for observation in the battlefield. It is a notable aspect when it is argued that conventional war with limitations of the laws will no more be in vogue. Instead, cheap, unlawful, and high casualty armed conflicts will have a say and armed forces will be strained to the limits. Military security therefore, is poised to remain at the centre of national security. War is not just a combat situation. It is an instrument of national policy. A war is won after soldiers win the battles in the terrains. Diplomats and politicians have to win battles in their appropriate domains. Sometimes a battle won by the soldiers may not be sufficient for politicians and diplomats. It is also possible for politics and diplomacy to turn a lost war into victory.

Those who are against war argue that the only war that can be won is the war that has never been fought. Sun Tzu made the point differently—the best victory is winning a war without fighting. Norman Angell in his book *The Great Illusion: A Study of the Relation of Military Power in Nations to Their Economic and Social Advantage* tried to prove that military conquest was obsolete. According to him, in prolonged industrial wars, everybody loses. The losers lose more than the winners. Much wealth is blown up. Many infrastructures are demolished, only to be rebuilt again. But the thought that wars are important in order to promote national prosperity was present all the time. It hasn't changed at all, though there may be a section of society that thinks like Angell.⁴⁸ Today, even children are enlisted and are fighting wars. In his book, Angell puzzled over how pre-World War I pan-German politicians believed that German prosperity required a big battle fleet when the absence of this made no difference to the prosperity of Norway, Denmark or Holland. He looked forward to the coming of an age of rationale statesmanship, when every prime minister and foreign minister would recognise that regardless of the matter in dispute, binding arbitration between nations was a better strategy than war.⁴⁹ But, it is doubtful whether governments can appreciate and survive the theories of anti-war.

WAR IN THE FUTURE

War is not expected to be strange for future generations. The trend will be based on reality; people may have a say in its conduct and nature. Technology will give the edge for swiftness. The energy crunch will force the parties to limit the duration. Reach will be achieved by designing global super weapons instead of fielding forces from extended territories. Computer aided and networked weapons will strike targets at lightning speed from outer space. The strikes will be controlled by the powerful from their own territories. Those who rule outer space, will rule the world. Space is a conventional energy saver. In such cases there are more chances of elimination of international coalition on the battlefield. Coalition will remain on

the covenants of declaration, but only one—the capable one in the pack—will fight the war. It is said that the United States is in designing futuristic weapons with global reach and lethal power under the code name Falcon.⁵⁰ Ultimate responsibility is stated to find a reusable hypersonic cruise vehicle (HCV) capable of taking off from a conventional runway and striking targets 9,000 nautical miles (nm) away in less than two hours. The unmanned HCV will carry a payload of about 12,000 lbs and could ultimately fly upto 10 mach.⁵¹ The global reach system will rely on expendable launch vehicles to carry a warhead, known as common aero vehicle (CAV) that would be guided on to a target. A CAV could carry explosives of choice, but at those speeds explosives may be unnecessary. A titanium rod will be able to penetrate 70 feet of rock resulting in enormous destructive force. Hypervelocity rod bundles could hit targets on earth from space. Deadlier than all these weapons from space is the laser engagement systems. That is not restricted to outer space alone. The system includes airborne, land, ocean or space-based lasers in conjunction with space-based relay mirrors to project different laser powers and frequencies to achieve a broad range of effects from illumination to destruction. In 2004, Vladimir Putin, the president of Russia revealed the idea of a new super missile plan with nuclear warheads.⁵² The new system could be mobile versions of the Topol-M ballistic missiles or the Bulava intercontinental ballistic missiles. The missile could both be sea-based and land-based. The developments point out multi-terrain (aerospace) flying machines in the preferred list of future war inventory. Washington had withdrawn from the Anti Ballistic Missile Treaty (ABMT)⁵³ in 2002 in order to develop a nationwide missile shield. Russia has seen this as Washington's bid to build low-yield nuclear weapons. Well, politicians speak loud when power has to be projected rather than developed; that is part of power projection strategy. But the conclusion is that the race is on and may not end on the simple principle of filling the gap left by the advancement of others.

Extreme weapons will avoid misfire deviations or collateral damages to non-targets in the vicinity of attack. The hidden political psychology may be to attack and finish fast before the public catches the plot. That calls for smart and extreme weapons. Naval ship design will undergo change with stealth ships. The sensory signatures will be minimised by special design, with deadly weapons that can target anywhere in the world. Sensors and fixtures will be cocooned inside and opened out only at the time of attack. Ships will be camouflaged and insulated from every detection system—air, surface or underwater. Aircraft will be unmanned and more lethal, and transform into micro aero vehicles (MAV). Nano technology will lead the way for miniaturisation in design. Electromagnetic pulse generators may upset anything normal—from transmissions to entire cities. Anti-matter devices many times deadlier than the deadliest neutron bombs will pale nuclear bombs into Stone Age tools. In the development of human offensive behavioural traits the question is not, “what next?” but, “what beyond next?” Meanwhile, the asymmetry between the good and the bad will continue with advantage to the good. Terrorists and

insurgents will have more lethal and potent weapons. The proxy wars and asymmetrical wars will continue. Military security will be worst hit in a proxy war that has no code of conduct like in a declared war.⁵⁴

THE COST OF MILITARY

The cost of military historically, has been the case of “the tail, chasing the dog” for most of the countries. The expenditure incurred by some is mind-boggling. According to a study by Sri Lankan economist Muthukrishna Saravanathan, Sri Lanka spent more on defence and war than on social services like health, education (informational security), and rehabilitation, poverty alleviation and reconstruction put together, between 1991 and 2001. Defence expenditure in Sri Lanka was more than that of other South Asian countries barring Pakistan and those facing similar insurgencies—Colombia, Myanmar, Philippines, Sierra Leone, Sudan, Uganda, etc.⁵⁵ Sri Lankan defence expenditure skyrocketed from LR 16 billion in 1991 to LR 77 billion in 2000, outstripping social expenditure. The actual expenditure on defence could be more because large areas are unaccounted for. These are the secret payments to auxiliary paramilitaries, diversion of funds meant for civilian use and absence of open tender procedures in military procurements.⁵⁶ The law of diminishing correlation between economic security and military security is at play here.

The price of war is different from its prize. Both may not coincide and cannot be equated. According to a report based on the Iraq War 2003, US\$119.4 billion sanctioned by the Congress for the first two years of war in Iraq was a tiny fraction of government spending.⁵⁷ It was affordable for the United States, who according to reports remains the largest defence spender.⁵⁸ The cost of war is increasing at unimaginable proportions. The cost value therefore, has to be seen separately for each nation, for each occasion. The cost of wars for the US was:⁵⁹

• World War II	US\$5 trillion
• Vietnam War	US\$623 billion
• World War I	US\$613 billion
• Korean War	US\$471 billion
• Iraq War	US\$119.4 billion (2003—sanctioned)
• Civil War	US\$74 billion
• Persian Gulf War	US\$4.7 billion

The pinch of money that matters in war expenditure is not what it would have done otherwise in related terms, but how it would have reduced the annual deficit; a key factor in deciding the economic security of a nation. If it supports deficit reduction by spending, it is a sign of go-ahead from the point of economic security. For the US, unlike for most others, military spending has been a means of wealth generation. In 2002, the five permanent members of the United Nations’ Security Council accounted for 90 per cent of arms deliveries. Their percentage share was:⁶⁰

• United States	41
• Britain	19.5
• Russia	17.5
• France	7.6
• China	4.7
• Others	10.1

In 2002, seven countries spent more on military than on health and education combined. The percentage in GDP was:

• Myanmar	2.3
• Sudan	3.0
• Pakistan	4.5
• Syria	6.2
• Brunei	8.1
• Oman	12.2
• Eritrea	27.5

The world arms spending crossed the trillion US dollar mark in 2004. Probably the war on terror by the US, post the 11 September 2001 terrorist attack boosted the spending. The estimate of global military spending was US\$1.035 trillion in 2004. That is about US\$162 per human on earth—to kill or die prematurely by a weapon. According to the Stockholm International Peace Research Institute (SIPRI) the spending in 2003 was US\$953 billion.⁶¹ The preoccupation of the world with military security will continue at least from the market games of arms business alone. Calculating the cost of war is like estimating the cost of a major disaster before hand. Accuracy will be at stake. A letter that appeared in the *Friday Times*, a newspaper published from Pakistan described the heavy price the country was paying for its obsession with India.⁶² It was critical of the government pursuing a destructive policy while the Pakistanis were badly in need of employment, schools, hospitals and rule of law, rather than Kashmir. According to him the politicians and uniformed personnel had a different priority. In more than half a century of its independent existence, what Pakistan had was sophisticated military wares and had accumulated US\$37 billion external debt rooted in defence procurement. Pakistan conducted six nuclear tests in 1998. According to the US Nuclear Study Project, the average cost of a bomb is US\$5 billion. Other data put together by the Brookings Institution, the International Atomic Energy Agency (IAEA), and the Institute for Science and International Security indicate that Pakistan's expenditure should have been about US\$300 million to US\$400 million a year over the two decades (1980–2000) in order for it to operate and maintain some 22 known nuclear-related sites.⁶³ The costs did not end there. Nuclear bombs breed delivery vehicles, again a costly affair. The letter was critical about the acquisition programmes in addition to nuclear programmes. According to the estimate, the money spent could provide food, clothing and shelter to impoverished children,

12,000 schools every year, 20,000 additional teachers, and educate three million people or provide 2,000 medical care facilities every year. The letter may be Pakistan specific⁶⁴ but the cost of military preparations applies to all. Comparing the cost of military with opportunity cost does not seem to be an acceptable practice in military security. The cost of war is not just in terms of money alone. There are also social aspects that need to be considered. It is interesting to note that less secure nations have larger and more authoritarian leadership with higher powers vested in them, whereas in more secure nations the military is basically a powerful instrument of national policy in a geostrategic context. The military supports the government policies, unlike a militia who influence the government or act as the government itself. Such social systems cap national growth. The weapons wielded by the military and the influence it has over its own people and government are important in indexing national security.

VALUE ENGINEERING THE MILITARY

A nation should audit its military and military security attitudes frequently to avoid the military leaching into the governance of national security. It is especially so, when:

- Its population is high and productively unexploited
- The armed forces (military and other armed forces) are not gainfully employed or are underemployed with respect to their charter
- The armed forces, especially military armed forces are overstretched
- The military armed forces are not evenly loaded and stressed out
- The number of armed forces is large
- The strength of the armed forces is heavy and flabby
- Large numbers of people in the country are below the poverty line
- The military influences the government
- The military is not accountable
- Large numbers of retirees from armed forces are under state benefit
- Information of the armed forces is hidden from the public on vague grounds
- Ruled by a yielding government
- The military research and development (R & D) is unduly prolonged
- International trade is not supported by product approach
- The military is plagued with controversies—mutiny, discontent, review, trials, international non-appreciation, inter-service rivalry, opinion difference, politicism, excesses, corruption, sectarian politics, fraud, media grind, etc.
- The military demands too many concessions from the government
- The military has substantial self-generated funds not accounted by public audit and expended at discretion
- Change of government or officials affects defence policy

- There is duplication of efforts by armed forces
- Armed forces lower guard
- The military is engaged in law enforcement and other, relatively low intensity activities
- Armed forces extend their activities beyond the terms of reference for performance
- There is mismatch in international interactions of the armed forces
- Military assets are in unduly large proportions—all types of inventory, low use assets, real estates, etc.
- The inoperative inventory level of the armed forces is extremely high or not clearly known
- Retirement costs to the nation are unusually high
- The military trespasses into civil systems
- The military is outside the constitutional rule of law
- The military attains political clout
- The military is employed in farming, general community relief operations, etc. In such cases the cost of operation will be higher than the value gained
- The military personnel are not employed in the job of their training and specialisation, but elsewhere
- Political parties use the military to settle scores with the opponents
- Others—there could be more

Establishing a military and preparing it costs money. The cost of war when engaged is extra. This money has to come from other developmental projects unless war and military preparations earn revenue. It is possible under certain circumstances. Here is where countries that have to fight wars have to be cautious. War should not be an instinct. It has to be thought out carefully, economics included. The return from war is to be examined professionally before spending money on it. The choice of having bases elsewhere, having weapons or forces is a cost-benefit matter. The US has over 700 military and overseas bases in more than a hundred countries.⁶⁵ Military to military interactions to develop interoperability is fostered by certain nations with other governments for reach and improved capabilities to fight wars in distant lands. In the past, it was based on mobility and the intention was clear. Today, in certain quarters mobility is reserved in advance. Thereafter it is only short haul mobility. While there are strategists who advocate virtual destruction and decisive speed, there are others who propound a cool, sober and calculated approach in facing challenges. The choice is up to the government and that will again depend upon the urgency of the situation. Under these circumstances, value engineering of the military is very essential for any country. Though value engineering is a business and management tool, a value engineered and constantly reviewed military may be the optimum for a country. It is also necessary to see that the military performs optimally and does not remain static or deviate from its purpose.

Value engineering studies examine four types of values.

- (a) Cost value—in which the entity is assessed for its cost of creation. A military is costly. Its cost value is unjustifiable when it remains under employed, used non-methodically, riddled with problems and has unwanted bulge.
- (b) Use value—is it the right military the country needs? What is its usage? Can the use be met by less expensive organisations, geostrategy or other means?
- (c) Esteem value—how important is the military geostrategically? A well-designed military can be a worthy contributor in geostrategic security.
- (d) Exchange value—the value derived from contributing to other elements of national security matters here.

The value of a military is not in numbers, weapons, equipment or the tricks it can play like a roadside monkey, but in its contribution towards maximising national security.

CONCLUSION

Defending a nation against wars and conflicts is what military security is primarily about. A thorough understanding of war and how it will affect the nation, and the threat posed to it by a conflict across its borders or internal to it, is what the government has to understand and prepare for to minimise damage. Though traditionally, wars were waged to conquer a territory, the purpose of war could defy the logic of traditional objectives. Wars will extend to the future as today's preparations forecast. The cost-effectiveness of such wars and preparations for it along with other ingredients of military security has to be assessed carefully lest it should affect other elements. Maintaining military armed forces for jobs lesser than the cost of their maintenance is not justified. A military is an expensive proposition; it should have value based assessment.

Notes

¹ Adam Roberts and Richard Guelff (eds), *Documents on the Laws of War*, Clarendon Press, Oxford, 1989, p. 1.

² Ingrid Detter, *The Law of War*, Cambridge University Press, Cambridge, 2000, p. xvii.

³ Ibid. p. 26.

⁴ *Encyclopaedia Britannica, Ultimate Reference Suite*, CD-ROM, 2004. Joseph Stalin (1879–1953) was the secretary general (1922–1953) of the Communist Party of the Soviet Union and premier of the state (1941–1953) who transformed it into a major world power.

⁵ Jane's Fighting Ships 2000–2001, pp. 84–86.

⁶ Ibid.

⁷ Ibid. p. 86.

⁸ John Keegan, *War and the World (The Reith Lectures, 1998)*, Vintage Books, New York, 1998.

⁹ Based on an informal fixed and universal hierarchical order mentioned in Chapter 4, strictly for convenience of this study.

¹⁰ Compiled from available records and references. Important ones are by R. Castleden, *World History*, Parragon, London, 1994; *Encyclopaedia Britannica* CD-Rom, 2004; G Blainey, *A Short History of the World*, Penguin Books, New Delhi, 2001; Colin Wilson, *Criminal History of Mankind*, Granada, London, 1984.

¹¹ Rodney Castleden, *World History*, Parragon, London, 1994, p. 1. The larger brain homosapiens replaced the physically stronger but lesser brain powered Neanderthals around 38,000 BC, becoming the more advanced humans. By 35,000 BC they disposed of the Neanderthals from their hunting grounds.

¹² *Encyclopaedia Britannica*, n. 4. Anaxagoras was a Greek philosopher and cosmologist who discovered the true causes of eclipses.

¹³ The epics of the Trojan and the Athenian wars show the importance of ocean terrain for reach and logistics movement from the ancient days.

¹⁴ This is an interesting aspect that shows involvement of the rich and powerful in war (corporate involvement) as well as blackmailing and terrorism (hostage taking). What we see today in terrorism and corporate involvement in deciding on war and arms dealership etc., are nothing new. All these confirm the law of invariance.

¹⁵ The terminology, “user-friendly weapon” is used to explain the process of killing in the most convenient way. The author is of the opinion that no weapons in the world are to be treated as being user-friendly. The combatant should be “weapon-friendly”, that is how they are to be selected and trained for maximum effectiveness in using a weapon.

¹⁶ Saracen means a member of pre-Islamic nomadic group of the Syrian-Arabian deserts. A Saracen is also an Arab or a Muslim during the period of the Crusades.

¹⁷ Hired mercenaries are part of most wars, even today. However, in some cases they may not be called mercenaries, though. They kill for money. They are more in demand in proxy wars that state or non-state sponsored terrorism propound.

¹⁸ Later in the book referred to as a superstate.

¹⁹ Otto Von Bismarck (1815–1898). Prime minister of Prussia and the founder and first chancellor of the German Empire.

²⁰ *Encyclopaedia Britannica*, n. 4.

²¹ “Never Forget Normandy,” *Hindustan Times*, (New Delhi, 5 June 2004, p. 19.

²² Castleden, n. 11, p. 565.

²³ *Encyclopaedia Britannica*, n. 4.

²⁴ Ibid.

²⁵ Castleden, n. 11, p. 553. The nuclear bomb killed 100,000 outright and another 100,000 in subsequent months from burns and radiation sickness in Hiroshima. 75,000 died in Nagasaki.

²⁶ *Encyclopaedia Britannica*, n. 4. The dissolution of the Soviet Union was complete on 25 December 1991 when the new Russian flag was hoisted in the Kremlin.

²⁷ Israel insisted that the city of Jerusalem will be its capital and will not be divided since then whereas, Palestinians demand full control over East Jerusalem and its Temple Mount. The war is expected to continue. The Palestinians also have another reason for this—to re-inter Arafat (1929–2004), the revolutionary Palestinian leader, who died on 11 November 2004 after dominating the Israeli–Palestinian conflict for nearly 35 years and buried temporarily in Ramallah where he spent the last three years of life forced into isolation at his spartan house, by the Israeli forces.

²⁸ Prabhakaran Paleri, *An Overview of Military Theories through the Images of the Yom Kippur War*, Research paper (Unpublished), National Defence University, Washington DC, 1993.

²⁹ *Encyclopaedia Britannica*, n. 4.

³⁰ Castleden, n. 11, p. 621.

³¹ *Encyclopaedia Britannica*, n. 4.

³² Mohammed Yousef and Mark Adkin, *The Bear Trap: Afghanistan's Untold Story*, Jung Publishers, Lahore, 1992, pp. 78–97.

³³ *Ibid.* p. 82.

³⁴ *Ibid.* p. 97. *The Washington Post* (8 May 1987) reported that they had found that the CIA's secret arms pipeline to the Mujahideen in Afghanistan was riddled with opportunities for corruption. It further reported that the losers were the poorly equipped guerrillas and the American people whose congressional representatives have been betrayed by the CIA.

³⁵ *Encyclopaedia Britannica*, n. 4.

³⁶ *Encyclopaedia Britannica*, n. 4. Roman military expert of the 4th century AD, whose writing was considered the single most military treatise in the Western world. His work exercised great influence on European tactics after the middle ages.

³⁷ Peter Jones, "No War: If Only Saddam Read His Classics," *The Asian Age*, New Delhi, 16 January 2003, p. 17.

³⁸ *Ibid.*

³⁹ <http://www.washingtonpost.com>, 16 November 2003. Saddam was arrested much later, on 13 December 2003.

⁴⁰ <http://www.cjtf7.army.mil>, 16 November 2004. According to the site, the coalition forces as on 8 January 2004 comprised 35 countries, in addition to the United States, have contributed a total of approximately 22,000 troops to ongoing stability operations in Iraq. These 34 are Albania, Australia, Azerbaijan, Bulgaria, Canada, the Czech Republic, Denmark, the Dominican Republic, El Salvador, Estonia, Georgia, Honduras, Hungary, Italy, Japan, Kazakhstan, Latvia, Lithuania, Macedonia, Moldova, Mongolia, the Netherlands, New Zealand, Nicaragua, Norway, Poland, Portugal, Thailand, the Philippines, Romania, Slovakia, South Korea, Spain, Ukraine and the United Kingdom. Details were for 9 January 2004.

⁴¹ Chidanand Rajghatta, "Iraq War Illegal, Credible Polls Unlikely, Says Annan," *The Times of India*, New Delhi, 17 September 2004, p. 1.

⁴² James Clavell, *The Art of War by Sun Tzu*, Dell Publishing, New York, 1983, p. 1.

⁴³ Peter Paret, *Makers of Modern Strategy—from Machiavelli to Nuclear Age*, Princeton University Press, New Jersey, 1986, p. 172.

⁴⁴ Schlieffen, Alfred Graf von was a German officer and the head of the general staff whose plan of attack later came to be known as the Schlieffen Plan used by the German armies in World War I.

⁴⁵ Geoffrey Blainey, *A Short History of the World*, Penguin Books, New Delhi, 2000, p. 538.

⁴⁶ *BBC World*, 10 December 2002.

⁴⁷ Adam Roberts and Richard Guelff (eds), *Documents on the Laws of War*, Clarendon Press, Oxford, 1989, p. 2. Falcon stands for force application and launch from continental United States.

⁴⁸ J. Bradford Delong, "The Great Illusion," *The Economic Times*, New Delhi, 31 May 2004, p. 4.

⁴⁹ Ibid.

⁵⁰ *Guardian News Service*, "US Plans Global Super Weapons," *Hindustan Times*, New Delhi, 2 July 2003, p. 12.

⁵¹ Mach is the ratio of the speed of the object to the speed of sound in the surrounding medium. After Earnst Mach (1838–1916), Austrian physicist and philosopher.

⁵² Mike Eckel, "Putin Reveals Nuclear Super-Missile Plan," *The Asian Age*, New Delhi, 19 November 2004, p. 5.

⁵³ The ABM Treaty is the product of the Cold War between the US and the Soviet Union. Strictly speaking, it is an instrument of the bipolar world. The ABM Treaty of 1972 limits strategic ballistic missile defence systems.

⁵⁴ In a speech by A.P.J. Abdul Kalam, President of India, *PTI News Scan*, New Delhi, 10 December 2002.

⁵⁵ P.K. Balachandran, "Lanka Spent More on War than Social Services," *Hindustan Times*, New Delhi, 8 December 2002, p. 11.

⁵⁶ Ibid.

⁵⁷ Alan Fram, "A US\$119.4 b Splurge," *The Economic Times*, New Delhi, 3 June 2004, p. 8.

⁵⁸ Sandeep Dikshit, "Military Spending Close to Cold War Levels: Report," *The Hindu*, Kochi, 14 November 2006, p. 12. The United States accounts for almost half of the world total in defence expenditure according to Stockholm Peace Research Institute (SIPRI). Low income countries had the highest growth rate and the high income countries had the lowest growth rate.

⁵⁹ Fram, n. 58.

⁶⁰ "Military Spending," *The Hindustan Times*, New Delhi, 24 June 2004, p. 2.

⁶¹ "World Arms spend \$ 1 Trillion," *Hindustan Times*, New Delhi, 8 June 2005, p. 19.

⁶² Zahid Hussain, Letter to the Editor, "Window on Pakistan," *Times of India*, New Delhi, 6 April 2001.

⁶³ Ibid.

⁶⁴ But Pakistan is not a country that has to be seen as an economically failing state. On the contrary, it has been quite progressive and has been striding comfortably in every field since independence with India, it's partitioned other half. Its economy grew by 8.35 per cent against the target of 6.6 per cent in fiscal year 2004–2005. It is an amazing feat. It is an indicator of economic security based on governance—implementation of reforms. The agricultural sector grew by 7.5 per cent. The large-scale manufacturing sector registered a growth of 15.4. Services sector attained 7.9 per cent growth. The country also expects its per capita income to go up. Mubashir Zaidi, "Pak Economy Also Shining," *Hindustan Times*, New Delhi, 18 May 2005, p. 16.

⁶⁵ Vishnu Bhagawat, "Changing Nature of Warfare," *Aerospace and Marine Warfare*, Vol. 1, Issue No. 19, 3 October 2004, pp. 15–16, 18.

8

Economic Security

*The money that passes through a million hands behaves
in a million ways—that is psychonomics.*

Economics deals with money and finance. The feeling that money holds the key to everything crept into human psyche emphatically when it was found that currency could replace the barter system. Since then, psychonomics¹—the psychological way in which people handled money—influenced human behaviour considerably. Money unwittingly became the symbol of power, security and happiness. In every attitudinal manner of humans, there is money in one form or another—the psychonomical convictions and aberrations. The element of economic security evolves from these basics.

ABOUT ECONOMIC SECURITY: THE SECOND ELEMENT

Economic security aims at making a nation economically strong and competent for global participation. In the traditional outlook, economic security as an objective is provided by conquest, public or private economic measures, etc. It is necessary to see economic security in relation to military security on one hand, and to the international rating of the nation in its economic capabilities and bargaining power on the other. The behaviour pattern of an economically weak nation in relation to its military interests in a self-destructive manner is explained in Chapter 4 (Figure 4.1) along with the concept of EDS. The concept is applicable to every nation unless military spending is affordable and productive in relation to industrial and technological advancement. Such situations arise only in the case of a limited number of economically advanced nations. For any other nation, the value of EDS has to be critically evaluated by specific studies. Defence expenditure above the EDS will cause a serious dent in economic security. Nations that felt weak counted more on military security than on economic security, and became economically weaker in the process. Both these elements are mutually dependent to such an extent that an increase in one may reduce the other. In the US, Dwight D. Eisenhower (1890–1969)² understood the economic dimensions of national security and considered that money spent on arms might be a waste. According to him, national security required far more than military power. He felt that economic

and moral factors played indispensable roles.³ Eisenhower believed that balancing economy with military capabilities was important.⁴ The economic issues faced by a nation can be far too many. Retarded economic growth, higher costs of industrial production, unemployment, deficits, inflation, etc. are just a few. A stable economy growing at a natural pace is essential for economic security. The concept of economic security urges creating knowledge-based economies. In 1985, the United States President's Commission on Industrial Competitiveness put it as, *the degree to which a nation, under free and fair market conditions, produces goods and services that meet the test of international markets while simultaneously expanding the real incomes of the citizens.*⁵ This idea also underpins economic security as an element of national security. The world was never economically secure. Pangs of economic depression, recession, inflation or panic were always around the corner. Until the 19th century, economic fluctuations were largely connected with shortage of goods, market expansion and speculation, as in the incident known as the South Sea Bubble (1720) when stock speculation reached panic proportions in both France and England. Panic in economic terms means acute financial disturbance such as widespread bank failures, feverish stock speculation followed by a market crash, or a climate of fear caused by economic crisis or the application of such crisis. Panic is applied only to the violent end of financial convulsion and does not extend to the whole period of decline. The panic that rocked the US economy in 1929 shattered world economic relations and brought about the Great Depression. In Keynesian economics, when effective demand falls short of productive capacity, unemployment and depression are the result; when it exceeds the capacity to produce, the result is inflation. Both are minute-to-minute possibilities in a precariously perched world economy that is trans-boundary, even in the days when it was not declared global for economic purposes. Money, as a matter is always global unless the world is divided by insularity like partitioning a computer hard disc into independent drives. Even then, the money game in the partitioned part will be total. The butterfly effect⁶ in money is much more serious than in climatological predictions. Associated with economic insecurity is the practice of economic warfare. Under the principle of global interactive nature of economics, it is easy to understand that economic warfare is self-destructive. The impact of economic warfare in economic systems can upstage the issue of economic security based on standard models. Economic warfare (or rather de-stabilising each other) is a multi-cube threat to economic security. Economic warfare is the use of economic measures, as distinguished from the military, in international conflict. Such measures include export-import controls, trade agreements with neutral nations, shipping controls, blacklisting, blocking of opponent's exports, aids and assistances, and pre-emption or preclusive buying. Economic warfare may also be defined to include all measures undertaken to increase the economic power of a country at the expense of other countries. The concept originated during World War II and continued as part of the containment system during the Cold War. It may also include measures by one nation to ensure the economic dependence of another

and thereby gain political power over it. Aids and sanctions are part of it. Under the principles of national security envisaged in this book, a win-lose game is short-lived. Economic warfare is such a game. It causes serious long-term damage, more to the winner than the loser.

Within these parameters, basic economic security depends entirely on research into the problems of instability and identifying the stabilisers that are required to be injected at appropriate times. In an economy, millions of people are engaged in distinctive activities—production, distribution and consumption of different goods and services. Organisations will not survive when a breakdown occurs in the coordinated activity of such overwhelming economic propensity. The Great Depression was one such breakdown. The way the economic puzzle is solved without anyone thinking about it has broadly, been the main theme of economic theory since the time of Adam Smith (1723–90).⁷ It has been proved in history that socialist economy cannot provide economic security. According to Ashwini Deshpande from Delhi School of Economics, the basic requirements of economic security are growth in the real sectors of economy: industrial and agriculture, and expansion of rural markets.⁸ Economic security means purchasing power. In peasant economy, it also means rural purchasing power. It is interesting to note a find by Professor Ashutosh Varshney of Notre Dame University, that in democratic countries the poverty line is higher and showed slower decline, whereas Amartya Sen's findings show that democracy had without exception, abolished famine.⁹ He mentions that it is because democracies adopt direct methods: subsidies, job reservations, transfer of assets to the poor, etc. (through land reforms and cheap loan schemes), whereas the indirect route is often an unnoticed passage to permanent economic security: accelerating growth of gross domestic product (GDP), increasing productivity, market-friendly policies, and investment in health, education and infrastructure. This confirms that economic security can be jeopardised by military over-investment and direct poverty alleviating methods.

TRANS-BOUNDARY NATURE OF ECONOMICS

Economics is the only “religion and language” common to the world. It cannot be managed by a, *my economics is better than yours* attitude.¹⁰ A closed-door economy or a system that shuts its doors to global economics¹¹ is similar to a room closed to ventilation. In a closed system, economic disorder will enlarge faster. There can be life in it, but the sense of security that forms within vanishes and thereafter, the state will have to support the people. Economic manoeuvrability, an essential ingredient of economic security, will be restricted under such perception. Those who argue the validity of going global understand that the essential ingredient of economic security is good economics. Good economics is trans-boundary. It is the ability to understand that global economic changes can affect a nation's economy and the will to accept the challenge. Economic growth cannot be insulated.

The mutual opposites, capitalism and communism have a go-between in socialism. There are many middle road pathways with turnpikes in economics, from Robin Hood's Sherwood Forest economics of "rob the rich to feed the poor" to what the out of the wood economists will preach. Taxation by government that takes away money from the rich may meet with the dictum of Robin Hood. Governments tend to please the people by populist methods with short-term dividends. There are too many populists in the Sherwood Forests of the modern day world of economics where money is swindled or mismanaged. Good economics brings a sustained rise in the earnings of the people. One of the secrets of good economy is learning to play within a global economy; but those who do not have the confidence to play it for profit will view it as a threat.

GLOBALISATION AND ECONOMIC SECURITY

One of the many other aspects that support globalisation for an enriched economy is poverty alleviation. Downing the trade barriers by the rich countries is a way to do it. It is accepted in the clarion call of Don McKinnon, the Commonwealth Secretary General, to the rich countries to open their markets to poor countries for their products by bringing down trade barriers to alleviate global poverty.¹² Globalisation is not without its popular myths and economic facts. Firstly, it is not a new concept or an accidental cult of modern day economy. It became a reality when people started invading or migrating across borders. The fuss, if any, about it today is with the psychonomical aspects of money. The caravans on the silk routes and mountain tracks, and armadas across the seas, brought and exchanged money in one form or another. That was globalisation—the open system from the early days. The only choice in front of a nation is to play it good, not to shut it out. The difference of globalisation then and now is in the speed at which today's world works. Theoretically, this speed should be increasing in the future. Hence it is all the more important that a nation embraces a chosen policy, appropriate to its philosophy, of being a party to globalisation lest it should tumble over in the speed of the future, once decided to go for it. The integration of global economy has raised too many fears. The obvious fear is that the rich are prowling on the poor. Yes, they will, if they don't understand the dictum of economic security. Preying on the poor will be self-destructive for the rich. The rich will become richer only if the poor become rich, is the basis of economic transactions. This is the way the "waiting line" (in the queuing theory) moves forward. The poor have a choice here—make the rich richer. In fact, it is not a choice at all. It is more a practical approach in moving ahead in the economic line-up. At individual and group levels this is what is happening the world over in employer-employee, and trade and market relations. There is no system in which the rich can become richer by making the poor, poorer unless the rich directly rob the poor. Ideally, the poor have nothing to be robbed of. In any transaction, according to good economics, there is only gain for both the rich and the poor, in which achievement of the objective is a

notch ahead. This is also an argument in the win-win philosophy of national security.

The span of an economy is a day long, in the micro sense. It assumes a particular identity of the day at the closure. There is a change the next day—forward or backward. This change is based on various decisions; quite a few are purely psychonomical—like the fall of share prices after a gloomy budget announcement, or terrorist fallout. Share prices even fluctuate when the news spreads that the chief executive has haemorrhoids unless, the firm has found a better “preparation” for the interior ailment of the posterior. In that case, the shares may go bullish. A particular music system that revolutionised the market long ago was said to have been designed for the personal use of the boss. Well, that is economics. It may also be noted that the statement that economics is a daylong affair is to drive home the point that money moves in disjointed steps; the flow is never smooth and fluent in a linear mode. Otherwise, the days in the world of information are no longer singled out for a country. India does not sleep when America is awake. The debate on globalisation is whether it is good or bad for a nation’s economy. Globalisation has to be seen as a long-standing reality and the choice is to use it to the best advantage of a nation’s economic security. It is neither fight nor flight, but pure management and governance. National economic polices, appropriate to each nation’s economic security, have to be designed accordingly. Most of the debates are focused on the competitiveness of a nation to survive in a global economy that is expected to be brutally aggressive. It is an issue if the nation does not possess the required competitive strategic determination. It becomes worse when the nation practices measures to cut competition—reducing wages, cutting taxation, subsidies, welfare measures, etc. It takes away the long-term efficacy of the economic system and blunts the cutting edge further. It is the opposite that will make the cutting-edge razor-sharp. Of course, this is a generalised statement. The surge in globalisation today, is because of improvement in communication and infrastructure, and the wisdom associated with the subject itself. The world is more aware today. The globalisation process, however, was not continuous; there were interruptions. Each time it came back, there was a change. If that is so, then today’s globalisation may also function towards an interruption. “When is the interruption expected?” is a question that cannot be answered. Even the style of interruption could be different. Technology, including communication, will always remain the driving force of globalisation and associated wealth generation, accumulation and retention. But, economic security is not about attaining affluence. It is about assured well-being with respect to the earning capacity and purchasing power of an individual or a family group in a society. It is the assurance that matters. To that extent, globalisation is just a supporting element of needs if played effectively. That is the difficult part. In analysing the current state of globalisation, it is important to know that the integration of world economy that lead to it is not complete. For example, there are financial markets that are not completely integrated in a global scenario. Lowering the barrier for foreign trade is another factor. There is also the requirement

of product-market integration as well as reducing the time to market. Difference in taxes and inefficient distribution systems can affect global product-market integration. It shows that the globalisation process, irrespective of its reality, will function under local parameters whether it is under resistance or not in that country. Globalisation is checked by default in its expansion towards market destruction elsewhere, by natural laws. These laws are deep-rooted in the psychology of the economic mind—the psychonomics factor. In its actual sense, globalisation is integration of product markets, financial markets, capital markets, labour markets, and commodity and resource markets. There are no signs that they will integrate totally in the near future. Globalisation of the world today, is very partial and based on need and opportunity. It is more spoken than practised. The markets that are not integrated or the part of the market that is yet to be integrated will remain national. Another aspect is that globalisation is expensive. Unless there are means to keep the costs under check—cost of communication for example, globalisation will face a setback. Liberalisation, in an economy that cannot afford to or is not yet ready to play the globalisation game can be counter productive. Under such situations, the process of globalisation should wait to accrue maximum benefits. The free trade that exists across the border is dependent on the capability of the nation to trade with another across border. There will be a deficit. The ideal situation is when a nation can do as much free trade as possible with another in a competitive environment. But there are other theories too. Global trade includes goods and services that move across borders. According to one economic thought, the real benefit of trade lies in what one imports and not what one exports¹³ because, for economists the real purpose of export is to develop the capacity to import.¹⁴ According to this theory, the commodity that is received is the benefit, not the commodity given. This is the actual effect of globalisation. Ideally every nation stands to benefit by what it has imported and this maxim supports the health of global economic security under the trans-boundary principle of economics. Politicians and self-informed nationalists will support domestically made product for political reasons.¹⁵ For the politician, it is a professional requirement, whereas for the latter it is a belief system—a psychonomic interlude. The argument in favour of domestic product is that it will be cheaper and will yield employment. The counter argument is that the product's quality will suffer if it is not under competition, and import opens up employment in distribution, retailing etc. Such arguments could go on endlessly. According to one trade theorist, the benefit of exchange of one product for another remains in the one that is received, not the one that is exchanged.¹⁶ The fact is that a nation will be better off by trading what they are good at producing within the comparative advantage. In such a case it is a win-win situation. Comparative advantage is assessed on products over which one has an edge within its absolute advantage compared to another country with which it prefers to trade. There are oppositions in outsourcing or trading on comparative advantage, which is based on one of the most sensitive issues of economics: jobs. Handling job issues can turn around an election for a political

party. Loss of a particular job is true in the case of outsourcing. Comparatively rich countries view this threat more, against poorer countries. Is it an overstated apprehension? There will always be work for higher wage countries. It is a question of identifying them. Economic benefits of trading under a regulated and disciplined world trade system can create jobs. The key factor in playing the game of globalisation is assessment of comparative advantage, not absolute advantage. Whereas absolute advantage is the gain one has over the other, comparative advantage is based on relative advantages.

MONEY TRAIL AND INFLATION

An economy has a pace limit at which it can grow in relation to supporting factors. This is the limit that has to be identified in order to elevate as well as to optimise. There is semblance of this limit at the point inflation takes off. Inflation is too much money chasing too few necessities. Prices increase persistently. Beyond the pace limit, inflation downgrades economic security. Inflation should be driven down to the limit required to maintain the desired pace of economic growth. Sound management of the money trail—the direction the money moves—is the way for it. Illusive money or funny money can give the feeling of growth and richness. But the money trail leads to real money that is available. Against this background, fighting inflation is a game of hide and seek. Those who play with money see inflation with a relative viewpoint. Hence the money trail varies for individuals, governments, financial organisations, market watchers and other stakeholders. The length of the trail varies to the observer. The trail therefore becomes misty, especially in a crisis situation or when a crisis is brewing. Panic always sets in before time in money matters. These early situations nudge the chance that otherwise would have been available for corrective action in money trail recovery.

Globalisation, liberalisation, etc. may be supportive in controlling inflation. Reducing duties to check inflation is one method, but that may make prices fall but increase demand thereby raising the price again. The idea is to diminish demand. Psychonomics plays a part. For example, informed workers may cooperate to control inflation. Low inflation again is not a preferred condition. Inflation control involves both monetary and fiscal measures for the short term. Increasing the cash-reserve ratio, adjustments in the repository rate or asking banks to absorb excess liquidity in the system can help to tighten money supply. Tightening credit to prevent it going out of control is one policy; food price stabilisation is another. Inflation needs expert and professionally measured response. The time of the year when inflation is expected to rise needs to be checked before hand. Preferred methods could also be counter-productive. That has to be tested. An example is the traditional method of hiking interest rates. The result could be a nervous market. The fiscal side is more endearing in such a situation: cut in customs duties on identified products of import and select consumer goods to ensure them cheaper. Understanding the reason for inflation is important for handling it. Inflation is a

symptom, not a disease. It can be imported or domestic. The cause cannot be attributed to favourable entities like oil prices though it may have a cascading effect on inflation. Government spending, edible oil prices, commodities, price shock, money flow to people on credit, credit worthiness and credit ratio of people, customs duty withdrawal, etc. are fine to target if they are contributing to the price rise for manufactured goods. Ad valorem duty, proportionate increase in duty and then price, where price chases duty is also debatable. There are over the board solutions such as tariff reduction. If demand leads to more goods, easy credit policy is an option. When consumption goes up, the government can advise people not to chase expensive products. It is people participation and involves psychonomic patterns of inflation control, never exercised so far. Partially, the mysteries of economics are hidden in psychonomics. Domestic as well as external factors govern inflation. Inflation is often seen against interest. Interests accrued can be weighed against inflation. Inflation reduces returns on investment. Loan interest increases. Being entirely insular, the stock market can cut into margins of companies. Inflation may increase, reduce or vacillate depending on the measures taken and their effect on the economy. Outsmarting inflation will be a classic lesson in economic security. There are no magic ways to beat inflation. The key for inflation control may lie in the investment market, where the pattern for investment can be changed and seen through risk profile and analysis. From the actuarial viewpoint, it is the realm of financial engineers.

The security intelligence agencies follow the money trail in their investigations by watching where the money comes from and where it goes. Those responsible for watching the money trail in economic security could follow it. That requires excellence in economic intelligence.

ECONOMIC GROWTH

Theoretically, a knowledge society, can be very supportive to economic growth. This is because, people are aware. The economies that decide to ride the upward trend of social changes can reap rich benefits provided they have the necessary knowledge expertise. However, a growing economy will be hard to tax and regulate.¹⁷ Under such circumstances, the government has to find effective apparatus to measure the economy and its growth rate in order to tax the beneficiaries. Following the money trail then becomes easy and subsequently leads to devising better ways of taxation. A growing economy needs to adjust with changes that are sometimes too rapid. The change need not be monetary alone. There will be change in government and changes induced by war efforts, disease, draught, information systems, knowledge or any other push-pull factors. The push-pull factor induces rapid changes in a growing economy. If the pull factor is more, the average citizens enjoy better standards of living. Their purchasing power and access to money increase. As long as the feeling is not illusory, it supports economic security. Text-books on economic security may start with the topic of creating opportunities for assured monetary return for the citizens of the land.

A friend from an erstwhile powerful country once remarked that in his country the best place to keep the money was in one's own pockets. There was no faith left in the banking system, let alone the investment market. When financial markets fall and interest rates rise, the government's debt-service costs go up. There will be a sharp devaluation of national currency along with Good Samaritan support from overseas. This could be from the World Bank or International Monetary Fund (IMF), if not the superpower (whoever it may be) itself. The government temporarily becomes powerless compared to even the traders. It is worse in small countries that have a budget less than that of the next-door smuggler, drug trafficker or the cruise line company of the ship anchored in the bay. A government can get into such financial jeopardy in spite of following all the book rules that will make even a student economist burn the textbook. A lot of such things have happened in the world close to the new century: European exchange rate mechanism burn out (1992–1993), the Mexican peso crisis (1994–1995), Asian crisis (1997), Russian debacle (1998) and the Brazilian knock-off (1998–99) are examples. Most of them were attributed to government mismanagement. It is the government, the guardian of national security, who is accountable for economic security to its people. Do the governments have limitations? Some say the governments are powerless to defend their countries' economic interests in a global market.¹⁸ Massive international capital flow through electronic bond and currency trading has taken the power of regulating a nation's economy away from the government.¹⁹ The blame for a debacle is put on the financial markets.²⁰ Inadequate policies can cause the collapse of the currency market. Currency speculators can easily take advantage of it. Economic growth will be the victim. According to Jacques Chirac, the president of France, financial speculators are the "AIDS of the world economy."²¹ The bottom-line is that governments can easily lose control of the economic growth of their own nations unless they are competent enough to find ways to circumvent speculative impacts. This is important, because economic security cannot be outsourced, even from within by the government. Besides dusty economic textbooks, governments and their economists, including finance ministers, are armed with various tools for financial upheaval by economic growth. Some of these econo-kits may be borrowed as add-ons under an imaginary franchise to contain economic upheavals. They are in the form of theories, anecdotes, regulatory measures, taxes, public spending, interest rates, credit controls, exchange rates, capital controls, income policies, etc. But these tools can only follow textbook administration they cannot exercise control over the outlandish onslaught of the neo-economists who plunder the financial markets by legal speculation. These markets have tremendous power under the new knowledge in an information regime that may be beyond the reach of a government. The powers of a government over their economies were traditionally based on the ability to tax, print currency and borrow finances. In a liberalised and globalised market, the government loses absolute control over these since the markets have many choices. Under such a situation, the government may resort to economic deception of its citizens. The

scenario is ripe for many clashes between financial markets and economically ineffective governments who promise heaven to their voters. For the common citizen, things will look up as a result of liberalisation and globalisation. For once, the element of economic security seems to be not with the government, but outside it. It may be wise for governments to work with the markets, not against them if they want to hold the key. And, they have to.

Fly-by-night market operators indulge in creating sudden wealth and then channelising it for other income generating activities. Such activities may affect economic growth. Even if the latter is basically within the law, the original investment income may come from fraudulent activities. The parallel economy finances thus get into the mainstream money line like sewage in the drinking water supply. The result is yellow money. Yellow money is when black meets white. This causes serious economic turbulence in the fiscal calculations of the government. Public offers and financial companies, etc. can be easily brought under the law to cut fraud. Even in legalised and strong companies, there could be income that is withdrawn behind audited reports. Industrial companies, financial institutions including banks, etc. can fall inside the fly-by-night operation systems. Fraud is a killer of economic security and it is everywhere in its original and disguised form.

The credit rating of a country is often seen as an indicator of the level of economic security in certain quarters. When it is done under specific objectives, for example, to attract or distract investments, such credit rating loses its value from the point of view of economic security. Credit rating depends on domestic debt. Debt is strictly an ongoing issue in economics and is a means of investment for wealth creation. For an economically vibrant nation, debt should not be viewed as a drawback. There could be debt even in a heightened economic security situation. Profitability is rooted in debt even in individual finance. For a nation, the credit rating loosely speaks about foreign currency outlook. However, economic reforms boost credit rating, but they are not signs of economic security unless ripened into profits and thereby contributing to the purchasing power of the people. The economic growth model is based on human capital, technology, information and knowledge in the changing world. In the past, it was labour and capital. Growth has to be continuous. Human capital should be associated with growth by new methods of production, products and management of processes. It should not amount to job stealing from people, but job inducing. Only then will living standards improve. This is to be seen in the growth in GDP per head. Economic growth will depend upon trained personnel ratio for different age groups, the quantum of world trade, foreign direct investment (FDI), tourist arrivals, etc. The strategy is to see that people are equipped with the skills needed for high productivity and quality. The key areas for model economic growth are infrastructure development, labour productivity, investments, capacity and utility of plants and productivity of capital. For successful wealth generation, the higher they are, the better. An empirical study by the World Bank shows that the income rise for the poorest of the poor and the rest are at the same rate.²² That is the advantage of

growth since there will be overall balanced development. The upward nudge in income parity of the rich and the poor is the underlying principle of viable economic security. The gap may still widen, but it is the momentum forward that matters.

GOOD ECONOMICS AND GOVERNMENT

Fiscal and monetary instruments of policy govern good economics. They could be many—labour reforms, disinvestment, subsidies, liberalisation, government spending, interest rates, surplus funds, deficit management, etc. Most of them are legislated. Some ideas may be forward-looking, like capitalisation of brainpower. Research and development, technology and quality of human investment matters considerably in good economics, as can be seen from many countries where, in spite of huge reserves of high value resources, development is retarded. An example is places like the Central African Republic where a fourth of its people are isolated in spite of huge reserves of gold, diamonds and uranium.²³ Economic security is related to growth that can be affected by many factors: plunging stocks, terrorism, scandals, etc. A government needs to know the economic state of a nation at any given time. Though there are many methods to arrive at this, it is imperative it goes through a SWOT analysis (strengths, weaknesses, opportunities and threats) of its economy from the appreciated data. A hypothetical SWOT analysis may follow the pattern in Table 8.1.

TABLE 8.1 Hypothetical Economic SWOT Analysis of an Assumed Developing Country

Strengths	Low inflation, soft rates of interest, large foreign exchange reserves, low external debt, strong service base, healthy export growth, human capital, technology, knowledge base, stable government, high GDS, high GDP, high credit rating, etc.
Weaknesses	Weak investment demand, high fiscal and revenue deficits, slow reforms in labour, slow banking, poor social and physical infrastructure, small-scale reservations, unplanned increase in population, terrorism and insurgency pockets, disaster prone, heavy military and government spending, resource crunch, etc.
Opportunities	Potential in the service sector, attractive equity valuations, globalisation trend, diversification of agriculture, derivatives market growth, international credits, opportunities for global service provision including human capital, etc.
Threats	High global oil prices, uncertain global economy, backwash of drought, poor governance, protectionist state government policies, illegal immigration due to insurgency in the neighbourhood, cross border terrorism, etc.

In this study (Table 8.1) the growth rate as seen in the last fiscal year was taken as 5–5.5 per cent. It is considered just sufficient to make an upward trend, if careful.

The macro-economic environment is considered stable. The economy has to be managed under global uncertainty that is expected to prevail. Even global certainty cannot be a support for unplanned or wrongly planned economic development. The world economy at a given time can be bullish, bearish or recovering. Security concerns will remain paramount. The country will need 8–10 per cent growth, at least in the next few decades to make a dent on poverty and backwardness because of high population—a weak area. Resource hurdles and constraints in agriculture, industry and service sectors are to be watched for. The government may simplify tax reforms. The concentration on collection of tax should not be on small income, assured return people like salaried employees, but high income, unknown trail individuals and groups. Basic tax structure should be on the high income, non-assured group. Tax evasion should be seen at that level because the tax generated should be profitable to government policy. Government spending needs to be arrested and military spending optimised to EDS.

In good economics, savings is a high point. Savings of a citizen is an important outlay to economy. The characterisation of savings into investments is even more important. The rate of gross domestic savings (GDS) (as percentage of GDP at market price at a time) can give a hint at the economic stability of a nation's savings to provide fuel to the national saving investment schemes. The saving trend of the people is based on psychonomics. Citizens should be encouraged to save through attractive saving instruments, exclusively for special and fixed income groups. Special income groups include interrupted and varying income groups whose income may not be constant at a specific time. While interrupted income groups may have breaks between earnings, the earnings of variable income groups fluctuate without break. Special income groups also fall under various categories according to their earnings, as in the case of fixed income groups with respect to wealth accumulation. A majority falls within the special income category in a highly populated nation. There could be special saving instruments for fixed income groups. Targeting such groups on the tax plain is difficult, although receivables in income tax are high from such income groups. Fixed income groups are easy to target for tax, but receivables will be comparatively low. For these reasons tax and savings are to be seen together for national wealth generation.

The growth rate target depends on the economic goal which may be highly ambitious or relatively modest—to overtake all others and become the super economic power, to increase national power, to provide employment, to continue growth, to make a dent in poverty reforms, to lower poverty line, etc. The required growth rate will be different for each economic goal and each country. That has to be assessed. Governments often involve in self-promotion. Though information transparency is a desired situation, such information systems tend to lean on populist efforts. Can populism cause bankruptcy? This is a question that governments, especially democratically elected governments have to ask themselves. Populism is seen the most among democratic governments, whereas in centralised governmental systems, populism is in the alms distributed among those loyal to

it. The fiscal deficit can swell in a populist economic recipe. The government can lose face. At the same time, it can lose power in the next election, if it is not populist. Striking a balance is extreme necessity. With respect to GDP, fiscal deficit is seen as its percentage. The idea is to see that the investors including foreign institutional investors (FII) do not flee the scene because of unattractive and risky offers. Regaining them will be difficult. The government is an investor in the absence of others in a public investment. That is opposite to privatisation. Public investment is a reverse process. A government needs money and it has to come external to it, not from itself. This single argument calls for privatisation and downsizing public corporates. There will be an increase in unemployment, which in turn dents populism. That is a catch that has to be seen by opportunity within the SWOT analysis. Government spending, besides contributing to inflation, also induces a tax burden on people. There is no government expenditure that will not burden people financially though it may have positive effects of social enlistment. Such spending could be populist to some sections, but will not be a measurable achievement. Therefore, the return on such spends needs to be assessed scientifically. Failure in governance will show its first sign in economic security. The most populist approach that a government will take is employment guarantee. Instead of direct employment, it is productive employment avenues that could be seen. But that proposal will not be populist except in a knowledgeable electorate. Psychonomics is crucial here. Employment security, social security, etc. are conjectures and not even conditions in the national security theme. Employment guarantee will result in huge contingency liability to the government. It has to come naturally, within the process of maximising economic security. In spite of the constant struggle between populism and economic realism, democratic system forms a better model for governance because of its variables for assessing and analysing economic security. Peoples mandate indirectly hints at their economic aspirations. Election is commonsense approach towards sustainable economic development. People aspire for employment and decent living standards. The character of the society is also important—farming, peasantry, industrial, religious, radical, etc. Economic development with an emphasis on jobs will be the average person's lookout. Agriculture, manufacturing, infrastructure and service industries related to key areas for employment and wealth generation should be the prerogative of the government. Non-wealth generation employments like the military and other armed forces, affect economic security differently. Armed forces are expense entities. Beyond the optimum, they drain off economic security. Militancy managers prefer to outsource even armed conflicts—mercenaries are examples. Insurgents rope in children—that is cheap labour. It is interesting that financial management of militants and insurgents, is economically much more pragmatic than that of a government in maintaining armed forces. Of course, it is not a model to follow since the asymmetries are riddled with far too many variables. An annual growth rate of eight per cent is considered good by governments in a national economy that generally comprises manufacturing, agriculture and services. A good economy

means flow of investments. There is also an informal hierarchy in the economic stature of the world. The world is divided informally as the first world, second world and third world. The first world's nations are counted towards economic security in some cases. If that is so, it is democracy and capitalism that invigorates economic security. Capitalism had different boosters. In the beginning, it was money-based, but soon followed by industrial revolution that changed it to technology-based. Then came planned globalisation followed by information technology changing it to knowledge-based capitalism. The future, some say, could be socialism-based capitalism. According to some, a breed of capitalism-based production and socialism-based distribution may be a solution.²⁴ However this example is not valid since socialism cannot be considered as a booster as in the case of money, technology and knowledge since it is an ideology, which was prevalent along with capitalism and other ideologies of the period. A booster has to be a driving force newly introduced under the system evolution. Even globalisation is not a booster. It is a conditional effect caused by knowledge expansion and enhancement. The future may see the merger of ideologies by necessity of economic security under the prevailing boosters serving as catalysts. There is a close bond between capitalism, economic growth, democracy and equity. There are examples that a free market flourishes in a democracy—one of the reasons for capitalism's preference for democracy.

The end of colonialism after the Second World War created a large number of new states, most of them poor and underdeveloped. They experimented with various forms of governments. Full-fledged democracies found it better to encourage cold-blooded non-democratic machineries in other parts of the world. They could exploit them. India was another example. It was a democracy that followed the socialist path for over three decades after independence. India realised that the model was not good, and changed it. Governments should be aware that efficiency is *sine qua non* for achieving economic growth. Democracy, according to popular view and right examples, is a proven system of government for economic security though messy and deficient. "Whether economic growth promotes democracy" is a debatable issue.

MAXIMISING ECONOMIC SECURITY

Market fluctuation is a key area that needs the attention of the government in economic security maximisation. The market plays on psychonomics greatly. Gossips will be rampant. For example, a crash can be attributed to panic selling. The competent authority to decide on this issue may vary from country to country. However, their views are important compared to market gossip or analysis by other agencies. Concentrated selling may be an indulgence, but may not be the reason for a market crash. The position regarding a government in economic security related to market crash will be the tried out methods in other countries—both successful and failed. It is not known whether a failed method in one can be successful in another, but certainly a successful method need not be successful

again. The reason is the vacillation in human perception—psychonomics again. Steps taken generally are market stabilisation funds—that will call for a massive corpus—that could be changed with a confidence fund to rein in investor panic. Because, the difficulty is when market sentiments overflow into currency and debt markets, the crisis will become wider. Markets provide investment opportunities. A healthy economic system is where people can invest the money they have for securing economic future. That is the psychology behind savings and investment. The government provides saving incentives and investment opportunities to people. The market should be capable of cheering the investors and not luring them. Power of knowledge is the backbone of investment. Knowledge usage is not to speculate, but to earn and produce. This involves the share market, retail finance market, insurance market and mutual fund markets. In a healthy economic system, the share market has to be stable. The retail finance market should give loans that will not bring the people to the brink of sinking under mortgage or debt; it should power growth for the banking and real estate sectors. The insurance market should provide multiple choices under innovative schemes. The bond market should weed out the weak from the strong in a way that the common investor can distinguish them. The market should provide tax breaks to the investor to encourage saving. Psychonomics influences investment decisions. Therefore, a reality check on investment can be achieved only by controlling apprehensions through knowledge power. It is difficult though, because firstly, it takes a lot to study the market; secondly, it is difficult to get away from the conditioned psychonomic behaviour.

Another area is social payments, especially pension. Poverty among the old may cause a serious dent in economic security unless pension policies are not changed suitably. While pensioners may find their income too low, the non-pensioners without income will aggravate the situation. Welfare measures are not advisable solutions to economic security. Developing insurance and pension schemes as viable economical prospects for the future is an identifiable solution. For the individual, the quick solution is to work as long as one can with ample savings for old age. For this, the government should find ways of employment, and employment to generate employment. The problems that pensioners will face in the future can be seen from a comparative study of income dispersal calculated for Britain in a 40-year span (Table 8.2).²⁵

TABLE 8.2 An Example of Income Dispersal—Great Britain (1964–2004)

	1964	2004
Annual salary	£1,000	£27,600
Pint of milk	4 p	30 p
Litre of petrol	5 p	82 p
Dozen eggs	18 p	£1.4
Pint of beer	8 p	£2.15
Home	£3,360	£170,025

Investing is as important as earning. It goes with interest rates. *The Economist* in a study has stated that low interest rates are not always the economic elixir they are projected to be.²⁶ The benefit of low interest rate is to make credit attractive and thereby improve quality of life. But if the lenders withdraw because of cheap interest rates, there will not be money for the borrower. The gain of the borrower is at the loss of the lender. An interesting aspect of this statement is the nullity of the overall gain—the borrower and the lender cannot win simultaneously. Therefore, it is a question of choice under governance. At national level the correct approach is to balance borrowing with lending, otherwise savings will fall. The trade-off is between lending rates and borrowing. Savings go close to investment and purchase. Saving is an individual choice, a psychonomical one, but the government can estimate and attract savings from people by sound planning. People should not be an economical liability. If there are pensioners, their pension is a liability: if not, the economic decline of the aged is another liability. Both ways what comes handy is the savings of the people. If wisely invested, the nation will be able to meet the present and future needs of the society. There are nations where the people are averse to saving; opposite are others who are compulsive money savers. The action plan available to the governments therefore, will vary. Economic security has to cater for employment. Keeping the unemployed on dole is charitable dispensation that most nations cannot afford. The fallacies of unemployment like, “machines may make people lose jobs” have made societies lose out on employment generation by the knowledge revolution. Technology revolutionises products and processes by innovation that increases productivity and the associated benefits—quality, cost reduction, profit, savings, innovation, more profit and more employment. The process is continuous. Employment opportunities have to be seen with an eye on GDP. The ideal ratio for employment in a sector will be proportionate to wealth generation. In a global economy, jobs may leave a country, just like goods. Movement of jobs comes from the belief in free trade and values associated with it. If the value is high it becomes a favoured choice. These changes are inevitable in economic evolution. Resistance will be seasonal. The necessity for outsourcing has been historically established. The earliest incidence of outsourcing, could perhaps, be the period of slave trade and traffic. In the early days, aliens were brought towards the jobs; the new phenomenon is to send jobs to the aliens, which is termed as outsourcing. In its real sense, outsourcing is when aliens handle a job for productivity with profit. It is localised outsourcing when aliens are attracted to the job and externalised outsourcing when jobs go to the aliens. Externalised outsourcing was only waiting to happen, to complete the economics of the job cycle. Governments have three options in planning employment for people:

1. *Employment related to the country within the country or abroad*—outsourcing.
2. *Employment abroad for another country*—localised outsourcing.

3. *Employment within the country for another country*—externalised outsourcing.

Choices 2 and 3 are outsourcing. In 2 people are outsourced (localised) and in 3 jobs are outsourced (externalised).²⁷ Both ways, the nation generates wealth through employment. From the point of view of balancing jobs, a nation has to see that outsourcing whether localised or externalised are balanced to maximise wealth generation. This is the ideal situation. There are other means of balancing employment. One of them is creating alternate employment for citizens for jobs outsourced. Alternate employment will be necessary even for citizens employed in a particular job that had to be laid off seasonally—an example is the marine fisheries sector in which there will be seasons when fishing will be banned or weather will not be conducive. There are also people displaced under developmental activities. The right management process has to be in place to balance jobs between the three choices available to a government in order to get the advantages in maximising economic security under win-win situations. Economic security is a highly amiable element for a win-win situation approach. In localised outsourcing, brain drain is quoted as a loss. The projected reason is that an education provided is not used within the country. A good education system is one of the means of providing for employment in any of the three categories stated earlier—the triple choice employment pattern. There is no loss here. Education is the bedrock of economic security. Job opportunity could be anywhere. An example is the shipping industry. A citizen of a country could be employed in a foreign going vessel under the national or foreign flag as per choice or demand. It does not have to be national crews for national bottoms under national or international norms. In the maritime job market, it will be based on demand and supply and the maritime education and licence of the individual. It is an accepted practice and not considered as brain drain. Hence, “brain drain,” a term that sounds like a deadly neurological disease, is a shot in the arm for a country’s economic security. Take the example of a landlocked country with a high unemployment rate. A large number of its citizens are abroad in localised outsourcing—ranging from prostitution, domestic services to security services including working for armed forces. Imagine that this landlocked country could establish a world standard maritime academy. It will be a Choice 2 job market, a natural responsibility of the government. Any argument on the brain drain issue is also futile if the country’s choice is not the first one—find a job within. The avenues for jobs should not be restricted to Choice 1 alone. The world is the market for employment. In any employment market, the wealth generated supports global economy. The wealth improves the status of the country as a global economic partner. It also has contribution in the element of geostrategic security for a nation, provided such opportunities are effectively utilised. Wealth retention is equally important in economic security. Another question is, “is it advisable for the government to be the largest employer?” It is not an issue that can be taken up unless the wealth generation profile is analysed. It could be acceptable if wealth

generation is at the appropriate level. Hence, employment for wealth generation and wealth protection is useful provided it is over the breakeven figure that a nation has to calculate with respect to its sector specific preferences. It can vary for each nation. People are important to economic security as the prime contributors. In fact, even the definition of economic security can vary from people to people. Economic security for the labour force is income security and represents security according to the International Labour Organisation (ILO).²⁸ The wealth in terms of humans, i.e. the population, is very important. Humans are not resources; they are investment instruments for wealth generation in management. Human investment management (HIM) is the primary key for wealth generation and thereby economic security. For that purpose they could be anywhere in the world. Their remittance is what matters to a nation and not their location of wealth generation. Human investment instruments therefore, become a nation's important core competence. Human investment instruments belong to the number that is available among the population in trained professions. The crux of the problem lies in the social order. Systems that admit and accept poverty and unemployment are avoiding economic security.

Besides jobs, revenue and fiscal deficits are different items in the agenda for maximising economic security. They relate critically to economic stability. They have to be reduced. In this case, deficit financing is an indicator of government apathy to incompetence and inefficiency, tax evasion or wasteful spending. It needs a specific objective oriented plan that will collect factors for reduction in course of economic progress. Elimination of revenue deficits and reduction of fiscal deficit are important portfolio functions for any government. Close monitoring of decentralised finances are necessary to keep up the decentralisation process. In finance, monitoring is not centralisation. A country needs clarity in devolving financial authority between the agencies that handle finance—central, state, local bodies, organisations, etc. A unitary fiscal system is not advisable, because it is a centralised approach. It will stifle wealth generation. The dictums of deficit reduction should be incorporated within the corporate and other economic governance procedures. Another school of thought is that deficit is an essential ingredient of economic security. Deficit consciously stimulates the economy. A deficit is about overdraft in certain cases, and certainly not about excesses. An overdraft defeats time in economic security with a certain risk element thrown in. Often it is manageable risk because it cushions shock and supports development against time. Secondly, deficit financing has been there for long and so far it has not brought down the bourses of national economy to their knees. If a national economy has collapsed, it was due to many other reasons though traces of deficit could be spotted in the post mortem. The opposite of deficit is surplus. The laws of economics are clear that surplus cannot be maintained without corresponding deficit elsewhere. If deficit is a debt, a well-managed deficit is a positive debt. While global economy is a closed system, the trade-off has to balance—world saving must equal world investment. In 2001, Atal Bihari Vajpayee, the prime minister

of India, while expressing concern over the nation's slow economic growth, put forward a plan comprising 14 measures inferred as leading points towards economic security for the targeted growth of eight per cent in the 10th Five-Year Plan:²⁹

1. Correcting weak finances of centre and state
2. Downsizing government staff
3. Reduction of untargeted, non-merit subsidies
4. Power sector reforms
5. Boosting food production
6. Labour reforms on a priority basis
7. Financial sector reforms
8. Foreign direct investment promotion
9. Removal of red-tape (delay in bureaucratic clearance and disposal)
10. Removal of deficiencies in the judicial system
11. Disaster management plan to counter floods, drought, etc.
12. Population control
13. Devolution of powers
14. Pro-poor focus

In this multi-pronged approach, hidden concerns were the mounting revenue expenditure and borrowings for it. Economic instability is harsh for a nation. Many solutions follow in overcoming economic debacles. For some, it could be development in education, health and infrastructure, unfettered investment flows by deregulation, efficiency in government outlays, etc. The suggestions should be pragmatic and result oriented. Government needs resources. It may have to increase the tax-GDP ratio considerably for infrastructure or, as the government in India has brought out, Project triple P: public-private participation in infrastructure.³⁰ Even that needs money. Increasing tax-GDP ratio, if done by increasing tax rates, will cause trouble. Better coverage and compliance is an alternative. The method inertia in the system—the accepted practices of the past prolonging for no specific reason—can block the efforts. Here again, the treatment is partially through psychonomics. Whichever may be the chosen method, better utilisation of government funds is important. A thrust in the area of micro finance is what the governments with high population density can think of. But most of them are not daring enough. Bangladesh had successfully implemented the Grameen Bank principle that supports rural low-income people. Other countries where such banks exist have never been so successful. It is a matter of commitment and implementation of policy matters under supporting conditions. Micro credit availability can lock up hidden avenues if supported by post-credit assistance. In India it often ends up in suicides, as reported from farmers in deep debt and poverty. The principle of economic and fiscal governance towards economic security lies in generating and retaining people's confidence rather than in maximising returns.

ECONOMIC SECURITY INDICATORS

There was an incident in India where the starving parents sold two of their children for Rs 1,100 (about US\$25) and 15 kilogram rice in the state of Orissa in September 2001.³¹ The investigative journalist who bought the children gave a saucy report. One of the reasons that have been attributed for the population explosion in India is the relationship of unit cost to marginal cost of family life. The marginal cost is high for a lower middle class family upward, whereas it is not so for the poor classes because the child earns or supports earning—begging included. The case in point—the child sale—will take the cake. Children themselves have become saleable products in distorted economies. This is the pit of economic insecurity from where it has to be viewed upwards. This concept, therefore, is not dependent on its height, but depth. How economically secure are the lowest? That gives an indication of economic security. Beaten track economic indicators may mislead planning for economic security. Capitalism, Communitarianism, Communism, Socialism, Naxalism, Robin Hood syndrome, etc. are methods the world has used in an attempt to find a solution to the problems. But still, a whole lot of people are in the pit. Economic issues always bring up different vignettes for the same issue. That will make it difficult to appreciate the real economy and the real problem. It has therefore, to come down to factual indicators, provided they can be identified. These indicators will include those that point out to the problem and those to possible solutions. When the stock market index dances on the electronic board as unsettled as ever, it may indicate market sentiments driven by psychonomic factors, not strictly by economic security matters. But it can lead to loss or gain to many. The gain, from the point of view of stock value increase is a kind of funny money for the company. Further, the stock can crash and at a particular stage the impact will be on the overall economic security. The dancing index of the stock market does not immediately indicate the fate of economic security. It may show some signs when it settles its rattling even for a brief moment. Therefore, it is imperative that governments watch the volatility of stock markets, or rather, accumulation of funny money. Some of the usual indicators of economic security are the GDP per head, consumer price index, budget deficit, defence spending, stock exchange average, mortgage and lending rates, inflation, unemployment rates, attitude to savings, and yield on government expenditure—education, health, farm extensions, social security, subsidies, etc. Other factors that qualify for serious examination are:

- Psychonomic aspects
- The hypothesis that stock markets are distantly related to the real economy (volatility of a market is part rigged and part speculative)
- Market driven politics to people oriented politics
- Social harmony
- Empowerment of the underprivileged

- Equality of opportunity
- Employment guarantee with asset creation
- Family based programmes in family oriented societies
- Food for work programme
- Public investment in agriculture, rural infrastructure, irrigation, etc.
- Increase in the flow of rural credit
- Emphasis on small and marginal farmers
- Minimum wage assurance
- Correcting fiscal imbalances by eliminating revenue deficit
- Financing the programme by direct taxes
- Regional disparities within a country
- Populist economics
- Tracking parallel money trail to contain yellow money
- Global disparities

Pairing relationship between the opposites is an interesting field in the study of economic security specific to a country. Such contrast pairing can be seen among many social entities—capital and labour, government and tax payers, industry and agriculture, globalisation and localisation,³² town and country (urban and rural), political parties, home and society, non-residents and residents, minorities and majorities, etc. Strained relationships between these entities damage economic forces and lowers economic security in a society that is not knowledge-based.

ECONOMICS AS A HAPPINESS INDEX

Hardly anybody subscribes to the view that money cannot buy happiness. Happiness is a fleeting feeling. However, money and other social aspects can be related to that feeling. The Economist Intelligence Unit, carried out a survey in 2004 in an attempt to compare happiness around the world based on the principle that wealth is not the only measure of human satisfaction. The index of 111 countries combined data on incomes, health, unemployment, climate, political stability, job security, gender equality, as well as what the magazine calls “freedom, family and community life”—basically an index of happiness, not national security. Economic security can provide happiness to a certain degree. The study showed Ireland was the happiest country with a score of 8.33 on a scale of 1 to 10; Zimbabwe was the worst at point 3.89. It had problems—political insecurity, hunger and everything else that can take a smile off the face. Really? Even the poorest of the poor could feel the whiff of happiness at very special moments—that is what the psychologists say. Ireland’s reason to be on top was that it enjoyed the highest rate of all factors that assessed happiness—high GDP per head, low unemployment, political liberties, and stable family and community life. In other words, it was the old and new combination in a compatible manner that the surveyors found was the new formula for happiness. While China was at the lower half as the 60th, Russia slipped to the bottom as the 105th. Another report last year by the *New*

Scientist showed Nigeria as the happiest nation followed by Mexico and Venezuela. The most miserable (unhappy) were the citizens of Russia, Armenia and Romania.³³

MOUNTEBANKING IN ECONOMIC SECURITY

Economic security often gets entrapped in the money peddler's domain. It is wizardry of funny money thereafter. There are many companies, projects, businesses, investment and banking dealings, etc. that are managed in this manner. Some of them are state sponsored. They run with the ethics prophesied externally. Internally, it is a matter of diverting money for vested interests. In this process, the investors get deceived. Mountebanking the public is a common feature in most of the financial dealings in the world. Assurance of government against such peddlers will promote confidence among people and thereby complement economic security. Economic mountebanking is cheating people of their money in a way that they do not easily come to realise. Many public corporations use public money for private gains. It is the crux of many business houses where access at the top is only for a select. Monies from the public listed funds are siphoned off to promote private companies in the select group's names. There will always be a parent company from where money is siphoned to promote others of which the stakeholders need not be those who originally invested in the flagship company. It is investment trafficking. The original investors whose money has been siphoned off to another do not qualify for the profit allocation in the form of dividends or interests. The fiddlers in the boardrooms turn it around. Often such deals end up in disaster for the companies, original as well as auxiliary, with the burden of the loss on the shareholders. By the time the sleaze drools out, the government will find it difficult to salvage the situation. Even state-owned companies might invest money in doubtful instruments under sleaze. Often such dealings are done under broad lights in the boardrooms without disclosure to the investors. The main promoters convert their shares into sweat money—for working for it! Other promoters too may not be aware of it; last to know will be the government machinery. Corruption and sleaze plays a heavy role in such dealings within a political system. All parties stand to benefit except the people—that includes the shareholders who have been swindled by breach of trust. Here is where structuring of effective corporate norms are necessary under economic security. The problems become worse when such companies are public limited with a wide shareholder base and heavy market capitalisation having huge stakes in government-owned financial institutions. Though universal as a behaviour pattern, corruption is the scourge of economic security. The opposite argument is that corruption fastens economic growth, by shortcircuiting policies. Whatever may be the argument, the root of corruption lies in the pit of perceived insecurity. It is strong enough to blow up the entire economic security programme of a country, especially in a politico-bureaucratic system where everything is decided on toxic money. The government alone can change it.

CONCLUSION

Economic security is based on free trade and looking at global economy as an open system. Long-term economic growth will be stunted in a closed system. The role of government in economic security is finding a way to NS_{max} (maximised national security) by capitalising on the economic security concept, which is the basic need promoter for human beings. But economics can turn even the most rational to irrational. Simple assurance may not be sufficient, even a rap on the knuckle by policies, regulations, rules and taxation will be necessary to steer people towards economic security. A case in point is one that comes from Pakistan. The Supreme Court of Pakistan banned extravagant feasts in wedding ceremonies. A wedding ceremony that may last up to five days of sheer spending in feasting under pure socio-psychonomic conditions in Pakistan can put a family into debt for life. The order may save many families to keep their dignity as well as their spending under control.³⁴ Another problem that many countries may face in money management is of a parallel economy—conveniently called black money, the money on which the government does not get taxes.³⁵ Black money can threaten to destabilise the organised economy of a country. In India, the estimate is that black money prevails around 20 to 40 per cent of the GDP. It is worse when black money leaches into legitimate money. The result is yellow money.

Notes

¹ A new word that is necessary to explain that the way money behaves has a lot to do with the behaviour and personality of the holder, whether an individual or a group.

² 34th president of the United States.

³ Joseph J. Romm, *Defining National Security—the Nonmilitary Aspects*, Council on Foreign Relations Press, New York, 1993, p. 53.

⁴ Ibid.

⁵ Ibid. p. 56.

⁶ Butterfly effect is a term used by the weather people. It is said that disturbances in the atmosphere caused by the flutter of a butterfly in a garden may contribute to the weather pattern in a far distant place cross borders.

⁷ Scottish economist and philosopher.

⁸ Ashwini Deshpande, “Economy in Logjam—Fallacies of Liberalisation Dogma,” *The Times of India*, Mumbai, 28 July 2001, p. 10.

⁹ Swaminathan S. Anklesaria Aiyar, “Why Do Democracies Remain Poor?” *The Times of India*, Mumbai, 2 September 2001, p. 12.

¹⁰ But in actual sense, as in religion, there are also differences in economics under the principles of psychonomics, where one person’s economics could be different from that of another.

¹¹ The global economy functions in a closed system—the world itself. A nation is a sub-system. Since global economy has to face problems associated with a closed system, a closed national economy as a sub-system, will undergo faster decay associated with the closed system entropy. This itself is sufficient to prove that global opening out is very essential for a national economy to survive (longer). Under the current situation and more so in

the future, it will also be difficult for any nation to close its economy anyway. This is by evolutionary default and is a positive sign that the problems of economic insecurity that the world may face in the future will be less serious than what it faced in the past. The changes are permanent, though the law of invariance will pervade at the core of the human system.

¹² “Bring Down Trade Barriers—Commonwealth to Rich Countries,” Commonwealth Secretary General Don McKinnon said, *PTI News Scan*, 27 December 2002.

¹³ *The Economist*, Economics: Making Sense of the Modern Economy, Profile Books Limited, London, 2001, p. 24.

¹⁴ *Ibid.* p. 25.

¹⁵ *Ibid.* p. 9.

¹⁶ *Ibid.* p. 25.

¹⁷ *Ibid.* p. 87.

¹⁸ *Ibid.*

¹⁹ *Ibid.*

²⁰ *Ibid.*

²¹ *Ibid.*

²² M. Veerappa Moily, “Reforms: Riding the Indian Tiger,” *The Economic Times*, New Delhi, 2 June 2004, p. 18. The author highlights the findings of the study of the World Bank’s Development Research Group. An empirical study carried out in 80 countries over 40 years, entitled “Growth is Good for the Poor,” shows that the income of the poor rises one-for-one with overall growth. That means the income of the poorest of the population rises at the same rate as everyone else’s in a growing economy.

²³ “Tharoor’s Top Ten,” *Hindustan Times*, New Delhi, 12 May 2004, p. 19.

²⁴ Yashwant Sinha, “For the Meek to Inherit the Earth,” *The Asian Age*, New Delhi, 6 August 2004, p. 13.

²⁵ Rupert Jones, “What A Difference 40 years Make,” *The Guardian*, London, 16 October 2004, p. 27.

²⁶ *The Economist*, n. 12, p. 265.

²⁷ Note that the term localised is more specific than internalised. A term that many Americans use to express the job loss by outsourcing of jobs elsewhere outside the country (externalised) is “Bangedored.” The US outsources a good amount of IT jobs to firms in Bangalore, India, which according to the Americans is a job drain and has been strongly debated as an election issue in the Bush–Kerry campaigns in the presidential election of 2004. Such outsourcing according to the principles of economic security should not cause any alarm. It is an overall healthy sign of globalisation of economic security. Alternate employment is a solution for job loss, though. The issue is incidental.

²⁸ “Globalisation has Slowed Down Growth,” *The Hindu*, Chennai, 2 October 2004, p. 4.

²⁹ *The Economic Times*, Mumbai, 2 September 2001, p. 11.

³⁰ Sandeep Bamzai, “Triple P to Power Infrastructure Push,” *Hindustan Times*, New Delhi, 18 February 2005, p. 19.

³¹ Arun Maira, “Knowing the Real Economy,” *The Economic Times*, New Delhi, 17 June 2004, p. 6. The family rationalised their guilt by stating that it was the only way to save the children from starvation death. Strictly that is not acceptable since the parents sold the children for their own material consideration. It is clear that in a disaster situation

witnessed by the author at sea when a drowning woman clutching her baby close to her chest finally released it in order to save herself.

³² Globalisation and localisation are contrasting social entities. Hence a combined word joining them (e.g. Glocalisation) will not carry substance in meaning and result. When two contrasting pairs combine, the result is elimination of one.

³³ "Ireland is the Best, Zimbabwe Worst," *Hindustan Times*, New Delhi, 19 November 2004, p. 22.

³⁴ Danny Kemp, "Pak Bans Feasts at Wedding Parties," *Asian Age*, New Delhi, 17 January 2005, p. 5.

³⁵ Surnajan Gupta, "Look into the Corners," *Hindustan Times*, New Delhi, 10 March 2005, p. 10.

9

Resource Security

The principal threat to resource security is from those who benefit by it.

It is believed that the first ever war was for a valuable resource—fire. There are speculations that the Trojan War may have been fought in part over tin.¹ If so, getting Helen back was just a ploy. Today, the world witnesses wars for oil and water. Resource hunting was one of the main agendas of colonisation. Scarcity of resources drove nations across the seas to distant lands. In the modern day resource colonisation, dominant nations strategically control the resource rich but economically poor countries. Scarcity can result in conflicts, leading nations to assume rival positions and creating environmental refugees.

ABOUT RESOURCE SECURITY: THE THIRD ELEMENT

A resource is a support inventory for sustaining human life at a heightened level of well-being. People are resource dependent. The Earth's capital comprises a number of life support systems as resources. The sum of all these resources forms part of human environment and therefore, resource security is closely related to environmental security, which is another element of national security. For maximisation of national security, resources have to be managed in a sustainable manner with a zero depletion rate in the future. Targeting zero depletion means keeping the resource balance according to future demand in spite of present consumption. It also means renewing resources by regeneration or alternation at the future rate. In relation to resource security future means, from the next moment to eternity—infinity, that is as long as generations will come and go or usage of that particular resource will last. Doomsday predictions notwithstanding, in the study of national security, it can be stated conveniently that the very purpose of resource security is to maximise the benefits of resources to human beings without allowing for resource scarcity at any particular time. Resources can be classified in many ways. Renewable and non-renewable classification gives a warning on their use. Living and non-living (biotic and abiotic respectively) is a convenient classification. Another classification is in terms of mutability, quantity and reusability (recyclability). The nature of the classification of resources should not affect the way resource security is viewed. Each resource has a separate identity. It

is a question of demand and supply and balancing them with sustainability that in turn, governs availability. Strategic management of resources has to be done under this principle—item specific, not class or type specific.

Utilisation of the world's natural resources has depended, to a large extent, not only on the development of technology, but also on political circumstances. Nations under colonisation could never develop their own natural resources independently and without reference to the economic interests of the colonial powers. Another factor that affected utilisation of resources was cultural attitudes. Cattle for example, are controlled under cultural restrictions in certain countries. Such resources are always seen from the angle of replacement. In such case, the replacement resource becomes the equivalent resource. There could be other reasons too for replacement of resources. A Japanese friend once mentioned that while whale meat was considered a delicacy in Japan, the people actually got into the habit of consuming it because the much-desired beef was expensive. Here, whale meat became a replacement food resource for beef. History also speaks about how people live under a resource crunch, especially in relation to food. There are countries where people had forced themselves to survive on rats when everything else failed. At the same time there are people who may find a well-barbecued rat a culinary delight at a roadside delicatessen. In gastronomic matters habits govern food resources at the top of it all. Habits change according to situation demand. The value of a resource is governed by technology. Improved technology can increase the yield of food resources. Technology also may make it possible to exploit mineral wealth that was previously inaccessible or not economical to exploit under limitations. In the early centuries, land provided almost all resources. Today, people also look up to the ocean. Resource security is about all that supports human life systems in the world.

ANALYSING THREAT ATTRACTION

Resources are high degree threat attractors. Consequences of the threats can vary from resource depletion and resource colonisation, to war. Threat is not from people alone. Natural renewable resources are exposed to larger threats than others. Resource that is required to create resources, both natural and produced, is a major threat attractor if the product consumes them heavily. While it may not have been understood, many produced resources consume heavy doses of other resources, especially natural renewable resources. Resources also can be wasted by callous attitude in resource management. For example, the water cycle in a country will not only be ineffective, but also damaging if the entire rainwater runs back into the sea carrying the topsoil along with it. Over-use of resources is another threat. Often it is indirect. Mostly, it happens to common-share resources. Such resources are natural and not owned by anybody in a nation. Almost all such resources are renewable. They are also included in the global commons. An example is marine fisheries resources. If resource utilisation exceeds its natural replacement rate, the

supply will reduce and sustainability by reproduction will be hindered. There are also non-renewable resources that can be recycled. Recycling is a process by which non-renewable as well as recyclable resource is kept in demand. In an ideal situation, a renewable resource should last forever. But it is not so if its renewability is threatened. Conservation of a renewable resource is calculated based on the maximum sustained yield. It is the maximum rate at which a renewable resource can be consumed without affecting its renewability. Controlling demand or increasing the maximum sustained yield point helps to protect the yield. The latter is more difficult. Extinction of plant and animal life occur when the consumption or destruction exceeds the maximum sustained yield. Over-exploitation, collateral damages in use of resources, increase in economic demand, increased demand by need, lack of awareness, disaster situations, environmental damage, etc. are threats to the maximum sustained yield of a resource. In the early days, control over territory was considered to be the biggest threat to resource rich countries from powerful military countries. In the modern world, the apprehension is that resource scarcity will compel countries to pit against each other.² This may be pre-empted by global market forces in today's international environment. The threat analysis leads to the fact that resource security can be affected by many interactive and intricate possibilities:

- (a) Over exploitation
- (b) Unregulated usage
- (c) Waste
- (d) Environmental damage
- (e) Climate change
- (f) Capital-intensive exploration
- (g) Surging demand by over-industrialisation
- (h) Break in renewability cycle
- (i) Conflicts
- (j) Economic imbalance
- (k) Disasters
- (l) Military campaigns

In any case, powerful nations will endeavour to dominate key energy and other resource producers. Resource fields where access is limited by hostilities will be another problem. Resource powerful international cartels may force politically powerful nations to change policies. Private interests will overlap cooperative security policies making nations attempt independent intervention.

RESOURCES IN RESOURCE SECURITY

Among the resources in resource security, food and energy resources are competent for examination as separate elements. They, along with other vital resources are briefly mentioned below.

Water

The ocean gives a feeling that the Earth is a water world, but only three per cent of it is fresh. Out of this, 2.997 per cent is locked up in glaciers, ice-caps and deep inside the earth.³ At least one fifths of the world population does not have access to adequate water.⁴ Shortage of water causes water stress that, according to one estimate, occurs when per capita availability falls below 1,700 cu.m. annually.⁵ The death of riverbeds and lakes has caused collateral destruction of human systems. Water wars have been recorded as early as 3,000 BC.⁶ Assyrians destroyed water supply to Babylonia in 689 BC, in a war. Many water dams were bombed during World War II. The central dams on the Yalu River were targeted in the Korean War (1950–1953). The United States caused extensive damage to the irrigation water supply in the Vietnam War (1964–1973). Targeting water schemes was repeated in Iraq during the 1991 Gulf War. The largest dam in former Yugoslavia was a prime target during the civil war in 1993. The Jordan River basin is a conflict centre in the Middle East. Israel, Syria, Jordan and Lebanon share the basin.⁷ Major disputes in the world on account of water are given in Table 9.1.

TABLE 9.1 Major World Water Disputes

<i>Location</i>	<i>Dispute</i>
Israel with the Arab world	Sea of Galilee diversion. Water resources in the occupied areas post 1967
Iraq–Iran	Shat-el-Arab waterways
Iraq and Syria with Turkey	Euphrates and Tigris reservoirs
India–Pakistan	Indus waters
India–Bangladesh	Ganges waters (Farakka barrage) Brahmaputra waters
India–Bangladesh–Nepal	Ganges waters
Turkey–Jordan–Syria–Iraq–Iran	Euphrates waters
Brazil–Argentina–Paraguay	Parana waters
Hungary–Czech and Slovak Republics	Danube
United States–Mexico	Colorado
South Korea–North Korea	Han River
Egypt–Sudan–Ethiopia–Uganda–Rwanda–Kenya–Tanzania–Zaire–Burundi	Nile waters
Uzbekistan–Kazakhstan–Kyrgyzstan–Tajikistan	Amu Daria and Syr Daria Rivers, and Aral Sea
Botswana–Mozambique–Zimbabwe–Zambia	Chobe tributary of Zambezi River
Mauritania–Senegal	Senegal River

Approximately one-sixth of the 6.1 billion (2001) people of this world lack access to improved sources of water. One of its focuses is the tragic contamination of water in Bangladesh, where shallow wells were tainted by naturally occurring arsenic.⁸ Riots over water, which people claim to have been caused by privatisation of water resources, were reported in India. Resource gap is increasing between the rich and the poor. This causes riots.⁹ The government of India has a proposal to link rivers into a water grid. River linking may look ideal, but has serious ecological ingredients that may cause unforeseen harm and may even wipe out the entire water resources of the country if carried out in haste without serious study. The study should focus on the chances of upsetting the natural balance of individual link rivers otherwise; it may end up in a great draught in which the rivers will vanish forever, or a great flood that may cause unforeseen damage by inundation. Tail end run-out could be a serious problem. It is a process in which the river or canal dries up at the tail end. This deprivation will take place if the interlinking facilities of rivers are not hydrologically balanced. Serious model studies are therefore, required prior to taking a decision on this issue. The key decision areas in river linking are:

- (a) Need assessment
- (b) Future demand
- (c) Displacement policies
- (d) Legal issues
- (e) Policy matters
- (f) Economic issues
- (g) Ecological concerns
- (h) Disaster issues

According to the UN, availability of fresh water in Asia is only 3,000 cu.m. per person per year. This is the lowest in any continent.¹⁰ Besides shortage, the quality of water is also a concern worldwide. Seepage and migration of mineral fertilisers, pesticides and herbicides into surface and sub-surface waters have become serious. This is in addition to toxic leaching and intentional burial of untreated toxic wastes over land that not only rendered them unfit for gainful utilisation but also disrupted aquatic ecosystems. Open sources of water like rivers and lakes are contaminated with garbage, sewage and untreated industrial wastes. Heated wastewater from nuclear power plants and other industrial facilities causes thermal pollution and its attendant problems to the water-based ecological diversity that assures quality of water in its natural habitat.

Air

Air exists in varying amounts in the atmosphere that extends about 200 km. The main components of air are nitrogen (78 per cent) and oxygen (21 per cent). The remaining part comprises minor and trace gases. Air pollution, depletion of oxygen and ozone infiltration are the major problems associated with air management.

Air is a transporting resource for climatological patterns that sustains the world environment in a balanced manner. Resource security for air has to look at atmospheric stability. Air pollution can cause havoc climatologically. Effect of air pollutants on humans could be life-threatening. Here the attribute of resource security extends to health security.

Food Resources

Global food production is on the increase and so is the demand. According to textbooks, 90 per cent of the food that humans consume comes from about 15 plant and eight animal species.¹¹ Four crops: wheat, rice, corn and potato, make up most of the world's total food production as against all other food products combined. These are produced the world over either traditionally or in an industrialised manner. Livestock production is another aspect of food resources. Global livestock production is on the increase. Food resources are agricultural products that come from biological resources. There are expected to be regulations from the World Trade Organisation (WTO) for the future of agricultural management, including research. Food aspects qualify as a separate element of national security under its characterisation and are discussed further in Chapter 16.

Minerals and Metals

Minerals and metals are formed through geological processes that lasted billions of years. They are exhaustible resources. Minerals are essential for industrial development. The demand for minerals and metals is increasing worldwide. Their conservation is value based. The cost of mining and transportation should be economical in order to control price. Many of the industrialised nations depend upon the continent of Africa for strategic minerals. The main areas of mineral production and most known reserves are situated in the industrial states of the world in the northern hemisphere, in South Africa and in Australia. Japan and Western Europe have few of them. Offshore mineral deposits are associated with the continental shelf. These fields are increasing as and when exploration progresses. Mineral exploration has environmental concerns. Toxic pollutants from mining operations can contaminate water and land resources. Strategic mineral resources are important for military security and power build-up. Oil, manganese, tin, tungsten, chromium, cobalt, uranium, titanium, etc. fall in this category. Mineral resources are unevenly distributed over the world. The effect of imbalance in their unequal distribution will be felt in the geostrategic security of the nations that the concerned nations have to watch for.

Energy Resources

The main sources of energy are coal, oil, gas, nuclear, solar, wind, tide, etc. The demand for energy resources is expected to grow in the industrialised world. Fossil fuel (mainly coal, petroleum and natural gas) is still the primary source of energy

that may undergo a change with the introduction of non-conventional energy resources. Sources for non-conventional energy are the sun, wind, tidal power, wave energy, geothermal, micro-hydel, ocean thermals, biomass, nuclear power and hydrogen. Strategic energy reserves are important in an uncertain world. A variety of energy alternatives are another way to ensure energy richness. Energy availability should not be based on political preferences. It is best tackled under the market forces. Hedging against resource supply limitations will be done by careful planning for production, substitution or conservation. Energy resources overlap metals, minerals and other resources. The subject is also examined under energy security as a separate element of national security.

Land

Land, besides being a terrain is also a supporting resource and its maintainability is of utmost importance for socio-economic development. Certain quarters consider the biggest issue in land assignment is per capita land availability. It may not be so because there are many nations where per capita land availability is small, but still have a higher per capita income or the feeling of economic well-being. The question, “how much land should a nation would have?” originates from here. It will depend upon the population the nation should have to optimise national security management and future needs. However, land issues are also based on the type and nature of land. The land has to be arable, resource bearing, environmental and people friendly, pollution-free, habitable, strategic, disaster-free and free hold from border security aspects. It is a wish list to which more could be added. Land that does not support national security elements or national security maximisation is hostile. Unfortunately, nations have no choice over the land they possess today. They cannot exchange it with another. Manageability also counts. Land degradation is a problem. The land can be lost to the oceans by erosion and rise in sea level. Degradation can cause leaching of toxic chemicals into ground water. Leaching of arsenic into the ground water was a serious problem in West Bengal, India, and in Bangladesh. Arsenic contamination was also reported from China, Taiwan and the Philippines. Another case was mercury poisoning in Minamata, Japan. Toxic pollution can lower soil fertility and moisture content. Land is a resource supporter; even if damaged from the agricultural aspect of life sustenance, it can still hold valuable minerals and energy resources. This makes it valuable. Land degradation therefore, means the decline in its capability to supply resources of value. This decline can come from climatical and other disasters, and toxic pollution. The national security approach should be from this direction. Value assessment of land is necessary for this audit. Sustainability of land is to be seen from its value enhancement as a resource security supporter.

ALLOCATION OF RESOURCES

Resources are prolific in nature, but in limited supply. Their constructive apportionment among the users, or productive allocation, is a strategic decision.

Resources get constrained by demand increase as the nations grow. Therefore, resource allocation is a key aspect for a nation. It calls for pricing the resources in a planned economy besides regulatory measures. The price is the only yardstick, and it will fluctuate based on demand and supply for the nation and the people. The methodology is to allocate resources to obtain maximum possible output from a given combination balancing sustainability, whether renewable or non-renewable. This is hypothetical, but the success of allocation depends on how close the government machinery can achieve it. Opinions vary on resource allocation. Some assume that resources, even those that are stored by the earth, are infinite as long as market prices are high enough to make profitable extraction possible. This is ideally correct, but not practically true because the resource is finite in a real sense. In resource security, the management of allocation has to be based on the limited availability of the resource. Another problem is relative devaluation of assets that go with the resource extraction and mobilisation. The infrastructure in a resource handling facility gets depreciated when the particular resource is depleted or demand for it has declined. There is a certain complementary nature in a system that has to be examined through considered trade-offs embedded in resource exchange in the process of production. Nature's ability to renew itself is a great economiser. But such systems can be effectively blocked by cost-price incentives of market economics. Depletion of resources is natural with economic advancement and human development. The rate of depletion can be calculated with mathematical precision and such calculations are available.¹² According to geologist M. King Hubbert, the production-depletion curve for non-renewable natural resources is bell shaped. The production increases slowly and then sharply reaches the peak and then declines in a mirror image before it is exhausted.¹³ Undifferentiated growth can cause depletion of resources at varying rates. The remedial measures recommended by people vary. For some, it is arresting population growth and curtailing economic growth. For others, it is finding alternative resources and balancing out the population. The solution may lie elsewhere and often varies from country to country with a global solution for monitoring resource management. It is also necessary to know that there are limitations to human intervention in economic growth as well as population. That will happen even if curtailed, because the compelling forces are inbuilt in human evolution. Here, the choice is whether to be in pace or out of pace with these forces. The preferable method is to be in pace. There is certain degree of dependence of resources within themselves. Energy resources are highly dependent upon other resources. This dependence is more capital intensive than labour intensive. The price climb is certain when resource depletes. The consequence is unprecedented inflation that will affect economic security. Instead of capital-intensive resource dependence, some researchers advocate labour-intensive resource dependence to limit inflation and environmental damage. The practicality of these advices is required to be seen. But national governance has a way of settling down when handled by experts on the issues by adapting to the most suitable remedial measures for a particular

country. Rapid technological changes are making available previously uneconomical reserves of resources. Another challenge is to produce them without causing environmental damage.

Global balancing forces govern the supply and demand of resources. Often this control is much beyond the control of nations. Market forces, rather than command economies will decide production decisions. There will be de-regulation in many countries to adjust with globalisation and market forces. Productive allocation of resources is when more is yielded from less. It means more efficiency in production. The input is less and the output is comparatively more. In such cases, one of the inputs is resource, besides capital and labour. Resource allocation for an industry that can produce more from less is the most preferred way of allocation. It does not happen automatically. Such productivity has to follow a particular economic system. That is the one that needs to be identified. Thereafter, resource allocation becomes optimum. In the national scenario, it is productivity with less that matters. Identifying a conducive economic system for such productivity makes a considerable difference. However, excess production does not mean surplus production. Production has to be demand-driven.

The world often tends to forget the problems of indigenous peoples who, more or less, live with nature and have been hunted out everywhere. The mountains, forests, grasslands and islands they live in, virtually in technological isolation, are getting deprived of natural resources. These people, where they exist, are part of the nation that holds their habitats. Some of these nations are very advanced. The indigenous population keeps very close affinity to all that is in their ancestral environment. They are losing them without hope of their getting replenished. According to anthropologists, the definition of indigenous people is what they think of themselves as distinct from their countries dominant group.¹⁴ Their resources are in relation to their habitats—land and food resources around it, including that in the sea if it is a coastal or island area. Developmental activities, pollution and lack of identity in national matters, etc. have made them resource refugees within their own countries in most parts of the world. They are being pushed to the brink of extinction. Resource apartheid will ultimately wipe them out. That will be sad if permitted to happen, especially when the nation they belong to (in most of the cases unknown to them) has equal responsibility towards them as it has towards other citizens. And also especially, since their demand for resources is just for subsistence economy that is comparatively much less than that of their advanced fellow citizens.

MOBILISATION OF RESOURCES

The lines of communication of resource mobility over land, air and sea are vital for a nation. Mobilisation involves production, storage and transportation. All three possess challenges of pollution and disaster prevention. The demand at global level will govern the supply of most of the resources, especially energy and minerals.

Governments and regional blocks may have limitations in controlling it. Most of the countries of the world rely on imported resources in one form or another. Strategic resources for military purposes are a matter of concern for highly militarised countries. International mobilisation of resources will be primarily by sea. The sea lines of communication (SLOC) and associated infrastructure over land will require protection for safe transportation of resources. Air transport is swift, but is expensive and limited. It is appropriate for high value-low volume and emergency resource transportation. Air transport has a particular role in landlocked and geographically disadvantaged countries. An interesting mode widely followed over the world is animal transportation. In many parts of the world it continues as the cheapest form of transportation not only in energy consumption but also in infrastructural demand. A good river and canal system, if available, is another economically viable means of transportation. Motorised barges, supplementing traditional water transport provides relatively speedy transportation where inland water navigation systems are organised.

Liquid resources can be moved through long pipelines. It is very cost-effective in long-term mobilisation. Even the ocean bed can be used for pipeline transportation. The advantage of pipeline is speed and direct connectivity with the users' production infrastructure as in the case of oil refineries. The disadvantage comes from security concerns, pollution and cross border political implications.

STRATEGIC RESOURCE MANAGEMENT

Strategic resources are those that are critical for a nation in an unexpected demand surge. Such demand will come in case of war, disaster, price escalation, etc. Strategic reserves are supply situations created to override the problems associated with a specific resource in a critical situation. Food reserves in a drought situation, oil reserves in a war situation or during price escalation, medicines during a disaster situation, etc. are examples. It is a relative expression based on situation. The government has to identify potential strategic resources in advance and plan for their storage and mobilisation when demand increases. Often, the requirement is for a short period and for a definite purpose. The idea arose from strategic war resources. Strategic resource stock and mobilisation determined the duration of wars. Analysing the requirement of strategic reserves of resources for meeting an unexpected demand is an expert activity. The underlying principle is the overall cost-benefit analysis. It could even be done without actual stock, but close international understanding and agreement by geostrategic appreciation for assured supply of resources. Governments are aware; but often, strategic reserve management can end up being costly and ineffective—surplus, shortage, waste, poor mobilisation, etc. will be the inherent problems, when they are least wanted, that could jeopardise the system.

ANTICIPATED RESOURCE CONSTRAINTS

Equity of resources is talked about in social sciences as a measure of the capability of human systems. These are settled within the nation-state concept. Each nation has varying resources, some scarce and some abundant. There is no equity of resources among nations. Nation-states are not formed that way. Even the administrative divisions of a nation are not under resource equity principle. Nations may be divided based on topography, ethnic principles, etc. Resource equity within a country is achieved by distribution based on demand. Equity in the world is again ideally achieved by this principle. But nations feel the crunch when they meet with constraints that can vary.

In the melee of resource management there may be resources that may not meet the demand. Such resource constraints call for critical examination of resource yield. Water and seafood are the identified critical items in the resource constraint module. Scarcity of water has already been elaborated in this chapter. Over-fishing and lack of regimes that can regulate fisheries in the world in spite of the efforts of the FAO to unify the code of regulation for responsible fisheries (FISHCODE) along with fisheries monitoring, surveillance, control and response (MCSR) formula at sea through national forces in the world are similar resource problems. It is coupled with environmental degradation of the seas, a serious issue that is under detailed discussion periodically at the International Maritime Organisation (IMO) under the watchful eyes of the commercial players in shipping on one side and environmentalists on the other. Reliance on imported materials is another resource constraint. Nations cannot do away with it. Almost every nation is dependent on import of some resource or the other as a national security concern. While there are many factors of constraints, globalisation has made the process comparatively easy. Here, though the governments may find it difficult to limit markets, especially raw material markets, under globalisation it is to be considered more as a catalyst for the flow of resources rather than a constraint. Resource security can be steered by the governments by taking advantage of the system. Resource security planners have to be concerned about imported resource constraints that will have to be addressed in geostrategic forums for effective results. This interaction between other elements of national security is important.

Maintaining resource reserves to tide over constraints for critical resources is another method. Calculations based on demand with an eye on the future, in the short-term as well as long-term scenario will provide free flow of resources under items of constraint. These systems are applicable only to certain specific resources like fuel, food, strategic minerals, etc. Incentives could be given for private stockpiling in countries where there is no reservation for privatisation. There are countries that will have internal resistance for privatisation. That is an additional constraint. The bottom line is cost effectiveness in reducing constraint. In this scenario, resource security becomes an issue of logistics. It could be managed

conveniently under the advanced principles of logistics management. Cost-effectiveness comes out of price fluctuation by demand and supply theory. Price increase is also associated with social stress, conflicts and political upheavals. Technology is the main contributor for price stability since production costs are reduced with higher technology. There is also better waste control. Besides, price increase also turns the resources idle with alternate resource use. Technology can overcome demand induced price rise in resources to a considerable degree.

There are problems with resources that are not normally imported. An example is water. Perhaps the world may have to find better solutions for water resource equality to improve the quality of life. The problems associated with water crunch are supply limitations, cost of preparation, contamination, energy needs, agricultural needs, industrial requirements, etc. The demand for water is high worldwide. The solution is increasing the quantity of fresh water on earth with an eye on the future as in the case of any other resource on which humans are dependent. Water harvesting, effective utilisation of river and lake basins across the countries, improving efficiency of water systems, avoiding waste, etc. are recommended procedures, but rarely practiced since ignorance of the users upsets strategies. Public awareness is the key. It is a lot of hard work. Information about resources and geostrategic security are interlinked. It is important to reiterate here that issues of national security can be resolved easily only under win-win situations. Resolving water disputes cannot come easy and so are the win-win proposals. There are limitations. But the efforts should be towards it. International law on water sharing is clear, but their practicality is based on consensus. A more effective method is to leverage on international law for bilateral agreements.

A GLOBAL RESOURCE WEB UNDER A STRATEGIC TRANSPORTATION MODEL?

Physical networking of resources under a global resource web that can objectively connect resource availability with demand across the globe under win-win situations is a practical idea. Such a web could ideally, satisfy the resource hungry human systems, but also lead towards managing other elements of national security in a positive manner. The impossibility of such a network is hidden in the conflicts the world had witnessed and still ongoing. In resource rich countries the leading players were outsiders since the earliest times. Resource richness was the “crime” of Africa. African nations were neither able to defend themselves nor bargain for the better. From the point of view of resource security, Africa thereby became a serious threat attractor by its resource richness and a battlefield of interested parties more so during the Cold War and under apartheid regimes. The nations of the world are not created on equity of any sort. They have different fingerprints. The basic principle of global security is expected to be networking the world into a balanced system of humans. Resource sharing in the world today is based on trade agreements and geostrategic preferences. There are imbalances; coercive forces are at play.

A resource web in the long run is an international resource security imperative, if the world has to progress together and the best method of development in an orderly system. More so, it is a geostrategic imperative. Such a web will be live and vibrant if it has international approval. However, in the globalisation process as seen in economic security matters, the game is outside the court of nations in many aspects. Private international bodies may control resources more, but that could be managed well under an international organisation. The suggestion is based on a forecast that resource equipoise for global security can only be brought under global governance. It may sound ideal today, but the world will be drawn towards such a system slowly when the resource crunch is felt seriously. Symptoms are there in bio-models like transnational pipelines for energy flow. But a worldwide web of resources is much beyond such arrangements and is possible in the future when demand heats up and nations become wary of the dependency of coercive forces.

CONCLUSION

Resource security deals with managing resources that count in the national security regime. In its original form, it is not limited to nations alone, since the nation-states are not formed on the equity of resources. It is a global issue. One country has to depend upon another for resources that is short but high on demand. Sharing and conflict resolutions will be under the aegis of international law. Under globalisation programmes, the chance for resource wars and conflicts is much reduced. Strategic planners do not envisage problems to resource security by total depletion in the immediate and not too distant future. Prices may fluctuate based on market forces at the global level on certain resources like oil. But the governments and planners may imagine a variety of implausible scenarios. Strategic reserves will hedge against supply interruptions and constraints that need to be scientifically calculated for cost effectiveness.

Notes

¹ Joseph J. Romm, *Defining National Security—the Non-military Aspects*, Council on Foreign Relations Press, New York, 1993, p. 21.

² Institute for National Strategic Studies, *Strategic Assessment*, National Defence University, Washington DC, 1999, p. 40.

³ Y. Anjaneyulu, *Introduction to Environmental Science*, BS Publications, Hyderabad, 2004, p. 58.

⁴ Ibid. p. 71.

⁵ There is also an estimate that water stress occurs when availability of water drops to 1,000–2,000 cu m per person per year.

⁶ Anjaneyulu, n. 3, p. 94.

⁷ Ibid.

⁸ Romm, n.1, p. 22.

⁹ Vishwa Mohan, “Water Riots Cripple India,” *The Asian Age*, New Delhi, 17 March 2003, p. 1.

¹⁰ Ibid. p. 2.

¹¹ Anjaneyulu, n. 3, p. 118.

¹² Fritjof Capra, *The Turning Point*, Flamingo, London, 1982, p. 226.

¹³ Ibid.

¹⁴ Lester R. Brown (ed.), *State of the World*, W.W. Norton & Company, New York, 1993, p. 81.

10

Border Security

In the beginning, nations created boundaries for identity; thereafter, boundaries became borders that also scripted xenophobic intolerance.

The borders of a nation envelop its geo-property. Open borders invited everybody—from knowledge people to marauding invaders. Those with open borders developed into societies of diverse cultures. Centuries later, the accumulated cultural diversities led them to live together as people of nations with defined boundaries. Some of them got away and created new worlds by migration. Those with closed and protected borders retained their individual culture. Humans moved forward and, finally when the nation-states formed, borders started getting defined as determined by wars, treaties and declarations. Borders contract by disintegration. The last big shrinking of national borders was in 1991, when the Soviet Union disintegrated. It was followed by a large-scale disorientation in various parts of the world by micronisation of nation-states.¹ Probability of further disintegration is minimal in the future, though predicting the future of nations has to be done under extreme caution. For centuries, the human psyche was conditioned by the term “border” as a line drawn over land. The border over the sea in the maritime terrain became a reality for the first time in 1982, by international acceptance of the United Nations Convention on the Law of the Sea (UNCLOS) in 1982.

Ironically, borders divide not only nations, but also people. Another interesting group is the stateless people; those who are not confined to a nation or an enclosed border area. Their lives and identities are entrapped in a limbo. In addition, there are “people interrupted” along borders under violent disputes. Millions live on the edge within the fissures of disputed borders in the world. The study of borders and border security is incomplete without mention of such people. Primarily, they could be the harbingers of a new world that is likely to emerge, although many years from now—the global commune. A hypothetical look at the current global commune shows an embryonic segment of people associated with the United Nations and certain humanitarian missions who reach out to the needy across the borders.² Many of them are volunteers. And the third of course, are the *Les Miserables*—the stateless and interrupted people of the world³—competent to be identified as a global community by the single most factor that unite them: hopelessness under deprivation. Many borders are under dispute. The effect of

border security however, does not change with such disputes. Disputes are one of the many issues in border security management. Resolution of a border dispute does not guarantee border security. It is a different issue altogether. Therefore, it is for the government to have two distinct policies: one for the border that is not under dispute and another for the one that is disputed.

ABOUT BORDER SECURITY: THE FOURTH ELEMENT

Borders are applicable only to geophysical terrains as of now—land, ocean and air space.⁴ Border security matters with respect to other terrains are issues of future. Defending the border under national and international order is a mammoth task. Many nations have border disputes without signs of getting them resolved. Therefore, border security has its biggest challenge—protecting national interests within the borders and unresolved disputes. It is a dynamic scenario. Disputes are not normally global issues. That is why the preferred choice is to resolve them bilaterally, with or without mediation. To that extent mediation is best limited to getting people to sit across the tables to talk. The people who sit there have a major task to perform since they represent the people of the disputing nations. The third party has no such liability even though it may have its own interests.

Border security involves activities to prevent access to people, material and natural forces that pose a threat to the nation. This requires monitoring, control, surveillance and response (MCSR) over the borders and border areas in three geophysical terrains by various means. Breach in border security—invasion, illegal immigration, refugees, terrorist attacks, trafficking, entry of disaster forces, etc., unsettles public confidence in the government in addition to the destruction caused by the intruding elements. To that extent, today there is no nation in the world with a foolproof border protection system. Examples of border breach are varied in history. Among the worst was the Al Qaeda terror projection in the United States in 2001. It was only second to the 1945 American nuclear bombings of civilians in Hiroshima and Nagasaki in its quantum of cruelty, shock and violence against the innocence of humanity. Such attacks and border breach raises concerns over a nation's capability to protect its borders. Worst still is the reality that the borders of a nation can be breached from within! It is more important to understand the border security phenomenon not from what is seen or known, but what is yet unseen and unknown.

A border is a political boundary. In that sense, it is not just a line that “divides” two nations, but a demarcation of geo-property owned by each nation and within which the limits of jurisdiction under the state's laws are defined. Normally, a nation will have a single boundary unless it is distributed in different parts. There are split nations on the mainland separated by land terrain, like the Sultanate of Oman; over the land separated by the sea, like Malaysia; with islands separated from the mainland, like India; on the mainland with provincial boundaries like China with Hong Kong, Tibet and Macau; or protectorates of another country like France

and Reunion Islands, and the US and Guantanamo Bay in Cuba. It is interesting how nation-states are distributed in this manner. Such nations may have multi-boundaries instead of a single boundary. Another interesting aspect of borders is that it may be appropriate to consider them in plural taking each terrain border as separate references since they have a certain amount of abstractionist differentiation. While the land terrains have uni-dimensional borders, the air space has a dual dimensional border with length and height and the ocean having the most complicated of all the borders: area rather than a line, depth and the seabed planes—the ground under. Therefore, for the purpose of border security, the demarcation is to be seen in the multi-dimensional context of the border concept. Borders will be sensitive when they are disputed and there is geo-political incompatibility between nations across them. This incompatibility can have geostrategic impacts, which may make the borders sensitive threat attractors. The geostrategic threat will come from transnational criminal activities, cross border terrorism, environmental and economic aspects, demographic situations, etc., across borders.

BORDER SECURITY POLICY

Border security of a nation is embedded within the national policy on border management, if such a policy exists. Most of the nations do not have a definite policy in border security, especially when riddled with disputes over border issues. Often it is fragmented and not managed in a professional manner. Multi-terrain borders and far too many governmental agencies, or none at all, with definite accountability on border security is a bad situation. A mixed and uncertain policy, with too many agencies and forces that have no coordination coupled with multi-governmental control against neighbours with a definite policy of infiltration, make the situation worse. Even worse is when the government entrusts the border security just to the armed forces in different pockets without proper guidance in policy matters. If a topological⁵ stretching out of extreme superlatives is permitted, then it could be seen in border management through blunders of diplomacy, war gain mismanagement, political decadence and the sheer inability of the system of governance to manage the issues. In most border management policies, the armed forces and other security agencies lack guidance on what the government wants them to do and how it expects them to do it. The policies change frequently and that makes the job even more difficult. Managing the border security policy will depend on the size of the country and its threat perception. To preclude the complexity of border security issues, the management policy may assimilate all the stakeholders involved in border security issues within a transparent regime that will include:

- (a) A unified organisational policy setup (central and state governments)
- (b) Identified military forces (army, navy and air forces, and their variations like strategic force command, marines or paramilitary forces under the respective military forces)

- (c) Other identified central armed forces (non-military: border guards, coast guard, etc.)
- (d) Identified state armed forces
- (e) Other enforcement agencies (customs, immigration, police, narcotics control, fisheries, border guards, forest rangers, mercantile marine, sea port authorities, airport authorities, etc.)
- (f) Intelligence agencies (central and state)
- (g) Executive authorities
- (h) Private stakeholders in border security—business organisations, farmers, etc.
- (i) Social workers
- (j) National disaster management agencies
- (k) National environmental agencies
- (l) Border people representatives
- (m) Legislative authorities
- (n) Judicial authorities
- (o) National research and development organisations
- (p) Information management cell, including media representatives
- (q) Census and recording agencies

An effective policy is a crucial decision and one of the more expensive national security proposals. Developed nations are capable of securing their borders by making them “smart” with advanced facilities for MCSR besides entry check and verification systems. The policy features should promote greater cooperation among border management agencies and increased awareness about the people and materials entering and leaving the country. Border security policy will include:

- (a) Border details—land, sea and air space
- (b) Foreign policy related to each border including memorandums of understanding, bilateral agreements, etc.
- (c) Threat perception under each category
- (d) MCSR protocol
- (e) Border policy stakeholder regime
- (f) Lead intelligence agency for a specific border with interface definition
- (g) Information sharing interface
- (h) Response contingency plans
- (i) Related legislation
- (j) Coordination centres and plans for integrated response

Under no circumstance should the border security be misinterpreted as matters of military security. The subject of border security relates to national security under non-military threats, whereas military security as a whole should cater for military border security with a clear definition of interface in the activity profile. Intelligence is part of both military and non-military aspects of border security at all times.

Policy actions that can be taken in border security include policy declarations. Border declarations between the countries sharing a common border will include action plans jointly agreed to by both the parties for transforming a border policy, relating to a particular border. In such cases, the border policies of the state parties will have to be common. The declaration will normally contain control of movement of people and goods, preventing smuggling and trafficking, securing infrastructure, and coordinating and sharing information in order to meet the objectives of border security. The declaration will also involve air space and aviation safety, environmental aspects, refugee asylum process coordination, and also fisheries and piracy control if the border declarations are about sea areas. These are nation specific and points relate to the issues faced by each nation across its border. Under such circumstances, a border declaration between two countries must be supported by smart MCSR systems. In the normal case, a border declaration is applicable to countries that have friendly and very cordial relations. It is not easy otherwise especially between countries that use the borders for state sponsored subversive and insurgent activities or transnational criminal activities. Border security therefore, has to be seen under the geostrategic perspective. Other issues are alien smuggling, free trade agreement flow, and interdiction of contraband and confidence building measures (CBM). Legislation is important in enhancing border security without which the policy will not have the desired validity. The legislation should relate to all aspects of access control that can prevent terrorist and illegal infiltration by reforming immigration laws. It should help the security agencies to coordinate with foreign intelligence services to seek information for access control by integrating the exit and entry data system on a global security alert under current and developing scenario of national security. Biometric identifiers like digitally recorded passports and other particulars in immigration documents, machine-readable visas and passports, and arrival–departure and security databases are vital for access control. Biometric particulars are also vital for screening visa and admissions of applicants. Intelligence sharing is important in immigration law enforcement. Bureaucratic conflicts can jeopardise even the strongest of policy decisions. The causes of such conflicts are many: changes in government, individual decisions of the powerful, national and international pressures, dual control within the government, etc.

TYPES OF BORDERS

There are different types of geophysical borders: full international border, disputed *de facto* border, territorial claim border, ceasefire line, undefined boundary, international administrative boundary, etc. Many nations have claims on overseas territories in the world since as early as the 14th century. These territories too form part of the states' concern and have boundaries that need to be protected by owner nations. The status of overseas territories and dependencies fall under various categories: external territory, dependency, overseas department, territorial

collectivity, autonomous, associated territory, dependent territory, dependency, Crown colony, Crown dependency, unincorporated territory, administered territory, Commonwealth territory, etc.⁶ On the ground, geo-graphical borders are based on the concept of geo-property rights. The world is divided within the claims wrapped in borders. The sovereign states have apportioned practically all the land in the world among themselves within defined and in some cases, arguable boundaries. This also includes the air space above and a small belt of maritime borders. Antarctica may be an exception along with outer space for obvious reasons and it is only a matter of (long) time before the sovereignty extends to these places too. The oceans that cover about 71 per cent of the area are different where the high seas beyond the maritime zones remain exclusively for the common good. In general, there is no land that is free from the jurisdiction of individuals or government—a case of *territorium nullius*.⁷ Determining a given frontier of a territory whose title has been vested in a state based on the principles of sovereignty, recognition, consent and good faith under international law is not objectively easy. Relative significance of historical, geographical, strategic, ethnical or economic considerations under international law is not only abstract in measurement but also a variable of sorts. However, this task is done under overt power politics or power politics in disguise—not strictly covert.⁸ This is an important aspect of frontier limitation and acceptable *ipso facto* for the same purpose.

Land Borders

There are borders for everything humans occupy on land—from a house to a nation. Even imaginary stories are built around mishaps in the neighbourhood creating psycho-physical borders conditioning the mind, so that people do not venture out and remain within their territories. Without borders, a nation cannot be defined. Land borders can be breached more easily than other terrain borders since it normally does not require terrain compatible platforms. Humans have an uncanny ability by instinct for traversing the land irrespective of terrain peculiarities. Even in the most hostile land terrain, people feel psychologically safe. Land borders are unique in their diversity. The terrains could be glaciers, ice, deserts, forests, mountain ranges, marsh lands, swamps, urban conglomerations, rural villages, land–sea interface, fields, grass lands, mangrove deltas, steppes, lakes and rivers. Protecting them will be a nation specific issue. Countries with the most land borders in the world are given in Table 10.1.

TABLE 10.1 Countries with Most Land Borders (2005)

Country	Land Borders	Neighbouring Countries
China	14	Afghanistan, Bhutan, India, Kazakhstan, Kyrgyzstan, Laos, Mongolia, Myanmar, Nepal, North Korea, Pakistan, Russian Federation, Tajikistan, Vietnam

(Contd)

Table 10.1 Contd

Country	Land Borders	Neighbouring Countries
Russian Federation	14	Azerbaijan, Belarus, China, Estonia, Finland, Georgia, Kazakhstan, Latvia, Lithuania, Mongolia, North Korea, Norway, Poland, Ukraine
Brazil	10	Argentina, Bolivia, Colombia, French Guiana, Guyana, Paraguay, Peru, Suriname, Uruguay, Venezuela
Congo, Dem. Republic	9	Angola, Burundi, Central African Republic, Congo, Rwanda, Sudan, Tanzania, Uganda, Zambia
Germany	9	Austria, Belgium, Czech Republic, Denmark, France, Luxembourg, Netherlands, Poland, Switzerland
Sudan	9	Central African Republic, Chad, Congo Dem. Republic, Egypt, Eritrea, Ethiopia, Kenya, Libya, Uganda
Austria	8	Czech Republic, Germany, Hungary, Italy, Liechtenstein, Slovakia, Slovenia, Switzerland
France	8	Andorra, Belgium, Germany, Italy, Luxembourg, Monaco, Spain, Switzerland
Tanzania	8	Burundi, Congo Dem. Republic, Kenya, Malawi, Mozambique, Rwanda, Uganda, Zambia
Turkey	8	Armenia, Azerbaijan, Bulgaria, Georgia, Greece, Iran, Iraq, Syria
Zambia	8	Congo Democratic Republic, Malawi, Mozambique, Namibia, Tanzania, Zimbabwe

Sea Borders

Perhaps a casual reader of history may not have seriously noticed but a strategist cannot discount the fact that the world was primarily colonised and exploited by those who came by the sea. Those who came by land either withdrew after the initial conquest or stayed on integrating with the locals. Most nations did not take the sea seriously and considered it as a security moat against foreign invasion. But, it proved otherwise. Those who dared the oceans conquered the coastal states and established their will. Time changed it all. In 1982, the people of the world decided to share the sea as a common good and demarcate the rights for exploitation and passage according to territorial attributes. For the first time lines though invisible, were drawn on water with the drafting of UNCLOS for all who adopted it. According to the then secretary general of the United Nations Javier Perez De Cuellar, with the signing of the UNCLOS, “the international law was irrevocably transformed.”⁹ Undoubtedly, it was a remarkable work in international law that will go a long way in sharing the wealth of the oceans judiciously and settling

maritime disputes once for all. It took a quarter of a century to arrive at the final draft.¹⁰ The borders at sea are to be seen as not just lines but areas called maritime zones, each with its own peculiarities and legal applications. UNCLOS defines the maritime zones from the baseline. A state's boundaries lie in these waters. For the purpose of such demarcation, the baseline is the reference point and is defined in UNCLOS. The normal baseline is considered to be the low-water line marked on a large-scale chart.¹¹ The low-water line is also known as the low tide line (LTL). According to UNCLOS, the *territorial waters* extend not more than 12 nautical miles from the baseline to which the sovereignty of a state extends. Territorial waters permit innocent passage to foreign ships except warships, including submarine and other underwater vehicles that will need to notify their passage to the concerned state. Innocent passage means passage that is not prejudicial to peace, good order and security of the state. The *contiguous zone*¹² is further to the territorial waters by another 12 nautical miles. The state may exercise powers and take such measures related to its security, immigration, sanitation, customs and other fiscal matters by notification. It is a buffer zone from border security point since immigration and customs laws are applicable in this zone. From the seaward it should be treated as the entry point boundary for border security though freedom of navigation exists in the contiguous zone outside the territorial waters. The *continental shelf*¹³ is primary to the maritime area. It occupies most of the zones. It comprises the seabed and the sub-soil of the submarine areas that extend beyond the limits of the territorial waters throughout the natural propagation of land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baseline where the outer edge of the continental margin does not extend to that distance. The sovereign rights are for the purpose of exploration, exploitation, conservation and management of all resources; exclusive rights and jurisdiction for the construction, maintenance or operation of artificial islands, offshore terminals, installations and other structures and devices as necessary for the exploration and exploitation of the resources of the continental shelf for the convenience of shipping or for any other purpose; exclusive jurisdiction to authorise, regulate and control scientific research, and exclusive jurisdiction to preserve and protect marine environment and to prevent and control marine pollution. The national government may declare any area of the continental shelf and its adjacent waters to be a designated area and make provision with respect to the activities therein that may include management of resources, safety and protection, environmental security and customs and other fiscal matters. The *exclusive economic zone*¹⁴ (EEZ), is an area beyond and adjacent to the territorial waters. The limit of EEZ is 200 nautical miles from the baseline. The rights of a state are as applicable to the continental shelf and such other rights as recognised by international law. The state may declare any area of the EEZ a designated area or make provisions for its exploitation, safety and protection, environment, and customs and fiscal matters. The concerned national laws can be extended to the EEZ by notification. In the EEZ and the air space over it, ships and aircraft of all

states shall, subject to the exercise of the coastal state of its rights within the zone, enjoy freedom of navigation and over flight. Basically, the rights of a coastal state in the EEZ are over the resources in the water column and the seabed and under. In addition, a state may declare certain waters as *historic waters*,¹⁵ and specify the limits adjacent to its land territory. The sovereignty of the state shall extend to these waters, the seabed and sub-soil underlying, and the air space over such waters. The historic waters thus declared will be the internal waters of the state. Therefore it may be included as the land border though being in water, from the border security point of view. The maritime zones call for demarcating the maritime boundaries between a state and its maritime neighbours. The maritime boundaries between two countries shall not extend beyond the line, every point of which is equidistant from the nearest point from which the breadth of the territorial waters of the states is measured. The maritime boundary is to be seen as an area within a perimeter. For a littoral state, these boundaries and the maritime zones within are vital for its border security.

It is the responsibility of a country to delineate the outer limits of its continental shelf at the foot of slope (FOS) and the 2,500 m isobath. Thereafter, its claim for the legal continental shelf (LCS)¹⁶ can be submitted to the United Nations in accordance with the UNCLOS regime along with the geophysical data to substantiate the claim. In the legal continental shelf, the country will have jurisdiction only on the seabed and the sub-soil below. For that matter, it is not an EEZ but could be termed if so desired, as an extended seabed area (ESA). In the LCS (or the ESA), the provisions of the high seas govern the activities on the surface and above, and in the water column. It is clear from all these that the concept of a border is different at sea. It is about areas rather than lines. The area is vast. It needs to be guarded against insidious threats to the border security of the country. It needs specific capabilities. It is also true that the maritime zones are open areas within boundaries of varying sensitivity. The demarcation is only in cartographic records. Besides, the sea-coastal interface, the coastal zone often referred to as border, is a complex terrain. The domain to tackle the threat from seaward is the maritime zone. If it fails, the asymmetry advantage for the coastal state in the maritime domain reverses multi-fold. The domain of maritime zones includes inland waters, archipelagic waters, territorial waters, contiguous zone, exclusive economic zone and legal continental shelf or the ESA as a general all-inclusive domain. It is for the concerned maritime nation to define these accordingly, within the international laws and its maritime security doctrine. Each of the elements of the total maritime zone of a nation has its own distinctive features and judicial implications. The property or resource rights of a nation can extend further and away from its maritime zones. For example, a nation could have rights for mining in seabed away from its natural zones as in deep seabed mining. In all aspects of maritime jurisdiction, it is important to understand that the high seas are the interlinking chain of oceans, which lie to seaward of the territorial sea.¹⁷ Often this is misunderstood for waters beyond the EEZ.

Air Space

The air space above is like the subsoil under national territories. This is a rule under international customary law. Air space boundaries are treated as appurtenances of land territory and the territorial sea. Air space is synonymous with atmospheric space. Breach of air space occurs during war, and other-than-war situations that may involve intelligence missions and transnational criminal activities, including militant activism. Air space is also susceptible to cross border disaster migration.

Outer Space

Beyond the air space is the outer space, normally known as space. Space-centric warfare is a part of SDI. In space-based warfare, there is a violation of air space even if it is invisible net-centric warfare. The border between outer space and air space can also be violated by near earth objects (NEO) heading towards a collision course with Earth. The probability of a border in outer space in the future is doubtful, but certainly the sovereignty of a nation is expected to extend to the platforms that may be sent to outer space by space faring nations.

Inland Borders

International air and seaports, inland container terminals, etc., are common entry points to a country located in the interior, not at the outer border. They are special inland borders. In the future there could be inland spaceports. Protecting these borders in detail is a difficult process, especially in the absence of firm policies. It incurs immense cost and requires thorough cost benefit analysis (CBA).

BORDER SECURITY IMPLEMENTATION

Border security implementation involves serious MCSR activity backed by actionable intelligence, and data recording and disseminating systems. The systems designed to cater for border security implementation should be capable of managing a domain that is:

- Characterised by diverse parameters and distributed over land, sea and air
- Staffed by different forces and agencies
- Faced with different problems
- Attracted by different threats
- Aligned with different geostrategic perceptions across the border
- Perceptions and aspirations of the people close to the border on either side and internal to the nation
- Under neighbours' and international watch for actions

The perceptions and aspirations of the people close to the border on either side as well as internal to the nation may be diverse, but are crucial in taking decisions on border issues. For a government, managing the borders also means managing

the psyche of the people, even in a case where the terrain is not habitable. People are common stakeholders in border decisions irrespective of their location in a country. Due allowance should be given to managing the element of informational security to allow people to have their right to information on matters related to border security. Among the human made borders in the world, there are many that are resolute. They serve as borders of the impeached souls. There are intentional and unintentional intruders across borders. Often it is the latter that gets caught and languish for years in jail. The intentional intruder is determined to evade. Life changes for the “intruder” once caught. The border between India and Pakistan is one such trap zone. Those who stray across also include armed forces personnel who are on patrol or just doing their duty near the border. There are many poignant reports of impeached souls across borders that demand serious hearing in border security management discussions. This has to be incorporated in geostrategic security matters through bilateral understanding with human concern. Under disputed situations, borders become death traps for the human psyche. The governments have to understand this point. The United Nations too has a serious role to play.

The protocol on border security needs to be prepared with respect to each border to analyse the issues carefully and thoroughly taking these factors into consideration. A standard checklist will include:

- Neighbourhood analysis: relationship with the neighbour and the geostrategic parameters of the relationship
- Length of the boundary line and terrain
- Common boundary line, coastal and perimeter length, terrain and zone area in case of a maritime border
- Current method of surveillance and its efficacy
- Threat perception and trend: current and future
- Issues: bilateral and international
- Built-in value analysis and value engineering for CBA
- Confidence building measures (CBM) to regulate incidents across border
- Human perception

Problems and Issues

Barring some exceptions, the problems and issues at the borders will be almost identical the world over. They are:

- Infiltration
- Encroachment
- Sharing the encroached land by the party with a common neighbour
- Militant and religious activism
- Internally supported infiltration for political and other gains
- Cross border terrorism
- Health hazards

- Environmental hazards including disaster cascades across border
- Firing across border
- Espionage—sea, land and air-based intrusions
- Piracy
- Fisheries law violation
- Smuggling: consumer and intermediate goods
- Protection of vital installations and areas along or close to the border
- Protecting vital facilities in the sea border areas
- Arms trafficking
- Human trafficking
- Information trafficking
- Drug trafficking
- Poaching: resources and environmental
- Dumping ballast water containing alien organisms
- Illegal goods entry including hazardous and toxic materials
- Dumping toxic and radioactive materials
- Commission of crimes like murder, dacoity, theft, robbery, etc. by criminals
- Passport forgery
- Money laundering across border
- Rogue intrusion by armed forces
- Illegal enclaves and inhabitants
- Planned changing of demographic profile of border areas
- Militant sanctuaries and training centres
- Kidnapping and tax collection by rogue groups
- Spill out effect of ethnic conflicts
- Insurgency
- Cross border disaster situations
- Cross border health issues including bio-terrorism

Border management has to be specific to the primary issues of the particular border. Borders are invariably volatile besides being hostile, because the psyche of the border people can vacillate on duality that will make them opportunistic. Financial and human implications of border operations are extremely high and are the heaviest during war. The primary objective is to prevent escalation of cost. The enemy, identified or unidentified will indulge in increasing the cost to the adversary. It is often misunderstood that the issues of border security could always be bilateral between neighbours. It need not be so. The threat to the border could come from beyond the neighbourhood too.

CONCLUSION

It is easy to breach the borders of even the most powerful country in the world. The reason for the ease at which a country's borders can be breached is very simple—the world is not designed for humans to divide them with imaginary lines. Many

borders are disputed and solutions are not easy to come by. Most of these disputes are historical, or issue-based subsequent to wars or political disintegration between nations. Only dialogues under the win-win approach can resolve them. Any other approach will be coercive under mutual suspicion and susceptibility. A third party has no place in a border dispute negotiation even as a facilitator unless such an initiative can induce the much needed win-win prospective. It is hard to come by. The United Nations can be a great healer. One such example is the resolution of the border dispute between Cameroon and Nigeria that has been settled by the World Court and the United Nations in 2004. The settlement hailed as peace for Bakassi was a credit to the international community under the United Nation flag. The dispute was 90 years old. But not all border disputes are UN compatible.

Another model is Andorra, a small principality situated on the border of Spain and France in the Pyrenees mountains. It is a co-principality of the Bishop of Urgel (Spain) and the French President. Both countries claimed it since 803 AD and it was only in 1993, a thousand plus years later that the countries reached an agreement and gave Andorra an independent constitution and near-autonomy status. It retains the co-princes as heads of state, but executive power now rests in the head of government. The co-princes do not have the veto power, but are represented in Andorra, which also has no currency of its own and uses that of its neighbours. Andorra joined the United Nations as a member state in 1993 and is a recognised parliamentary democracy. This is a case where both the contestants, Spain and France, lost the province in an international meddle. This is another example of how time relieves both the parties in a dispute—a two-sum game theory model where both the players lose the prize to a third, sometimes invisible “player.” (The loss in resolving the dispute is more than that of the dispute itself for both the original players!) Autonomy normally leaves out defence and finance. A principality is equivalent to a nation and gets formally absorbed with the membership in the UN. Andorra is not a solution, but a surgical separation of the problem! One doesn’t amputate a finger just because a nail clipper is not found. The contestants have to understand the psychology of border disputes and how both may lose the pie ultimately. However, there is no singular hypothesis in border issue resolution.

Notes

¹ A new word. The intended purpose is to use the word to drive home the point that a state may breakdown to its natural balanced state in the course of time. The process is called micronisation of nations in this book. In case a nation expands by merger or integration with another, it could be macronisation of nations. That is quite unlikely. Micronisation and macronisation occur under a natural process and not by use of force or coercion in any form. In the future world, the chances of micronisation are more.

² French Médecins sans Frontières (MSF) (doctors without borders) is one such international humanitarian group. They provide medical care to victims of political violence or natural disasters, as well as to those who lack access to such treatment. The group received the Nobel Prize for Peace in 1999. Ten French physicians who were dissatisfied with the

neutrality of the Red Cross founded the MSF in 1971. They believed they had the right to intervene wherever they saw a need for their assistance, rather than waiting for an invitation from the government. They also felt they could speak out about injustice, even though it might offend the host government. In 1972, the MSF conducted its first major relief effort, helping victims of an earthquake in Nicaragua. They offered their services to the victims of fighting in Lebanon (1976), Afghanistan (1979) and the Russian Republic of Chechnya (1995). During the 1980s and '90s they worked to relieve famine, offered medical care to casualties of war and dealt with the problem of refugees in such African countries such as Somalia, Ethiopia, Sudan, Sierra Leone, Burundi, Rwanda, Kenya and Zaire (now the Democratic Republic of the Congo). Although by the late 1990s a quarter of those serving in MSF were French, there are volunteers from other countries too. Headquartered in Brussels, Belgium, the organisation has offices in 18 countries. In addition to providing medical assistance, the MSF has a reputation as a highly politicised group. There are also non-governmental agencies and organisations, especially environmentalists who like to declare themselves as environment warriors, but are declared unwanted intruders in certain countries depending upon their policy matters. Border security has to take care of these issues when dealing with people without borders.

³ *Encyclopaedia Britannica, Ultimate Reference Suite* CD-ROM, 2004. It is interesting to note that the areas in which stateless people live are those pockets along the borders of two states where neither law prevails. An example is the border between England and Scotland in the 15th and 16th centuries. In this border, neither the English law nor the Scottish law prevailed. Such borders are famous for historic ballads celebrating the adventures of folk heroes who were actually involved in the raids, feuds, seductions and elopements on the border. Though a few deal with events of historical importance, most are concerned with the personal retributions of the outlaws and robber clans who maintained their own grim code on the border.

⁴ Borders may extend to other terrains also in course of time.

⁵ Topology is a mathematical field that deals with deformed dimensions. It is an offshoot of geometry. Deformation in geometry takes place by stretching, squeezing, bending, twisting, etc. Applications of topology in a social model or, to that extent, in a non-mathematical model will be an interesting study.

⁶ *Essential Atlas of the World*, Dorling Kindersley Limited, London, 2003, pp. 156–159.

⁷ G. Schwarzenberger, *A Manual of International Law*, Universal Law Publishing Company, Delhi, 2000, p. 121.

⁸ *Ibid.* p. 126.

⁹ *The Law of the Sea*, United Nations, New York, 1983, p. xxix.

¹⁰ The First Law of the Sea Conference was in 1958.

¹¹ Article 5, UNCLOS.

¹² Article 33, UNCLOS.

¹³ Article 76, UNCLOS.

¹⁴ Article 55, UNCLOS.

¹⁵ Prabhakaran Paleri, *Role of the Coast Guard in the Maritime Security of India*, Knowledge World, New Delhi, 2004, p. 113.

¹⁶ Extended jurisdiction of the continental shelf, as applicable.

¹⁷ Swarzenberger, n. 7, p. 133.

11

Demographic Security

*There is nothing more precious and supportive
than a human life in national security.*

National security is for the people. Their size, density, distribution, profile, mobility pattern and life characteristics are important for identifying the social diversity of a country. Demographic security, as an element of national security, is embedded in this process. The popular conception is that “the larger the population, the more the impediments to national security”. It evolves from the feeling that population is a curse in national development. How could that be when the world is meant for people to live and survive in?

ABOUT DEMOGRAPHIC SECURITY: THE FIFTH ELEMENT

Demographic security is about balanced survival of the human population by strategically investing them for their benefit. Primarily a country can be either a receiver or a supplier of people. The behaviour pattern will vary accordingly. Some quarters advocate that fears over the economic effects of immigration are much exaggerated.¹ Population remains static over ground relative to the world, but its constant flow across the world can upset the stability of nations and their economy. People move from a lower potential to a higher potential in life’s perennial transit. Such movements can cause demographic imbalance under the nation-state principles. The flow is from the bottom upwards—from the less affluent to the more affluent nations. The world was without boundaries in the beginning. People moved constantly. Ideally, they will continue moving under this urge. Therefore, demographic security will depend upon balancing the human flux.

HUMAN POPULATION

Around 5,000 BC the human population was estimated to be 50 million. It is expected to cross 8,230 million in 2025² (Table 11.1).

The growth, though exponential, was not uniform over the period. The trend was to slow down in recent times. An ideal way to understand the trend will be to see a population in an assumed closed system where there is no in-and-out movement of people—immigration or emigration. In a closed system, the basic

components of population change are birth and death. To that extent the world is a closed system, but not a nation. People move in and out of a country, legally or illegally. The demographic issues are more serious for national security than for global security principles because of this difference. While population growth is *cause celebre* all over the world, fertility is causal to population. There is always a gap between potential and realised fertility. This gap is the effect of the natural regulatory aspect of fertility until new methods of controlling fertility evolved. The next stage is obviously artificial fertility. It can add another variable in the fertility concept.

TABLE 11.1 Growth of Population

Year	Population (million)
5,000 BC	50
800 BC	100
200 BC	200
1200	400
1700	800
1900	1600
1965	3200
1990	5300
12 October 1999	6000
2004	6150
2025	8230 (estimated)

There is a subconscious preference to the male child as a security syndrome.³ From emperors and smaller kings to the rich and not so affluent, everyone ensured the children were male. The purpose of a queen was to provide a male heir to the kingdom and nothing more. She could be frivolous, imprudent and frolic in wanton luxury, the king couldn't care. In many parts of the world the preference for a male child lead to the conscious destruction of a female foetus. Whether it was to balance population by default (less women, less birth) or a serious sign of mental turbulence is not known. In the first case, if accepted for this study that female foeticide could be a normal human reaction based on security to regulate population, the only danger is in obliterating the sin factor of the act. This is because once the sin factor is eliminated, the act will not be regulated. Again, the fallout of this theory is that population is not a curse, but a boon if balanced at the global level. Nations may either cross the limit of optimum population or may remain under. It is not easy to average out. Secondly, does nature take care of the world from crossing the threshold? In much of the world, human fertility is considerably lower than the

biological potential. It is strongly constrained by cultural regulations, especially those concerning marriage and sexuality and by conscious efforts on the part of married couples to limit childbearing. It is a normal trend that fertility declines in developed societies. Some of the reductions are remarkably rapid. People's views are varied from copulation to population. From the point of view of national security, population cannot be seen as a serious problem because the concept is meant for finding the well-being of people. National security is not meant only for the people who are there today, but more for those who will be there tomorrow. In this hypothesis, barring the natural selection process, no artificial selection process is involved. The argument on the problems of population is on resource sharing. Ideally, resources can decrease by sharing, but by replenishment they can be made available for all. Human population is not based on fertility, but a reduced part of it. Here the natural selection of population is evident and that could be manageable for a comfortable life. Human population has enlarged among the poor, and dwindled among those who are not poor. It is simple economics of marginal revenue and marginal income in many places. For the poor, a child could be a source of income, whereas for the not so poor, the child is an expense account for many years. By this principle, the poor do not feel the strain of parenthood, whereas for others parenthood is a strain beyond a certain level. Therefore the number gets limited. This is a way of reasoning. Besides, the poor may not have easy access to birth control measures. There could be many reasons why the poor are rich in productivity. Another finding is that in the past the number of children per individual was more. While methods of controlling pregnancy are readily accessible to today's generation, it was not so in the past. There are also arguments that the mortality rate in the earlier days was more than it is now and hence, everyone had more children on the simple mathematics of survivability of the infants—the more the children, the more might survive. All these theories prove that the factors of childbirth that govern population management are not only complicated, but also multifarious. Bad performance of a nation's economy is always attributed to population. It is a hasty conclusion. The reason could be the sheer inability to manage the economy and of course its population. In national security people power has to be taken as strength, not weakness. The density of population in many prosperous countries is much more than the poor. Table 11.2 gives the density versus per capita income in select countries (2004).⁴

The table breaks the myth of population as a harmful agent in nation building. The primary requirement of a nation is that it should have people in it. Under such conditions an increase in numbers means that theoretically, the nation will be more prosperous. If not, the fault should lie elsewhere. Figure 11.1 is a model diagram to argue that population increase does not corroborate the decline of a country. The countries categorised under varying density and income (Table 11.2) is viewed through a population density window in the figure. Thus a country can be compared relative to another, taken as a standard for optimum density—optimum income nation. It is a game that nations could well play to compare their perceptions

about themselves with each other. Assume that India is taken as the optimum standard for low density–high income from the Table 11.2. It will then be in block A. The block ideally should have all the countries whose population density is less than that of India and income more than it. There are no matching countries in the table here. All the countries that have less density than India have less income. There is an anomaly here; because it cannot be true that India is highest in income parity with respect to its population.

TABLE 11.2 Population Density vs. Per Capita Income of Select Countries

Country	Population Density—per sq km	Per Capita Income (US\$)
Singapore	6751	24,389
South Korea	491	19,497
Netherlands	477	27,108
Belgium	338	29,127
Japan	335	28,700
India	319	2,537
North Korea	184	990
Myanmar	62	1,733
Kenya	52.4	1,089
Nicaragua	39	2,176
Sudan	15	1,387

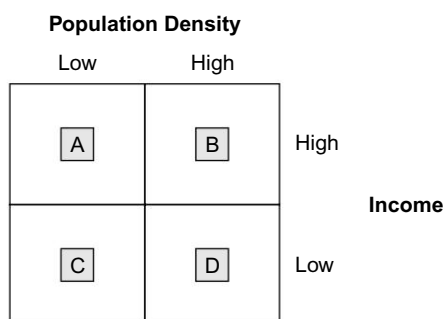


FIGURE 11.1 Population Density—Income Level Window

Move India to B—high-density—high-income sector. All countries that are higher than India in density and have more than India's per capita income will fall in here. They are the countries above India in Table 11.2. It makes some sense that India is not alone in this windowpane. Now move India to C—low-density—low-income group. The countries available are those whose density as well as

income, is lower than that of India. Here again there are quite a few supporters. Now in D, India could be in the high-density–low-income group. The companions will have to have more density and lower income. There is none.

Everybody knows that this cannot be true. In this example, India could fit in two windowpanes at the same time. It cannot be mathematically true. Similarly, the other two panes cannot be blank at anytime in the window unless the windows are made of incompatibles. This is an interesting find, which makes the “population increase causes poverty” theory an absurd concept. It can happen if governance is rooted in absurdity. It should not be blamed on population. It also conveys a hidden message, which is yet to be proved; that a nation’s strength lies in its people provided they are invested for maximum yield. The argument needs to be rooted on the fact that when density is considered, it should only include the population friendly part of the terrain—in other words, the terrain valuable for people. This also brings out the question posed earlier, “how much land does a country need?” An answer could be, “as much as where its population is benefited”. The problem is that it is not yet known how much population a country should have in order to call it optimum. Unless an answer is found, the theory of population explosion and controlling population becomes absurd. The requirement of hospitable, population friendly terrain comes next. There are many nations with uninhabited or rather highly inhospitable and resource less land territory. What are the advantages of keeping such real estates? That is another question.

A balanced population is the optimum size appropriate to a country considering it as a closed system. Maximisation of demographic security calls for balancing the population by acceptable procedures incorporated in the planning strategy and effectively utilising the people for national security governance. In the open system of the world, a country is either a primary receiver or a primary donor of people. Hence, these movements matter for demographic security governance by population adjustment. Population growth rates are rapid, slow, zero or negative. The ideal demographic structure is balanced growth, the rate of which has to be calculated for the period by forward planning. The control of the state over the growth even in the case of a planned approach is limited. It needs extraordinary prowess in governance of a nation.

DEMOGRAPHY AND ECONOMIC GROWTH

Does demographic enlargement support growth? Ideally, it should. The examples quoted are the United States in the baby boom growth, Japan in the late 1960s and China in early 2000.⁵ The argument is that the more the people, the more the workers. That brings in more savings. Savings are converted into capital that in return produces more wages and more savings. That triggers the cycle of more jobs, more virtuous income, demand increase, enhanced savings and even more fresh investment. It is an ideal situation. The opposite is virtual disappearance of savings, and then income and capital induced opportunities as if in an animated

movie. That could be disastrous. Demography therefore, can also destroy the economy if not played well. That makes it a challenging subject for national security. As societies develop, birthrate declines. Population of the aged will be relatively high. The demographic scale is reversed. Here, there is another question besides optimum population. How many people does a country need, and in what age group? These indicators are visible in developed nations today. China's savings in the demographic boom of early 2000 is 40 per cent of GDP. It is expected to peak around 2015–20 and then fall off rapidly according to reports.⁶ Many nations may be moving towards peak demography. After peaking on the level, the countries may stay there for sometime before the trend reverses. It is at this time that they have to prepare for eventualities. The nations that see the upsurge may also witness others declining. This is when the power balance will shift. It is possible with savings being converted into productive investment. It is important to understand here that peak demography may not be optimum demography. The bottom line is that one cannot discount the capabilities of people. Population is strength. What makes the difference will be the way people contribute and societies behave. Constructive collectivism and demographic security based power governance may throw to the winds the belief that population explosion is destructive to a nation's economy. The globalised world can be engaged only by the power of the people and the next superpower may be the one that has it. The key word here is optimum population, not maximum population. It varies from nation to nation and is an extremely difficult figure to arrive at.

HUMAN INVESTMENT MANAGEMENT

In human investment management (HIM) people are not considered resources, but investment instruments that use resources for productivity. It is the road to demographic security. Human investment management can be applied to any situation—nation building, corporate governance or family management. The underlying principle is to place people for maximum output based on an individual's direct or group capability and nudging it further by emotional development. It is a serious matter and very much beyond the subject of human resource development (HRD). HRD becomes a part of HIM. The subject is yet to be developed as visualised by the author, though it is practiced in organisations under many situations without being descriptive. This argument can regress to a much talked about and interesting trend, attributed to the ancient Hindu society—the caste (*Varna*⁷) system though entirely different in social appreciation. In the caste system, people were divided by the tasks they performed. Indirectly, from a reverse angle it meant that the one who was assigned to the task was the best suited for it. The system originated by in-house learning and practice that was the most probable procedure in societies of yesteryears. People followed the elders in the family, supported them in their work, learned in the bargain at good speed (in a steep learning curve) and passed the knowledge on to the next generation. The

cycle continued and so did the *varnas* by birth, even though the people slowly moved into other fields of their choice. *Varna* was a natural process and very acceptable to the principles of HIM. Unfortunately, the caste system based on the *varna* principle divided the society under a class system. HIM considers every human a competent contributor in a common system and utilises the person to the best benefit. It is fielding the people in the place of maximum return in terms of output.

In spite of the derogatory status that the caste system acquired in Hindu society, it is prevalent all over the world in one form or another and is expected to continue for many years to come. It is the inherent *varna* system in a society that creates dynasties. In this system the children become what their parents, especially the leading parents (those who condition the child's behaviour), were. The caste-based dynasties are everywhere. The children take over their family occupation—politicians, actors, artisans, industrialists, peasants, missionaries, etc. The child reflects its parents in its occupational aptitude later in life. Intellectualism and subsequent deviation from the mainstream parental hold is different. The dynastic offspring, especially politicians, are accused of family (dynastic) rule and getting the privileged job on a platter. The fact is that, people generally fit in well with what they are conditioned to by birth. That applies to political families too. The caste system is the image of the double mirrors in a barber's shop where the mirror shows reflections of the front and the rear of the individual infinitely. One should take what is important for objectivity after reiterated evaluation. The caste system is not something to be loath about. It shows human expertise and value. The system has grown much beyond the four *varnas* explained earlier. It values family and tradition. The modern caste system and the way it is continuously evolving can provide insights in human investment management in any field. One has to attribute it to the way demography has shaped up from ancient times. There is nothing unnatural about it. People will always move towards the job they are best suited for. The caste system in HIM is the role the people can best play. Placing them in those roles with sufficient motivation towards achieving the ends and reaching self-actualisation is managing human investment. The caste system has nothing to do with ethnic imbroglios; unfortunately, this is attributed to it. Promoting HIM concepts could give equal importance by value to people in a society and eliminate the conditioned caste-based apathy. In its real sense, it is time HIM replace HRD in every field. HIM is human empowerment in a nutshell. It can be shaped as a tool to maximise demographic security.

HUMAN MIGRATION

Since the time humans learnt to walk, they kept running.⁸ They walked even when tired. Irrespective of the pace, the instinct to reach out was insatiable in the human mind, as if beckoned by a mysterious force on a distant land of salvation. The golden fleece of salvation was unattainable, the land untraceable, but people hurried

across the plains, forests and snow-capped mountains. An identified leader sometimes led them. Sometimes they did it on their own, identifying a leader among them. They limped and crawled when their feet gave up, still dynamic. The strong carried the weak in trailers, on animals or on their back. The story of human movement and transportation is hidden here. Every means of transportation is symbolic to the human instinct to run—faster and faster as if they are stalked by deadly predators. Humans continue to run forward wherever they are, carrying the stress of existence with them. Unlike other forms of life, humans including the meek and handicapped, inherited the earth by mobility. The dynamic in most of the cases conquered the static.⁹ The urge to migrate and spread out is security driven and thereby becomes an instinct. It is visible in a bio-model. Even in a small habitat, humans fill up the entire habitat in the course of time. It is seen from the overflowing cities the way the dye spreads in a crack. Governments should never expect the people to remain within artificial boundaries if there is space beyond it. It is applicable not only within a state, but also across its borders. This tendency, to spread out to the extent perceived—not limited by law—is an important point that needs to be noted by those who advocate taking cities into the villages as a way of containing migration. There is a belief that demographic problems of security can be resolved by bringing cities to people. It means creation of urban conglomerations within a rural setup to prevent the migration of the rural population to distant cities. It is believed that in such cases, people may remain in their villages and also enjoy facilities of a city next to them. It may not be so. Migration will still continue because it is an instinct driven by needs. People in the rural cities or satellite towns will eat into the surrounding rural habitats in the course of time. Most of the mega cities of the world today, were once rural or satellite townships. Exceptions are those that are built as mega cities overnight in open spaces. They are synthetic cities with no claim to heritage. Cities that grow in the course of demographic evolution and development are natural.

But all migrations were not voluntary. People were forced to leave their habitats as slaves, prisoners of war, hostages and under other threats of demographic imbalance across the world. The 18th and 19th centuries witnessed the largest ever slave trade; 15 million people from Africa were shipped against their will to Brazil, the Caribbean and North America. About 40 million people were sent as coolies from China and India to various parts of the world.¹⁰ Coolies were cheap labourers whose status was not better than slaves in most of the cases. They were bonded to their employers. Though relatively small in numbers, people including children were kidnapped or lured with money and facilities for scientific experiments, sex trade, risky entertainments like camel races, household jobs etc. from among the poor in various parts of the world. The largest movement of people in the history of nations was in 1947 when India was partitioned immediately after independence from British colonial rule. In the biggest disposition of what it came to be known as colonial shame and cruelty of modern times, 14 million Hindus and Muslims were displaced across India and Pakistan in the bloodiest

exodus the world has ever witnessed. It was a mammoth and traumatic movement of people as per the population standards of the world in 1947. The impact of the dislocation is still felt and may last for centuries ahead. It is writ in the psyche of the people of both the nations in dissolving colours of extreme emotions. It was a shame on both the nations and a permanent blot on the religious ethics of Hindus and Muslims of India and Pakistan, that may never dissolve even in the strongest sentiments of tolerance and humanism that both the faiths are known to preach in solidarity. There was no bigger crime against human beings in recorded history so far, than what followed immediately after the bloody partition of India. The nuclear vendetta of the United States of America against the Japanese and Hitler's orgy against the Jews will pale in comparison with the chain reaction that resulted in the lynching and uprooting of millions of innocents by the unregulated partition of India. Though understood well¹¹ the wounds are not expected to heal for a thousand years because memories last beyond generations.

There were other reasons too for human migration. People moved leaving their land behind because of disasters—floods, earthquakes, sea erosion, water depletion, famine, etc. There were forced rehabilitation by industrialisation and developmental projects. Some were often lured by the “enemy” to migrate—shift over—in psychological operations.¹² The patterns of non-voluntary migration still continue today under troubled imbalances in national distribution of people. The refugee population by country of origin according to the UN (2004) is given in Table 11.3¹³ but according to another report, there were 38 million refugees in the world in 2003. It is a number comparable to the aftermath of the World War II.¹⁴

TABLE 11.3 Refugee Population by Country of Origin

<i>Claimed Nationality</i>	<i>Refugee Population</i>
Afghanistan	2,100,000
Sudan	606,200
Burundi	531,600
Congo	453,400
Palestine	427,800
Somalia	402,200
Iraq	368,400
Angola	323,600

Most of the voluntary migrations in the world since the beginning of the 19th century were based on economic reasons. Cheap land was the main consideration. It was available for the taking across the oceans. The United States stands in the forefront of a migrant nation. It absorbed 40 million of the 60 million people who moved out of Europe between the middle of the 19th century and the

beginning of the Second World War.¹⁵ The rest went to Australia, Canada, South Africa, New Zealand and Latin America.¹⁶ Uncontrolled migration for economic reasons caused problems. National policies changed. The United States shut the doors to marked people: prostitutes, lunatics and convicts. The Chinese migrants too found the doors closed after 1982.¹⁷ It is a question of relative advantages, though xenophobia is a deep-rooted feeling that further leads to ethnic conflicts. Immigration laws are based on demand and supply. A serious shortage of labour or specialised labour may open the gates, but a surplus or a racist regime may tighten it. Adolph Hitler's (1889–1945) Germany was very particular in restricting immigration policy to safeguard the perceived purity of the German race. But people are restless and are always on the lookout for better pastures in the world. According to ILO, about 80 million people live in countries they were not born in. Another 20 million live as refugees from natural disasters or political disturbances. Each year, about 1.5 million emigrants are on permanent move and another million seek temporary asylums abroad. Foreign nationals as percentage of the total population are increasing in small countries with lesser population. The countries that primarily attract people—primary host countries—in terms of percentage to total population are Australia, Austria, Belgium, Britain, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United States.¹⁸ In demographic security, the important aspect is the effect of migration, not migration by itself. The dynamism of movement is vital—it may involve criminal aspects, insurgency related aspects, brain drain, reverse brain drain, etc. Some of them have to be seen from a geostrategic point of view. Temporary migrations are easy to enumerate. As per the 2001 statistics, migrants comprise only two per cent of world's population. They sent more than US\$70 billion to their home countries each year in the form of remittances.¹⁹ National laws in most of the cases provide enough loopholes in migration that breeds the thriving community of immigration lawyers and disables enforcement agencies. For example, the United States law of “dry foot, wet foot” policy for Cubans can make them play *kabaddi*²⁰ in water with the coast guard. Under this rule, the migrants are allowed to stay if they land on the United States' soil, but sent back if caught at sea. Driven by extreme passion of migration, they innovate new ideas to skip across the border. A woman packed herself in a wooden box—the size of a small filing cabinet—and had herself shipped by air to the United States in August 2004. She was lucky to be alive when found by the cargo crew at Miami airport. She was allowed to stay.²¹ Many illegal self-shippers, stowaways in aircraft holds and human cargoes in containers or barrels have perished in their adventure to migrate to a country they perceived better than their own. There are also people who move within the country looking for safety and security and end up as internal migrants.

HUMAN SMUGGLING AND HUMAN TRAFFICKING—THE OTHER SIDE OF MIGRATION

Smuggling and trafficking in humans are mostly organized, illegal cross border operations that fall under the purview of transnational crimes. It is a significant threat to nations where such people land surreptitiously evading immigration laws and also taking asylum under the national laws when apprehended. It is a major threat for developed nations especially under the shadow of militant activism in the world. Smuggling and trafficking organisations use land, sea and air routes for their activities. The organisers are resourceful and mainly depend upon corrupt practices to push people across. Human smuggling is illegal emigration (leaving a country of citizenship) and immigration (entering another country) facilitated by a third party at the will of the participant. The third party may not normally transport them. It will be under the control of the transporters. They transport the human cargo for a consideration. The third party is a kind of travel agent with a difference. On a less serious level, people smuggle friends and relatives into a new country for personal reasons and to help them. The more serious human smuggling is for monetary and other considerations. Human trafficking will involve an element of force and coercion. Often, the third party coercion continues over the subjects even after the transaction. The victims are mainly women and children. The purpose is economic exploitation as sex workers, bonded labourers, etc. The income continues to flow to the trafficker from the earnings of their victims who often end up in extreme trauma. Rehabilitation of such people also becomes an additional burden on the state. More than 50,000 women and children are trafficked out of Nepal and Bangladesh every year into India and Pakistan according to a report of the United Nations' International Children's Emergency Fund (UNICEF).²² They ultimately end up in the ever-expanding and demanding sex trade. Sex traffic is based on demand and supply and the demand is ever increasing.²³ Human trafficking is a reprehensible crime. Most of the time, subjects of smuggling and trafficking often undergo traumatic experiences while transported and after landing in intermediary landing places.

Terrorists also use the path of human smuggling. There are many routes that have been patronised by smugglers over the centuries in various parts of the world over land and sea. For them, the borders are nothing but lines drawn on the map.²⁴ The traffic routes are all over the world and the human movement is in a never-ending chain. The boat crews who transport them by sea often force the women passengers to sleep with them and provide sex. They rape the hapless illegal migrants who refuse. Human trafficking is an organised crime in many countries. Where it occurs, the neighbouring countries become staging boards. It is a collateral issue for such countries. People of distant lands pass through them, not as tourists but as prospective prostitutes, maids, cheap labourers, mercenaries, child labourers, sex commodities of rich and prospective paedophiles, etc. Some of them die locked in airless trailers or containers or simply due to the vagaries of the weather on their

way in search of their dreams. Often, the illegal migrants by sea are called the boat people. They use the sea as the most convenient form of passage to perceived prosperity. Their stories are laden with trauma and tragedy at the end of it. A rickety small boat that totters across the oceans with prospective illegal immigrants to a better country could easily breakdown at sea. Men, women and children scramble for the mercy of god under such situations and often die of starvation and dehydration. There were incidents when women were forced to breast-feed others in order to survive. Under extreme circumstances, people even negotiate eating part of the dead to survive. The desperation turns violent at the refusal to accept the suggestion by other survivors. People are sometimes thrown overboard in a rage of fury. The force of demographic dynamism can withstand anything in a restless and agitated world. On the average in a year, more than 7,000 Dominicans are stopped at sea by authorities from entering the United States (2004). It is understood that the annual figure is ever on the increase in spite of calamities at sea. Inflation in Dominican Republic is 30 per cent (2004). Unemployment is rampant. The United States Coast Guard (USCG) has a regular job in blocking the illegal immigrants. In spite of it all, according to the coast guard, the flow continues.²⁵ People move from where it is harsh to where it is free. A creaky oil fishing boat can carry up to 200 illegal passengers and silently get to the United States shores from Ecuador. The voyage is grim, but they endure it against all odds. The captain of the boat is their saviour as well as the agent of death, merged into one. They are professional human smugglers who thrive on illegal human trade. Faltering economies are believed to be the reason for illegal immigration. It is not exactly so. It is the faltering sense of security in ones own country that could be the reason. Inflated personal aspirations too play a part. In the American hemisphere, the business of human smuggling generates US\$20 billion per year. It is second only to drug trafficking. An average fare from Ecuador to the United States is US\$10,000 to US\$20,000. While the families are not sure whether they will ever see their dear ones after they leave home as illegal cargo, the smugglers and traffickers live in wealth.²⁶ They travel by sea, tractor-trailers, containers, trucks and on foot, which is the most painful part. They will then work as dishwashers, housemaids, sex workers and anything they could put their hands on. In the case diary of the Indian coast guard (ICG) there are entries about a cargo ship *MV Medstar*.²⁷ 14 stowaways, later identified as nine Iranians and five Iraqis, boarded the vessel surreptitiously, allegedly paying US\$250 to outside agencies at Bandar Abbas in Iran. The vessel left the port on 8 June 2000. The Master and crew of the vessel noticed the stowaways only when they came out in the open at sea. They threatened the master and the crew and demanded passage to a European port. The stowaways were able-bodied young men proficient in small arms and explosives, and well-versed with the developments in the world. They were suspected to be aiming to be recruited as mercenaries. The stowaways told the master of the ship that they had placed explosives on board. The master managed to inform the Indian coast

guard who intercepted the vessel 300 miles off Mumbai around midnight on 11 June 2000. It took 13 days of negotiations before deporting the illegal immigrants to their respective countries and releasing the ship from their control. In every case of illegal traffic at sea the vessels use the sea lanes of traffic (SLOT)²⁸ in the expanse of the sea rather than SLOCs to avoid detection by security personnel who normally patrol the latter. SLOTS are more difficult to keep under surveillance. There is another viewpoint too. While governments and security agencies deplore human smuggling, some argues about the moral side of it.²⁹ It is stated that freedom-loving people morally support the efforts to smuggle people out of dangerous conditions in which they live to more acceptable locations, even if it is another country. In the United States, people had broken the law on order to guide victims of slavery to freedom in the late 19th century. Vigilantes and activists have helped many victims of political and religious subversion to escape to better places and supported them. They smuggled people in the name of freedom and a better life. These people felt the moral superiority of a higher society. For some, it is an act of liberation. For others, it is just business. For a nation, it is demographic security that has gone astray with cascading effects on other elements of national security. While population may not be a serious problem, losing the bearing of it is a critical issue in national security.

POPULATION TRENDS

The world population touched the six billion mark on 12 October 1999. It rose to 6.1341 billion by 2001. The developing countries account for more than 90 per cent of population growth. It slowed down or almost stopped in Europe, Japan and North America. The population is estimated to rise to 9.3 billion by 2050.³⁰ Slow birth rates and new curbs on immigration will decline population in some industrialised countries. Japan is expected to lose about 20 per cent. The drop will also be seen in Germany, Italy and Russia. The population of the United States is expected to increase by about 43 per cent. China is estimated to have a regulated increase of 10 per cent and is expected to slip down by 2050. India is surging to become the most populated country in the world with 1.6 billion people on the roll. The rise is almost 50 per cent in that case.³¹ The trends around the world are given in Table 11.4.

It is established that more the number of poor in a country, the larger is the population growth. This statement offers a counter question. Can it be that the larger the population growth, the poorer the country? It is not officially established yet that procreation is the primary hobby of the poor or that they don't play golf leaving sufficient time to copulate. Increase in population also triggers their wanderlust. More than 13 million people are wandering around escaping from persecution, armed conflicts or violence in their countries (2004). The number of the internally displaced (ID) is also substantial.

TABLE 11.4 Population Projection—Target Year 2050

Country	2004 (Million)	2050 (Million)	Percentage
United States of America	293	420	43
China	1,300	1,400	10
India	1,100	1,600	50
Pakistan	111	189	70
Bangladesh	140	280	100
Italy	58	52	(–) 10
Indonesia	220	308.5	40
Russia	143	119	(–) 17
Nigeria	102	307	200

CONCLUSION

Demographic security is about human population and its effects on national security. There is a positive affirmation in the element of demographic security that people, if invested well, can be used strategically for maximising national security. The discipline for understanding the subject is HIM (human investment management). HIM considers humans as value increasing investment instruments, not as resources. People get professionally conditioned by birth, accepted profession, change in fortunes, education, self-values and in many other ways. The underlying principle of HIM is identifying the productive capabilities of individuals and supporting their development in the respective fields for increasing their productivity at national level. At the end of it all, like the question earlier, “how much land does a nation need?” is the basis of asking, “what is the optimum population for a nation under identified standards?” It will be a highly debatable issue but it is a legitimate question that will not only answer the first question, but will also provide ideas for regulating population both ways. It will depend upon the envisaged strategic aspects of human investment that considers population is power. It is the basis of human investment management.

Notes

¹ *The Economist*, “Making Sense of the Modern Economy,” Profile Books Ltd, London, 2001, p. 23.

² Y. Anjaneyulu, *Environmental Science*, B S Publications, Hyderabad, 2004, p. 648.

³ Yojna Gusai, “If It is a Girl the Affluent Prefer Abortion,” *The Asian Age*, New Delhi, 12 September 2005, p. 13. According to a doctor, there is a severe demographic imbalance in child sex ratio in India.

⁴ Chirdeep Bagga, "What is Population Got to Do with Prosperity," *The Times of India*, Mumbai, 17 August 2004, p. 1.

⁵ Vikas Singh, "India No. 1, by 2005? Just Child's Play," *The Times of India*, Mumbai, 17 August 2004, p. 8.

⁶ Ibid.

⁷ *Encyclopaedia Britannica, Ultimate Reference Suite*, CD-ROM, 2004. *Varna* in Sanskrit means colour. This has also brought in speculation that caste systems were originally based on differences in the degree of skin pigmentation.

⁸ The new finding is that humans are designed to run, as seen from the design of their legs and bone structure. It is understandable that they needed the shape and strength to run for survival considering their physical weakness compared to the predators. They also have to run towards the prey at times, in order to hunt.

⁹ This does not mean that the instinct to migrate is inherent in every human being. People who belong to restricted civilisations or are arrested in their culture like the aborigines and tribals are more static than others. These people are all over and the governments have a responsibility towards such people. They are very much included in the concerns of demographic security. However, around the world indigenous people are fighting for their ancestral territories. They are also gaining power in mass movements in developed nations like the United States, Australia and New Zealand. They want to defend their inheritance at any cost—all because they are static and prefer to remain that way by some unusual mindset.

¹⁰ *The Economist*, n. 1, p. 18.

¹¹ Rashid Ahmad and Arun Joshi, "PM Calls for New Kashmir," *Hindustan Times*, New Delhi, 17 November 2004, p. 1. Dr Manmohan Singh, the prime minister of India is a Sikh by religion. In his address at Srinagar, in Kashmir, he stated that he was against another partition of India in resolving the Kashmir dispute. He himself was a victim of the trauma associated with India's partition on religious grounds, the fundamentally foolish acts of humans in an age when tolerance to fellow humans was just dawning. Certainly, today the world should be a better place not to allow such partition again (very evident from this historical bio-modelling) that may cause trauma and agony to many and drag humanity to centuries back in a civilised and secular country. He was very right when he made this statement and belonged to a genre of people who have understood that life is a momentary affair and one should not damage it.

¹² This part comprises people of a country, who for a consideration that mainly will be an all needs met asylum, participate in subversive or terrorist activities or support the invader in war against their own country. The psychological operations mentioned here mean that the purpose was to psychologically defeat the nation as well as use the knowledge of these people in subversive or terrorist activities. There are nations who support such activities. No examples are quoted here.

¹³ "World Refugee Population in Decline," *Hindustan Times*, New Delhi, 18 June 2004, p. 4.

¹⁴ Mini Kapoor, "With Irrational US, Global War Can't be Ruled Out," *The Indian Express*, New Delhi, 18 December 2004, p. 1. Such clashes of information are not to be taken seriously since this book is not a statistical projection of refugee situations in the world. But it is important to understand that data projection could be ambiguous and contradictory.

¹⁵ *The Economist*, n. 1, p. 18.

¹⁶ Ibid. p. 18.

¹⁷ Ibid. p. 18.

¹⁸ Ibid. p. 20.

¹⁹ *Manorama Year Book, 2002*, Malayala Manorama, Kottayam, 2002, p. 370.

²⁰ A traditional game in Indian villages where a player holds breath while getting into the opponents field and tries to touch them in order to score, before losing breath. If caught by the opponents, the player has to touch the centre line, the common boundary, still holding his breath to win.

²¹ "Cuban Women Ships Herself to US in A Wooden Crate," *The Times of India*, New Delhi, 27 August 2004, p. 15.

²² "Women Trafficked into India," *Hindustan Times*, New Delhi, 23 September 2004, p. 23.

²³ "Sex Traffic, Part I," *Channel 4*, London, 14 October 2004.

²⁴ Brian Murphy, "Terrorists Use Paths of Human Smuggling," *www.casperstartribune.net*, 18 August 2004.

²⁵ Ibid.

²⁶ Ginger Thompson and Sandra Ochoa, "To Go from Ecuador to US, Migrants Brave Grim Voyage," *The New York Times*, articles selected for *The Asian Age*, New Delhi, 19 June 2004.

²⁷ *Indian Coast Guard Sources* (Unclassified), n. 18.

²⁸ Prabhakaran Paleri, *Role of the Coast Guard in the Maritime Security of India*, Knowledge World, New Delhi, 2004, pp. 113–115.

²⁹ Scott McPherson, "Human Smuggling is Morally Good," *www.fff.org*, 19 December 2004.

³⁰ Genaro C. Armas, "Developed World Population Declining," *The Asian Age*, New Delhi, 18 August 2004, p. 5.

³¹ Ibid.

12

Disaster Security

Turn around; you will see death, just behind you—smiling.

Disaster can strike anywhere, anytime in a human system, leaving behind untold miseries. The collective behaviour of people gets transformed in the aftermath of a disaster, sometimes permanently. No part of the world is free from disasters. Disasters can reduce national security to an alarmingly low level in moments.

ABOUT DISASTER SECURITY: THE SIXTH ELEMENT

It is against this background that the importance of disaster security in national security has to be appreciated. In this context, the right approach is to appreciate disasters as forewarned threats. A nation that has nuclear reactors can expect a China syndrome or an adversarial strike. A coastal state close to tanker traffic lanes could expect a marine environmental disaster. An earthquake-prone terrain can expect a big one at any time. A tsunami is an untiring and audacious visitor. An avalanche does not choose the time to bury people in the valley down under, by sheer force of gravity. A showdown can be expected when least expected in a country that is a target for militant activism. Therefore, the primary requirement is to identify the disasters the country may face. Managing disaster security begins with preventing the identified disaster. Responding to a disaster, once it occurs, is only incidental. Preventing a disaster is an art that needs to be upgraded continuously. Primarily disaster management is pre-disaster.

ANATOMY OF A DISASTER

A disaster is not the “incident” as widely believed to be. The incident becomes a disaster only when it causes damage to life and property, inducing trauma and distress to people. The damage to the human system is what converts an incident into a disaster. The anatomy of a disaster lies in the reductionistic principles of a process where small changes produce small effects, and large effects are calculated or foreseen by summing up many such small changes beforehand. Mathematicians use the term differential equations for this calculation. It also involves probability theory to allow for chance-induced variables. Chance, coupled with differential rates of change in a system, perfectly designs the anatomical curves of a disaster.

Disaster means disorder, and disorder can be visualised beforehand. It is done every day by everybody in normal, but mostly unnoticed situations—like hitting a tennis ball at the correct time and angle; serving a dish carefully without spilling over, etc. A small change in the process dynamics can cause a disorder—a disaster per se. There can be disasters whose anatomy is non-linear—an earthquake for example. Calculations can lead to alternate realities. In a non-linear system, a small change in one variable can have a disproportionate or even catastrophic impact on other variables. The variables may approach linearly till such time as a small change can break the critical threshold when the entire system collapses. This happens in an earthquake, flash flood, gas leak, reactor burnout, etc.

DEFINING A DISASTER

There is no standard official definition for a disaster. According to Webster's Dictionary, a disaster is *a grave occurrence having ruinous results*.¹ The Encyclopaedia Britannica Dictionary states that a disaster is, *a sudden calamitous event bringing great damage, loss, or destruction*.² The WHO defines disaster as, *any occurrence that causes damage, economic destruction, loss of human life and deterioration in health and health services on a scale sufficient to warrant an extraordinary response from outside the affected community or area*. These definitions notwithstanding, people view a disaster relative to the awe and fury it creates. All the time, the reaction is post incident. Generally, governments and people are indifferent to a disaster pre-incident. While re-defining a disaster with respect to national security, it is important to understand its impact on human well-being. An acceptable definition can be, *a disaster is an incident of disorder that occurs suddenly beyond a critical threshold causing extreme damage directly or indirectly to life, property or both, and collateral to specific elements of national security*. Irrespective of various definitions and classifications, it is easy to understand any kind of a disaster from the angle of distress it causes to life. Disaster is a threat. The threat could even be extraterrestrial. The editors of India Disaster Report preferred to classify disasters as natural, human-made and others.³ They are further subdivided into major and minor disasters, though the difference is marginal. This book refers to human-made disasters as human-induced since humans do not intentionally create a disaster unless it is war or collateral to war, and other exceptional cases—riots, militancy, etc. War and terrorism (very similar in their anatomies) are seen different from the conventional outlook of disasters. There are evidences that human-induced actions can act as catalysts for natural disasters. Mammoth dams are said to be the cause for many earthquakes and flash floods. Activities in the snow-clad mountains are blamed for avalanches, deforestation for heat waves and drought, pollution for disasters caused by climate change and urbanisation and development projects for landslides and more. There are disasters that are not exclusively natural or human-induced. In this chapter they are referred to as other disasters.

NATURAL DISASTERS

Natural disasters are incidents that cause damage to human systems without direct human intervention. Briefly amplified, they are:

Earthquake

200 million years ago there was just one super continent—Pangea.⁴ In course of time, it broke away and the parts drifted. Today, there are 12 tectonic plates that move around.⁵ Earthquakes occur when they collide⁶ as well as when the stress accumulated along the geological faults is relieved. There are three major earthquake belts in the world. One passes around the Pacific Ocean. An estimated 80 per cent of energy released in earthquakes comes from those whose epicentres are in this belt. A second belt goes through the Mediterranean region eastward through Asia. The energy from this belt is about 15 per cent. The third belt connects activities along mid-oceanic ridges and along the rift valleys of East Africa. About 50,000 earthquakes are noticed or experienced annually all over the earth. Some of them cause disasters (Table 12.1).

TABLE 12.1 Major Earthquakes⁷

<i>Year</i>	<i>Place (Known intensity in brackets)</i>
1556	China
1755	Lisbon, Portugal
1811	New Madrid, Montana, United States
1812	New Madrid, Montana, United States
1883	Indonesia, United States
1906	San Francisco
1906	Ecuador, (8.8)
1920	China
1923	Tokyo, Yokohama, Japan
1923	Russia, (8.5)
1923	Japan
1927	China
1938	Indonesia, (8.5)
1950	Tibet, China, (8.6)
1952	Russia, (9.0)
1957	Alaska, United States, (9.1)

(Contd)

Table 12.1 Contd

Year	Place (Known intensity in brackets)
1960	Coastal area, Chile (9.5)
1964	Alaska, United States, (9.2)
1965	Alaska, United States, (8.7)
1976	Tang-shan, China
1985	Mexico
2004	Indonesia, (9.0)

Volcanic Eruption

A volcano has its roots deep inside the boiling earth where it is coping with its thermal evolutionary stability. In an eruption, molten lava and ash are hurled violently around. The destructiveness of volcanoes is awesome. The explosive eruptions can affect climate and cause serious climate change many times greater than what humans can induce. Undersea volcanic eruptions of serious magnitude are felt in Hawaii, Indonesia and Japan. There are reports (2004) that rumbling earthquakes are experienced under the volcano Mauna Loa in the Big Island in Hawaii which may erupt for the first time in 20 years.⁸ The prediction could be the first of its kind if it becomes true.

Tsunami

Tsunami is a series of catastrophic ocean waves of high amplitude that hit distant coastal areas with powerful energy gathered while in motion. Tsunami means harbour wave in Japanese (*tsu* means harbour and *nami* means wave in Japanese⁹). Tsunami can change the profiles of coastal areas, the ocean floor and islands. Underwater seismological activities can trigger such waves and so can extraterrestrial objects that plummet at tremendous speed into the sea. The wave could be a hundred nautical miles long from crest to crest or trough to trough and move at a speed of about 500 knots (nautical miles per hour). When it reaches the shallow waters, it rises up to an unbelievable height. The eruption of the Indonesian volcano Krakatoa (Krakatau) in the island of Pulau Rakata in Sunda Straits on 27 August 1883 caused the most catastrophic tsunami known in history. It was 3,000 times more powerful than the nuclear bomb that destroyed Hiroshima during the Second World War. The island sank; in its place a new volcanic island came up—*Anak Krakatoa*, meaning son of Krakatoa. The tsunami reached as far away as India's east coast, Britain, South America and Hawaii. Another eruption could be as violent as the original some day.¹⁰ More recently an earthquake with a magnitude of 8.9 on the Richter scale, occurred at 6.28 am (IST) on Sunday, 26 December 2004, off the coast of Sumatra in Indonesia. Powerful tsunami hit the coastal areas of

15 countries on the Indian Ocean rim (IOR): Bangladesh, India, Indonesia, Kenya, Madagascar, Malaysia, Maldives, Myanmar, Seychelles, Somalia, South Africa, Sri Lanka, Tanzania, Thailand and Yemen. The tsunami killed, injured, mislaid and displaced 2.5 million people. The death toll alone was estimated to be close to 300,000. A million people were affected in Sri Lanka alone. Landmines floated and sank into the sea in the insurgency torn north-eastern Sri Lanka. A toxic waste dump was hit in Somalia causing illness among people. The dump was a cheap disposal site for heavy toxic wastes created at an extremely low cost taking advantage of the lack of government in Somalia in the 90s. In India, the geographical profile of the Andaman and Nicobar Islands changed. Scientists predict another tsunami that may kill about a million people and devastate the shores of Britannia and the east coast of the United States among others when the volcano Cumbre Vieja at Las Palmas in Canary Islands is triggered. The volcano erupts at intervals of 20 to 200 years. The last was in 1971. The next eruption is likely to dislodge a 12-mile long slab of rock that will crash to the seabed causing a dome of water a mile high. The rock is already slipping down; at the last moment, it will take 90 seconds to dislodge. The resulting tsunami, at 800 kmph, will hit Britain and the US east coast with 165 feet waves. Boston, New York and Miami in the United States will be hit and the Caribbean overwhelmed.¹¹ Some of the devastating tsunamis in history are given in Table 12.2.¹²

Flood

The greatest of all the floods that have been spoken about, was the biblical flood. The Indian epic *Bhagavata* narrates a great flood in which the Earth itself went under water as a separate entity. The visualisation was at a cosmic dimension. These narratives indicate that floods were common in the world from ancient times. Incessant rain that submerged everything on the earth's surface was the cause of the biblical flood. The next great flood is predicted by melting of ice caused by unprecedented global warming. Floods are caused due to incessant rain, storm surges, tsunamis, ice jams, dam bursts, glacier melting and other reasons. In Indonesia, flash floods have been attributed to illegal logging. It could also be due to breaching or overflowing of a dam in the neighbourhood. 2,000 people were killed in Haiti in a small town when a tropical storm induced flood in 2004.¹³ Table 12.3 shows the major recorded floods. The 1931 flood in China was the largest killer so far. 3.7 million people are said to have perished.¹⁴

Drought

There are different kinds of drought—permanent drought where agriculture is impossible, seasonal drought where agriculture must be adjusted during rains, unpredictable drought because of unexpected failure of rainfall, and invisible drought that occurs in summer and results in diminished crop yields. In a drought, the static peasants are the most affected. A parching drought and recurring crop failure bring a spate of suicide waves among farmers in India.

TABLE 12.2 Devastating Tsunamis

Date	Location	Nature of Tsunami
1 November 1775	Lisbon, Portugal	The Lisbon earthquake triggered a tsunami. Waves up to 20 feet high hit coastal Portugal, Spain and Morocco. 60,000 died.
27 August 1883	Indonesia	Krakatau erupted and generated a tsunami. Java, Sumatra and the west coast of India including Andaman and Nicobar islands were devastated in the rising flood.
15 June 1896	Japan	70 feet high waves. Wiped out a crowd gathered to celebrate a religious festival. More than 26,000 died.
17 December 1896	California, USA	Devastated Santa Barbara embankment and main boulevard.
31 January 1906	Tumaco, Colombia	Offshore earthquake submerged part of Tumaco and washed away every house between Rio Verde, Ecuador and Micay, Colombia. 500–1,500 died.
26 June 1941	Andaman and Nicobar islands, India	Widespread destruction in the middle and south of the islands. Seriously affected Tamil Nadu and other parts on the west coast of India.
1 April 1946	Alaska, USA	Earthquake generated tsunami destroyed North Cape Lighthouse. Hours later the wave hit Hawaii killing 150 people and causing millions of dollars in damage.
22 May 1960	Chile	35 feet tsunami. 1,000 died in Chile. Damages and death caused in Hawaii. Swept across Pacific and caused damage in Philippines, Okinawa and Japan.
28 March 1964	Alaska, USA	A scale 9.2 earthquake and tidal wave caused destruction in three villages in Alaska. 107 died in Alaska. Swept down the west coast and reached Oregon and California.
16 August 1976	Philippines	5,000 killed in tsunami in the Moro Gulf region.
17 July 1998	Papua, New Guinea	Offshore quake triggered off a tidal wave that struck Papua, New Guinea. More than 2,000 died. Thousands became homeless.
26 December 2004	250 km south-east of Sumatra, Indonesia	Worst ever reported earthquake since 1964. 9.2 on Richter scale. Affected 2.5 million people in 15 countries in Asia and Africa. The quake changed the map of Asia. Small islands moved as much as 20 metres.

TABLE 12.3 Major Floods¹⁵

<i>Year</i>	<i>Place</i>
1658 and 1910	Paris, France
1861 and 1964	Warsaw, Poland
1854 and 1930	Frankfurt, Germany
1530 and 1557	Rome, Italy
1342, 1402, 1501 and 1830	Danube River
1877	China
1824	Neva River, Russia
1931	China
1099–1953	Coastal belt of England, Belgium and the Netherlands
1755	Lisbon, Portugal
1946	Hilo, Hawaii, United States

Cyclone

A cyclone, also known as a tropical revolving storm, occurs in the tropical seas. A serious threat to coastal areas, it is known by different names, according to the region—“hurricane” in the Atlantic and Eastern Pacific, “typhoon” in the Western Pacific, “willy-willy” in Australia and “bagius” in the Philippines. Often, it is accompanied by damaging winds, torrential rains leading to floods, and storm surges that inundate the coastal areas. Bangladesh is one of the heavily cyclone-prone countries. 200,000 people perished in a cyclone in 1970 in Bangladesh. The next major cyclone that hit the country in 1991 killed another 138,000.¹⁶

Avalanche

An avalanche is caused when a large mass of rock debris or snow loses frictional resistance and is pulled down at great speed on a mountain slope by gravity and acquired momentum. The frictional resistance of the sloping surface is lost often after the foundation is loosened by spring rains or is rapidly melted by a foehn (warm, dry wind). Any vibration—by sound, earthquake, construction nearby, etc.—can trigger an avalanche endangering lives and property along its path.

Heat Wave

A heat wave becomes severe when the summer temperature rises substantially.¹⁷ Basically, it happens when the rains play truant by atmospheric anomalies. Although the clear-cut nexus is not established, meteorologists blame global warming and

climate change and ocean phenomenon of El Niño for erratic rains.¹⁸ Severe heat wave kills people overstressing the body's cooling mechanism.

Cold Wave

A cold wave is the great chill, an unusually large and rapid drop in temperature over a short period of time. It is also a phenomenon of erratic climate. A cold wave occurs when temperature drops suddenly, especially in winter. According to meteorologists, a cold wave condition is declared when the minimum temperature drops four degrees below normal. When a cold wave occurs, it also lowers the temperature in other parts of the country.

Tornadoes

Tornadoes, also called twisters, occur because of instability created within the earth's air masses and wind systems. It is a rotating air column in the shape of a funnel in contact with the ground that moves at high speed wreaking havoc along its passage. The width could vary from a few metres to a kilometre where it touches the ground. Wind speed of up to 800 kmph (500 mph) has been recorded. It can travel long distances causing heavy destruction on the ground.

Hailstorm

Hailstorms are destructive to crops, properties and to a certain extent, to animals. It is solid precipitation with balls or pieces of ice from 5 mm to 10 cm diameter raining under the influence of large convective clouds. Often cumulonimbus (C_b) clouds with strong updrafts provide the ideal situation for a hailstorm.

Landslide

Landslide is dispersal of land under gravity burying everything underneath. This normally happens when the slope becomes unstable. One of the causes is unplanned urbanisation. Landslides could even take place under the sea or islands and coastal interfaces that could trigger a tsunami.

Threat from Near Earth Objects

Unlike smaller meteoroids, large asteroids can pass through Earth's atmosphere without being burnt off and strike at velocities of many kilometres per second. It is presumed that one such object destroyed the dinosaurs around 65 million years ago. It was called the KT meteor.¹⁹ In the 1990s, an asteroid passed 100,000 miles close to the earth twice. The narrow escape that the planet had in interstellar distance could be compared with a bullet skimming through the sleeve at point blank range. According to astronomers there are more than 1,200 objects in space²⁰ and more than half a mile across that may strike the earth one day. There are a couple of hundred million asteroids and meteoroids in the solar system. Those in the earth's circle are called neos—near earth objects. Statistical chances of flyby

are more than one a year. The impact when it happens can cause more damage than any other known disasters.²¹ Neos alone need not be the cause for worry. There could be other threats too from beyond space. Extraterrestrial disaster could come from a falling star in the solar system. Scientists all over the world were amazed when the super-magnetic neutron star, called SGR 1806–20, about 50,000 light years²² away in Earth's galaxy sent a flash of radiation that was bounced off the moon over the Earth that lit up the sky in February 2005. The light detected was brighter in gamma than visible light or x-rays. The shower of radioactive rays could have caused mass extinction of all living things on Earth if the distance of origin was 10 light years away. The energy released was about 10,000 trillion watts.²³

HUMAN INDUCED DISASTERS

Humans could be a cause, but not the ultimate or exclusive cause for an incident becoming a disaster. Important examples of such “human-induced” disasters often quoted are climate change, riots, ethnic conflicts, refugee issues, etc.

Attributable Climate Change

According to news reports, over the next 20 years, climate change can result in global catastrophes costing millions of lives.²⁴ Major European cities may sink beneath the rising seas. Britain may plunge into a Siberian climate by 2020. There could be nuclear conflicts and mega droughts. This will result in famine and widespread riots all over the world. Disruption and conflict will be endemic features of life. At the end of it all, once again in human history, wars will be the determining factor.²⁵ How it will all happen, is a question that is yet to be examined seriously.

Riots and Ethnic Conflicts

A riot is a public uproar or disturbance. When it is due to communal violence, it is preferable to see it separately under ethnic conflict. Ethnic security is a separate identified element of national security and is explained later in the book. Most riots and ethnic conflicts are pre-meditated under hate and associated psychological factors.

Refugee Situations

Refugees are victims of dislocation and disposition. Mostly they are citizens of failing and failed states. They flee from their homes situated in conflict-ridden regions for fear of death under human rights violation. Refugees are “nowhere people” who are economic and demographic liabilities to host nations.

OTHER DISASTERS

There are other disasters too. The examples given are those not mentioned previously either as natural or human-induced.

Epidemics

Epidemics kill *en masse* the population of an affected area. Epidemics are believed to be the outcome of endlessly mutating killer micro-organisms. It is also presumed that environmental changes such as converting forests into ranch lands can produce new viruses that can cause deadly diseases like SARS (severe acute respiratory syndrome) and HIV.²⁶

Industrial Disasters

Industrial accidents cause hazard to industrial workers as well as those in the neighbourhood. Fast track industrialisation can violate most of the selective norms for industrial safety. Industrial policies that are ad hoc overlook safety and can cause serious damage not only to life and property, but also to a nation's capability projections.

Fire

Fire, the most potent companion of humans that changed their life in the early days, has a very fiendish face when it becomes a destroyer of everything that comes in its path. Fire is associated with most of the destructive acts, violence and accidents. There are also accidental fires in coal beds, oilfields, forests and grasslands that burn for days together.

Policy-induced Disasters

This is a subject that is not normally considered by disaster specialists. Can a policy be a cause for a disaster? According to author Dominique Lapierre the Bhopal gas tragedy in India (in the night of 2–3 December 1984) talked of sabotage.²⁷ The accused were the former Union Carbide Corporation Chairman Warren Anderson and eight others. The charges were diluted in September 1996. But thoughts can run riot under investigative inquiries into any incident. India carried out its first nuclear test on 18 May 1974. That startled the world, especially its Cold War adversary and foster companion of Pakistan, the United States. Prime Minister Zulfikar Ali Bhutto launched the Pakistani nuclear programme (officially) in 1979 headed by a renowned metallurgist Abdul Qadeer Khan. (But, Bhutto had actually started the programme in 1972, immediately after defeat in the 1971 war with India, two years earlier to India's test). Pakistan's main nuclear research facility was in Kahuta. The CIA, in one of their off-the-cuff frenzy moments, is said to have alerted Pakistan that India would attack Kahuta on 21 October 1984.²⁸ The Pakistani warning was that their fighter-bombers would strike at every nuclear installation in India.²⁹ In a (presumed) critical nuclear flashpoint, was it necessary to make India aware of the consequences of its intentions by a bio-model in the form of an industrial disaster? Godfathers of the mafia are known to believe in such live simulations to drive home serious points to those who dare to defy the dictates. If so, who was interested in teaching India a lesson? Did Bhopal replace

the beheaded horse *Khartoum* of “Godfather” fame?³⁰ Paranoia can lead to anything in the hands of those who are capable, but unwise and ruthlessly selective in their decisions. Pakistan did not have the geostrategic capability to teach India a lesson and to pre-empt an attack if India was really planning it. Well, the Bhopal industrial disaster just over a month later could be strictly coincidental, but the ways of the world are very deceptive when power games play havoc in the lives of common people. The one who will never know is the one who is considered the know-all—the common person that constitutes the public. That is the irony of it all. Did anyone benefit from the Bhopal gas tragedy? But, at the end of a disaster, there are many winners.

Accidents

Accidents can be far too many and those that could be brought under disaster security come from all those that cause serious trauma to people, however small their numbers may be. Accidents are also costly for the economic development of a nation.

Resource-induced Disaster

Resource-induced disasters arise from over and unplanned exploitation of natural resources. An example is the resource-induced disaster in China in August 2004, when the water table depletion caused the earth to sink about an area of 1.6 sq kms that caused replacement of about 8,600 people. The loss estimated was about US\$18 million.³¹ Similarly those that are caused by coal bed fires, illegal logging, mining, etc., can be brought under resource-induced disasters for a different appreciation.

DISASTER CYCLE

The disaster cycle comprises the collective behaviour of national and international governments, disaster workers and experts, media and the community or group, in a probable disaster area from the early warning to rehabilitation. Their activities peak immediately following a disaster. Thereafter it will be subdued, especially when the initial shock fades away from the memory of the people except direct or indirect victims. A disaster cycle goes through different stages starting with a warning period. According to disaster management experts, this period is the most difficult because neither the common people nor those in power take a disaster warning seriously and involve in efforts to prevent them.³² There will be a collective self-deception and the inhibition of tendencies toward flight from imminent disaster. The next stage is the impact and stocktaking period. The period of impact can be long in certain cases like floods, hurricane, etc. whereas, in an earthquake or explosion, the period of impact is short. According to disaster psychologists, the combined period of impact and stocktaking is marked initially by a

fragmentation of human relations, as people are separated from others and customary moorings. Subsequently, there is a resurgence of interpersonal warmth that transcends customary social barriers within the disaster-affected community. The final stage is re-building and damage mitigation. This has to be done under a contingency plan appropriate to each disaster. In a disaster cycle, the victims go through behaviour modifications. The post-disaster situation can be characterised by apathy, disorientation, wandering, surprise, perplexity, fear, anxiety and helplessness. Life absolves the living. While there will be a flood of contributions in various forms for relief operations, emotional aspects are not catered for. Disorganised relief operations will culminate in a different disaster. Too many agencies, competition to gain limelight, opportunism, corruption, etc. may push relief operations under a cloud, with the victims hardly getting any benefit. The victims need protection and serious support from social psychologists and trauma managers. Disaster security is one element that can place even the most developed nations in a limbo. In fact the more developed a nation, the more will be the disbelief among people. The question will be, “how can it happen to us?”. The time from denial and disbelief to acceptance will be longer. Disaster creates an aftermath of moral ambiguity. Initial horror gives way to an insidious sense of guilt. The aggrieved will feel the loss and also the gain of one’s own life. The guilt of the survivors will still remain with them. It was death by proxy for many. The victims in disaster may lose faith in “their” own god and will be ripe for conversion. It is a situation that the agents of religions will take advantage of. The victims will be vulnerable to theft, robbery and exploitation. Lawlessness will be a serious issue. Sensitive areas will be open for espionage under the guise of relief operations and the country may also end up as a financial aid victim under “painless” and silent economic warfare. Rumours and panic information will spread fast in the aftermath of a disaster. Media reports, if not briefed thoroughly, could distort the situation. Disaster security is in peril in an ineffective system when all the people can hear is the lament of the dead in the midst of people clamouring for power, fame and wealth. Disasters may dilute the power of the government. The government has to be ready in all respects and in absolute control. Fund collections, espionage, fundamentalism, kidnapping, theft, rape, robbery, exploitation, religious conversion, political affiliation, cult formation, etc. are all the order of the day in the life of a disaster.

DISASTER PREVENTION, PREPAREDNESS AND RESPONSE

The response of people to familiar disasters becomes conditioned behaviour in the absence of trained and developed programming. Disaster management therefore, is vital to safeguard interests of national security. A logical approach, which incorporates a coordinated, integrated and progressive sequence of preparedness measures and related actions, is necessary. The purpose of a disaster management plan is to prevent disasters, and to minimise damage to life, property

and environment by optimum use of resources when it occurs. Various stages of disaster management are:

- Preventive preparedness
- Containment
- Response
- Mitigation
- Recovery

Preventive preparedness for each disaster will be different. It covers the measures including planning to prevent a disaster in case the incidence occurs. A well-planned preventive preparedness system shall consist of:

- Mapping the disaster terrain
- Review process of the disaster terrain
- Legislative measures
- Contingency plans for early warning
- Reporting systems
- Communication plans
- Control teams
- Equipment
- Resources and assets
- Casualty procedures
- Media policy
- Welfare and rehabilitation arrangements
- Training and updating programmes

Containment, as the name implies, deals with containing the disaster within its boundaries of maximum damage once it occurs. The response, on the other hand is centred on saving life and relieving human sufferings in a contained disaster situation. It also includes:

- Protecting property
- Preventing further escalation (where it was not possible to contain before)
- Safeguarding environment
- Responding to the media
- Keeping the life moving on

Mitigation is about minimising damage subsequent to a disaster. Recovery embraces all the activities that are necessary to bring back normalcy. Operational flexibility therefore, should be incorporated in a well-defined contingency plan under well-established principles:

- Probability of disasters occurring
- Vulnerability of the system
- Progressive sequence

- Effect of the disaster
- Primary purpose
- Additional purpose
- Flexible framework
- Key requirements: communication and information flow
- Publicity of the plan among all concerned

Priorities in a contingency plan remain constant. It depends on the nature of disaster. Planning priorities include:

- Pre-planning for risk reduction
- Critical factors that need to be protected and measures to protect them
- Achievable aim
- Key requirements and prepared action lists
- Response needs
- Recovery needs
- Post planning: resources, finance, training, etc.

The basic requirements of a contingency plan are:

- Flexibility
- Simplicity
- Understandability
- Situation compatibility

Effective contingency planning against a disaster is a co-operative process involving government and all those who share the risk and responsibility. Almost all disaster management plans call for a multiple activity profile. For example, an earthquake will involve search and rescue, fire control, power reinstatement, epidemics control, utility services realisation, civil reconstruction, etc. The multiple activity profile can take its toll when the activities within it conflict with each other during the execution of the plan. The plan therefore, needs to be prepared carefully to avoid activity conflict during execution. There are patterns that can lead to understanding disasters. They can be region specific or cause specific. Some of these patterns can point a way to identifying measures to prevent them; others may lead to identifying and improving ways to mitigate them. Disaster management needs worldwide attention and import of management techniques from expert countries. Legislative measures are based on prevention alone. Legislative measures may regulate the activities, but neither immunises nor indemnifies the society from falling victim to disasters. The government is not the lone agency for disaster management. It needs to identify partners in cooperative disaster management comprising national and international agencies, both governmental and non-governmental. Such partnership will bring together the government with organisations of civil societies including grass root groups, research and academic institutions, bilateral aid agencies, private sector companies and agencies under a

designated central coordinating authority for each identified disaster situations. Disaster is a traumatic experience for the victim. Close cooperation between the victim, whose life is being saved and the rescuer is necessary in any disaster management situation. Majority of disaster scenes are also scenes of crime where victims are looted by lurking opportunists. Law enforcement and providing legal aid to the victims under such situations are imperative for effectiveness of a disaster management plan. Managing disaster is a different game altogether, often made complicated by the weather and other constraints. The unwritten laws of disaster whip up a bundle of nerves in every situation and test the guts of those who dare:

- Disasters will occur—ignoring the danger offers no protection
- Preparations will never match the incidents that occur: the more complex the preparation, the less precise the match. It is chance theory
- Disasters invariably happen at a time of maximum inconvenience

These unwritten laws underscore the uniqueness of any disaster, and the consequent need for simple, flexible and coordinated contingency planning.³³ The national level programmes on disaster management will require inclusion of specialists from various fields supported by law enforcement agencies and efficient administration. The success of any plan depends upon the law of diminishing damages and increasing prevention in course of time. A failed plan is the one that doesn't support such advantages. For example, an earthquake in a region will fail to bring the attention of the society to the need for earthquake proof buildings. A flood situation will recur adding to the woes and miseries of the people periodically. There is no room for complacency or inefficiency in effective disaster management. It is a national task that calls for involvement of the government and the public together with a degree of awareness proportionate to the intensity and likely repetition of the disaster. The management plans should emphasise all the critical phases of a disaster in a particular terrain: pre-disaster phase, disaster phase and post-disaster phase. The pre-disaster planning includes risk assessment, mapping of disaster types and spots, identifying and assigning roles to various agencies, launching awareness campaigns, issuing warnings, training volunteers, advocacy and planning, standardising habitat designs as preventive methods, simulation and exercises. The activities involved during a disaster phase are rescue, first aid, trauma support, distribution of medicines, making the victims know that they are supported, maintaining law and order, sanitation and hygiene, preparing to counter cascading effects, containing rumours, allowing information flow and assessing damages. The post-disaster phase has a tendency to slow down and become complacent in approach. Effective management of the post-disaster phase is vital for preventing recurrence of the disaster. It includes technical and material aid for reconstruction, rehabilitation, pre-empting exploitation of the affected, financial aid distribution, providing legal aid, monitoring and designing disaster resistant habitats and reviewing the existing contingency plans from the lessons learned. Disaster security has to be ingrained in national governance and organisational

management. It needs the support of all concerned. It is a tall order social activity that can contribute seriously in elevating the national security index.

COST–BENEFIT ANALYSIS IN DISASTER MANAGEMENT

CBA (cost–benefit analysis) is very apt in disaster security because sometimes, the best way to deal with a particular incident that may not trigger a disaster is to leave it alone. This is especially so with natural disasters. In national security, a human life is priceless. Therefore, in any disaster situation, saving and managing life has to take priority. It is not really subject to the CBA. Unless the consideration is for zero human casualty, all disaster management techniques should be scanned thoroughly for the CBA. Disaster management involves public money that has to be spent cautiously and judiciously. The CBA is an attempt to measure the social benefits of a proposed project in monetary terms and compare them with its costs. A cost-to-benefit ratio is determined by dividing the projected benefits of a programme by the projected costs. A programme having a high cost–benefit ratio will take priority over others with lower ratios. Determining this ratio may involve a wide range of variables. Both quantitative and qualitative factors need to be taken into account, especially when dealing with social programmes. For instance, the monetary value of the presumed benefits of a given program may be indirect, intangible or projected far into the future. The time factor must be considered in estimating costs, especially in long-range planning. The problem with this method is in determining the benefits in monetary values. Besides, it is not necessary that decisions are always based on the cost–benefit ratio, especially when political compulsions overrule the process.

DISASTERS AND HISTORY

The world is continuously carved up by disasters. Human lives change accordingly. Disasters have often deflected the course of history.³⁴ Winds, waves and earth have toppled empires. Disasters rip away social moorings. In the past, around 5,500 BC, the Mediterranean rose as the last ice age melted. The sea burst through the hills surrounding a brackish lake to the northeast and created the Black Sea. Sea water poured in for weeks through what is now the Bosphorus covering the human habitations around the lake. In 1,600 BC the Santorini volcanic eruption devastated Crete, capital of the Minoan empire, its fleet and its coastal cities. The empire was weakened and conquered by the Mycenaeans of the Greek mainland, who established the model for western culture. The Moche civilisation, based on desert valleys in costal Peru have been constantly weakened by earthquakes and El Niño storms that washed away hundreds of miles of irrigation canals from the Andes. Plague undermined the mediaeval social order by killing a third of Europe in the 14th century. Typhoons in 1274 and 1281 saved Japan by sinking Mongol amphibious assault forces. Hails, the size of quail eggs annihilated a marching army on Reims to crown Edward III the king of France in 1360 and taking the

fight out of the superstitious Edward. Invasions of Russia by Napoleon and Hitler were bogged down by harsh winters. According to Paul Saffo, the director of the Institute for the Future, a San Francisco area research group, the 1883 Krakatoa eruption helped Muslim fundamentalists among the Indonesian nationalists already assassinating Dutch colonial planters and fighting their marines. "There was a sense that old gods have failed them."³⁵ The world watches such scenes repeatedly, often helplessly.

CONCLUSION

Disaster is a dreaded word. It affects the psyche of a nation. The disaster management policy under disaster security is not just preparing contingency plans. Primarily, it is disaster prevention that includes disaster policing. The government should understand that a disaster victim has a right to relief. There are many incidents where disaster-affected parties lose heavily. It is more so in induced disasters. An example is the December 1981 Bhopal gas tragedy catalogued in this book as policy-induced disaster. It has been described as, "apocalyptic fruit of man's megalomaniac greed, incompetence and negligence."³⁶ 8,000 people died immediately. 500,000 people were affected by multi-systemic injuries. The death toll rose to 16,000 in the subsequent years. There appears to be no end to the physical and mental sufferings faced by the survivors, according to reports.³⁷ There was talk of sabotage: "a disgruntled worker injected water into the system that led to the disastrous reaction."³⁸ Also, a doubt prevails, "was it intentional?" Whatever it may be, the trauma is more to the national psyche of India than to the dead and living dead of Bhopal.³⁹ The world has witnessed many disasters in its evolution. It is shaped by disasters. The bottom line of disaster security management is to find ways and means to co-exist with disaster causing incidents without turning them into a disaster.

Notes

¹ S. Parasuraman and P.V. Unnikrishnan (eds), *India Disasters Report*, Oxford University Press, New Delhi, 2000, p. 3.

² *Encyclopaedia Britannica, Ultimate Reference Suite*, CD-ROM, 2004.

³ Parasuraman, n. 1, p. 4.

⁴ www.morelandschool.co.uk, 4 July 2005.

⁵ *Ibid.* They are the Eurasian, Philippine, Arabian, African, Australian-Indian, Juan De Fuca, Pacific, Cocos, Nazca, South American, Caribbean and North American plates.

⁶ "Was Tsunami Quake a Catalyst?" *The Asian Age*, New Delhi, 28 December 2004, p. 4.

⁷ *Encyclopaedia Britannica*, n. 2. Also *The Hindustan Times*, New Delhi, 28 December 2004, p. 3, and "Deadliest Natural Disasters since 1500," *The Times of India*, Mumbai, 31 December 2004, p. 1.

⁸ *PTI News Scan*, New Delhi, 13 September 2004.

⁹ "Tsunami waves," *Sainik Samachar*, 1–15 January 2005, p. 2.

¹⁰ Prabhakaran Paleri, *Role of the Coast Guard in the Maritime Security of India*, Knowledge World, New Delhi, 2004, pp. 117–118.

¹¹ Stuart Wavell, “Bigger Disaster Ahead: Expert,” *The Times of India*, Mumbai, 3 January 2005, p. 10.

¹² “Killer Tsunami’s History Dates Back to Ancient Rome,” *Mid-Day*, New Delhi, 28 December 2004, p. 4.

¹³ *PTI News Scan*, New Delhi, 28 September 2004.

¹⁴ *Times of India*, n.7.

¹⁵ *Encyclopaedia Britannica*, n. 2, also *The Times of India*, n. 7.

¹⁶ *The Times of India*, n. 7.

¹⁷ Parasuraman, n. 1, p. 177. According to the Indian Meteorological Department, severe heat wave is when the temperature increases seven degrees Celsius or more above normal in a place at the given time of year.

¹⁸ *Ibid.*

¹⁹ Swaminathan Ankelsaria Aiyar, *The Times of India*, Mumbai, 2 January 2004, p. 12.

²⁰ “Crash Mission to Deflect Asteroid Bound for Earth,” *Hindustan Times*, New Delhi, 17 July 2004, p. 21.

²¹ “Asteroid Gives Earth Its Closest Shave,” *The Times of India*, Mumbai, 28 August 2004, p. 11.

²² A light year is the distance light travels in a vacuum in a year. It is approximately 9.46 trillion kilometres.

²³ “Giant Flare Lights Up Milky Way,” *The Times of India*, New Delhi, 20 February 2005, p. 1.

²⁴ “Climate Change can Destroy Earth,” *Hindustan Times*, New Delhi, 23 February 2004, p. 1.

²⁵ *Ibid.*

²⁶ *PTI News Scan*, New Delhi, 4 August 2004.

²⁷ Dominique Lapierre, “Do not Forget the Martyrs of Bhopal,” *The Times of India*, Mumbai, 3 March 2000, p. 1.

²⁸ William E. Burrows, and Robert Windrem, *Critical Mass*, Simon and Schuster, New York, 1994, p. 350.

²⁹ It was quite natural for the American intelligence agencies to conclude in such a manner as seen in the past whereas, India’s operational strategies till then did not project that India would launch such a strike.

³⁰ Mario Puzo, *The Godfather*, Arrow Books, London, 1998. Jack Woltz, the authoritarian, lascivious and influential Hollywood movie magnate, got the message when he refused to cast Johnny Fontane the godson of Don Corleone, in his movie in spite of requests and warnings from the Don’s emissary, Tom Hagen. The warning came in the form of the severed head of his 600,000 dollar undefeated racer *Khartoum* whom he had decided to put to stud in his stables. He found it right on his bed in a thick cake of blood when he woke up on a Thursday morning. He knew what could follow unless he changed his intentions.

³¹ *PTI News Scan*, New Delhi, 26 August 2004.

³² *Guardian News Service*, n. 12.

³³ Prabhakaran Paleri, “Disaster Management at Sea,” *Journal of the Indian Ocean Studies*, Vol. 3, No. 3, Society for Indian Ocean Studies, New Delhi, July, 1996, p. 272.

³⁴ Donald G. McNeil Jr., “Will History Repeat Itself,” *The Times Of India*, Mumbai, 4 January 2005, p. 5.

³⁵ Ibid.

³⁶ Lapierre, n. 27.

³⁷ Ibid.

³⁸ Ibid.

³⁹ Burrows, n. 28, pp. 15–21, 349–350, and Suchandan Gupta, “Gas Bribes and Red Tapes in Bhopal,” *The Times of India*, Mumbai, 10 December 2004, p. 7. Does the Bhopal gas tragedy warn about a nuclear war? The scenario is important here. The fact that war itself is a disaster can be seen from the findings of William Burrows and Robert Windrem in their book *Critical Mass* dealing with the dangers of super weapons in a fragmenting world. The relevance of this report is not important to this chapter. The bottom line is that an act of war with conventional, nuclear, chemical or biological weapons can fall in the category of national disaster. The Bhopal gas tragedy is also an example of exploitation of a disaster. It could sometimes be worse than the tragedy itself. Compensation will be a distant dream in many of the countries where the social systems are riddled with politics and corruption. The bureaucratic requirements for a victim to collect the amount of compensation will make them run from pillar to post greasing the palms of the middlemen in the various agencies and commissions, including the non-governmental organisation (NGO) activists. Bribes, misappropriations and red tape will mortify any known societal order in the event of a disaster, according to a report.

13

Energy Security

Back to the caves is what humans have to avoid, like death...

Humans learnt to use fire around one million BC.¹ The miracle of energy beyond physical energy finally arrived as an agent of change. The nights were not as dreadful and cold as they were before. Till then, almost two million years, people were living in a world that was dark at night.² Energy changed lives in progressive spans of time that were longer than generations. One day, ideally, the return sweep should bring everything to an end.

ENERGY SECURITY: THE SEVENTH ELEMENT

Energy is created out of specific resources to supplement human efforts by providing power to do work. The world is yet to step on a source of energy that is both economically viable and environmentally acceptable, even though there are remarks that the energy consumption has already peaked. There lies the crux of energy security. If the time taken from Stone Age tool-making to learning to control fire—about two million years—is a rough indication, it will be a long time before humans invent new sources of energy. The study of energy security as an element of national security begins from this hypothesis and leads to others:

- Progress of the world depends on energy
- Energy consumption seems to have reached the peak
- It cannot progress further, but can only retain the current momentum and slowly decelerate unless a miracle replacement is found
- Equivalent or better replacement does not seem to be a possibility
- If possible, it may not be immediate
- By the time the current energy dwindles, there will not be an equivalent replacement
- A blackout will undermine further progress, because energy is needed to discover and develop new energy resources

Replacement energy has to be identified at least before the current energy slip begins. Energy slip starts at the moment of decline of a particular energy source and lasts till it is permanently replaced by a similar or advanced energy source. The decline could start immediately after the particular energy consumption has

peaked. Thereafter, it is avoiding an energy gap—the period between total exhaustion of the energy source and its replacement by another energy source. The replacement energy source could be inferior or a temporary alternative. The energy slip continues until replaced by a similar or superior alternative. Energy slip (E_σ —epsilon sigma or E sigma, symbolically) and energy gap (E_γ —epsilon gamma or E gamma) are two independent variables identified to express the energy situations symbolically. Today, the forces of economics rather than those of energy security control alternate sources of energy. It is not an ideal situation. World governments may have to divert their attention from many of their current engagements, fancy predictions and inflated ambitions of supremacy in order to identify new energy sources.

ENERGY AND CIVILISATION

Affluence and modernisation in all ages came from the power of energy that humans acquired. To quote Isaac Asimov (1920–1992), the science fiction author, “indeed, the ability to control energy, whether it be making wood fires or building power plants, is a prerequisite for civilisation.”³ If this hypothesis is positive and acceptable, then the future is predictable. Humankind should slide back to primitive life, down a very sharp gradient, when energy sources are shut. “Climb up from one side and climb down the other”, is what many scholars envisage. This scenario is not tested. It is based on generalisation of a linear hypothesis and as far as humans can visualise within limitations. There are many theories on energy and civilisation. Richard C. Duncan’s Olduvai Theory⁴ stops short of a Stone Age awaiting humans in the distant future. In 1989, based on an inductive theory, he predicted that life expectancy of the current civilisation was very short. It was named the “transient-pulse theory of industrial civilisation.” He sketched the theory at its pinnacle in 1990 and then sliding down. He believed the ratio of world annual energy consumption to world population gave a robust, testable profile of industrial civilisation. He named it the “Olduvai theory” which meant the same as “transient-pulse theory,” used in his previous papers. It was a metaphor associated with the Olduvai civilisation in the Olduvai Gorge in Tanzania that has been strongly associated with human origins and the Stone Age way of life. Duncan’s theory based on the Olduvai civilisation divides the world into various time frames of evolution with respect to energy equilibrium that he prefers to call the Olduvai signature.⁵ The quest came from the innermost feeling of what happens to the world next when the energy resources are exhausted. Duncan feels that the decline and fall of the current (industrial) civilisation will be different from the past. It will be exponential. He found that the industrial civilisation was not leading to sustainability. If that is so, the question is, “how long will it last?” The estimated life expectancies of the current civilisation, according to various forecasts are:⁶

- 39 million years (Haldane, 1927)
- One million years (Drake, 1969)

- Potentially millions of years (Watson, 1969)
- About 200 years (Arrester, 1971)
- 100–200 years (Meadows, et al., 1972)
- About 100 years (Leakey, 1977)
- Short to 10,000 years or more (Crick, 1981)
- Extremely short to very long (Laszlo, 1987)

The entire range of predictions wobbles on unseen and uncertain parameters. Deviations range from 100 years to millions of years. But all are equivocal about the end. Duncan (1989)⁷ divides human history under the energy phases as:

- *The pre-industrial phase:* A very long period of equilibrium when economic growth was limited by simple tools and weak machines
- *The industrial phase:* A very short period of non-equilibrium that ignited with explosive force of energy when powerful new machines temporarily lifted all limits to growth
- *The de-industrial phase:* Expected soon when the industrial economies will slip into a new period of equilibrium, limited by the exhaustion of non-renewable resources and continuing deterioration of the natural environment

According to Duncan, the current civilisation peaked in 1990. He concluded that the current (industrial) civilisation was a single pulse waveform of duration X, as measured by average energy use per person per year, and the life expectancy of the civilisation was less than 100 years with a steep rise and fall between 1930 and 2025. Duncan researched further with more data on both energy and population. This resulted in the Olduvai signature. The theory propounded that the world against energy utilisation goes through a cycle that covers a pre-industrial, industrial and post-industrial periods, in which the industrial period, a period of affluence and happenings was very short; so short that it was almost negligible in human existence. The world, a millennium later may not even know that once upon a time, one of their ancestors had landed on the moon (Well, there are many in the world who do not know about it even today!). According to Duncan's graph, the pre-industrial phase is from three million BC to 1765 AD; a very long time indeed. This period covers the tool-making period (three million BC), use of fire (one million BC), Neolithic agricultural development (8000 BC) and invention of the steam engine by James Watt (1765). The steam engine development phase (1765–1930) was not counted in the actual phase of the industrial period since it was a case of growth and not sudden upshot. The upshot started in 1930 when per capita energy use peaked at 37 per cent. The energy use increased further and reached the maximum in 1978 from where the decline started. The industrial period will last till the per capita energy use returns to 37 per cent according to the theory and spreads out to the post-industrial phase thereafter. The end is predicted at 2025. By then, industrial civilisation is expected to disintegrate into farming villages,

kinship tribes and rogue bands. The surviving population would have “achieved” permanent sustainability—at the subsistence level. The world will retreat to the final phase of the post-industrial period similar to the Stone Age in many respects around 3000 AD. Whew, what a way to go!

The idea is linear, but allowances need to be made for lateral framework in logical thinking and element of chance variables in any calculation. Perhaps this is the first time a human had landed on the moon. Or was there another occasion that the generations of the ongoing civilisation were not aware of in the Olduvai imbroglio? Nobody knows. Were the last Stone Age humans the final descendents of a highly civilised life form? No, it cannot be. That is by logical reasoning intermixed with available evidence. The fact remains that a resource when seriously depended upon can haunt one's life after it is exhausted for some good time. That is a problem. But human life defies linearity and refuses to decline. Weren't there empires and emperors who built mega structures and lived in high spirits throughout the night engaged in food and lascivious orgies in a world without electricity? But, “*what if*” could still be the question in the mind of the ever-anxious human. If the Olduvai theory is the lineament of times to come, then the world has to think seriously. Or it may not happen at all in a world adamant to decline and determined to progress. But human behaviour in a biomodel related to energy decline will show absolute panic within, as well as acceptance and retirement to reality like a primate. The behaviour will go through all the five stages⁸ of human reactions in a non-acceptable situation before end acceptance—the period and intensity may vary from situation to situation and people to people. Pause to think and look at the way people's behaviour changes, ending in acceptance in an energy impasse:

- World Trade Centre, New York, under terrorist attack on 11 September 2001
- Power failure in a crowded and steamy city with no signs of return
- Crowded lift (elevator) in a skyscraper stopped in a total power breakdown
- Hijacked aeroplane in a remote airport
- Cancellation of flights in a busy airport
- Choking of water supply in a metro
- Cyclone hit in New Orleans

If this is not sufficient, imagine a nuclear accident or dirty bomb explosion in the neighbourhood and how people in far distant places scramble for cover like worms slipped on a road. It will be worse than the Olduvai leisure. It is predicted that terrorists may succeed in full scale nuclear and bio-terror attacks and wipe out cities by 2020, which may lead to the accelerated collapse of energy supply. Afghanistan almost plunged into the Stone Age during the Taliban regime (an Olduvai biomodel?). Plunging into such a primitive regime was never under a linear, arithmetic, geometric or even a powerful exponential progression. It was acute randomness that hits at the dawn of a selective moment. That could happen

any day in the life of a human without warning. Deep-rooted primitive instincts surface in humans under certain conditions. While it has been considered as a carry forward behaviour or the leftover of ancestral life, it could also be an absolute necessity for adaptation to the real life environment sans energy boost in future. That confirms vaguely the journey of humans from primitiveness to intelligent primitiveness when the mummies of Olduvai resurrects. In the Hollywood movie *Day after Tomorrow*,⁹ people of the powerful United States are shown taking refuge in the lowly Mexico when their arteries of energy and resources burst. Such perceptions can throw light into the cascading effects of abrupt changes in life. The consequences of the Olduvai theory can be seen within the context of the two sum “yes-no” situation as follows.

1. If *correct* (yes), the humans are heading for a leisurely life in and out of their poorly decorated caverns. If acceptable, the choice is to re-load and sharpen the primitive instincts and get on. If not, reduce the span of energy slip.
2. If *wrong* (no), humans are moving ahead in life ready to colonise worlds beyond their planet. New energy sources, probably renewable bio-energy may replace the current sources.

By using a method termed as ecological footprinting, scientists calculated the area of land needed to maintain the current level of consumption. It included the equivalent area, which would be needed to produce energy—now coming from coal and oil—on a lasting basis. It showed that the “ecological footprint” worldwide was already 20 per cent larger than the area of land available. Therefore, if there are no non-renewable fossil fuels, the current level of consumption cannot be maintained. Each inhabitant needs a particular land area to cover individual consumption that depends upon population strength. The world average in 2004 is two hectares per inhabitant.¹⁰ Availability is less than that. It will further shorten with population increase. If that is so, the current pace for alternate energy research needs to be accelerated the world over. Probability of success will be proportionate to the pace, since energy is required for energy research. Energy manifests in different forms and is measured in different units. Primarily energy is identified as renewable and non-renewable. Renewable energy resources are those that are bounteous and likely to continue, replenishing the energy bank for a very long time. Large-scale exploitation of renewable energy resources is yet to be effective for technological reasons and the inertia caused by the perceived abundance of non-renewable energy resources.

RENEWABLE ENERGY

Solar Energy

Solar energy, if tapped economically, will far exceed demand for thousands of years.

Wind

Windmills and wind-driven irrigation systems are not new to the world. Wind turbines are producing electricity. Designers are looking for more efficient methods that can convert a higher percentage of wind energy into mechanical or electrical energy.

Water

Moving water is a powerful energy source. The world energy potential from dams is equivalent to 5.5 billion tonnes of coal energy per year (2004).¹¹ There is also opposition from environmental activists based on demographic issues and disaster situations to the construction of dams. Mini hydel projects in closed or open loop systems are becoming important worldwide because of their affordability and ease of construction and maintenance. They are also eco-compatible.

Biomass

Biomass, including the gas generated by it, is basically a biological fuel. Biomass is actually the fuel of the past that is still incarcerated. It can be made into practical fuel commodities for limited use in the form of briquettes, cakes and nuggets.

Geothermal

Geothermal energy is associated with certain geographical areas that are identified with sources of heat, aquifers, hot bedrocks, sources of geysers and steam generators under the rocks. They are conventionally called hot water systems, hot rock systems and, wet and dry steam systems. The heat at the core of the earth is around 60,000 degrees centigrade. That is energy compacted enough to heat up water in certain areas that will make the earth whistle like a kettle. The result is geysers and hot springs. There are areas where steam is trapped and could be drilled for use like a boiler, without damage to the environment.

Ocean

The ocean is a perennial energy bottle. The wind, tide, waves, biomass, thermal differences, etc., are all packed with energy besides non-renewable energy under the seabed. However, there are technology limitations for their economic exploitation.

Hydrogen

Hydrogen, as energy fuel, is a serious contender for the future of energy. In all probability, hydrogen as a fuel may first appear commercially on the highways of the world with the automobile industry opting for hydrogen fuel cells. It will be absolutely non-polluting. It has the potential to eliminate carbon dioxide and other greenhouse gas emissions. It can be used in the combustion process in addition to

fuel cells, and thereby in a broad range of energy services—lighting, transportation, heating, cooling and cooking.

Nuclear Energy

Issues related to nuclear energy in a world that is ever suspicious are well documented and argued. But nuclear energy is the most dependable energy companion that humans could ever have. There are possibilities of nuclear energy becoming the most sought after power source in the world. About 16 per cent of global electricity (2004)¹² is by nuclear power.

NON-RENEWABLE ENERGY

Coal

The largest proportion of available fuel reserves is in the form of coal. An interesting study is that coal alone will be able to sustain world energy needs for another 200 years assuming the demand will be about 10 billion tons per year.¹³ (What then Olduvai?) Compared to coal, oil reserves show a lowered period of sustenance. The estimate according to some is 60 years for oil and 10 years for natural gas.¹⁴

Oil

By 1968, the world had produced the first 200 billion barrels of oil since production began 109 years ago (in 1859).¹⁵ That is how the energy growth shaped the world.

TABLE 13.1 World Distribution of Oil in Billion Barrels¹⁶

<i>Region</i>	<i>Total Oil Distribution</i>
North America	429
South America	211
Western Europe	70
Eastern Europe	281
Central Asia	79
Middle East	982
Africa	167
Oceania and Asia	171
Total world	2,390

A broad estimate of world distribution of oil is given in Table 13.1. The total oil distribution includes production, reserves and undiscovered sources. The figures can vary with new discoveries and changing patterns of worldwide consumption. The table gives total world distribution from the estimation that about 77 per cent

of oil has already been discovered and 30 per cent consumed. Under this estimate, there is oil till the middle of the 21st century. Thereafter, production as per calculations, should decline. The Middle East has the largest estimate: about 41 per cent. North America is a distant second, but has already produced almost half of its total oil. Eastern Europe, because of the large deposits in Russia, has substantial stock. Most of the oil of Western Europe is under the North Sea. Others have relatively moderate amounts of oil. Large undiscovered oil resources are believed to exist in North America. Finding of large oil deposits in other parts of the world in the future cannot be discounted. According to Encyclopaedia Britannica (2004), 18 countries produce substantial amounts of oil in the world (Table 13.2).¹⁷

TABLE 13.2 Leading Oil Countries (In billion barrels)

<i>Country</i>	<i>Cumulative Production</i>	<i>Reserves</i>	<i>Undiscovered Resources</i>	<i>Total</i>
Saudi Arabia	71.5	261.2	41.0	373.7
United States	165.8	50.7	49.0	265.5
Russia	92.6	100.0	68.0	260.6
Iraq	22.8	100.0	45.0	167.8
Iran	42.9	93.0	22.0	157.9
Venezuela	47.3	83.3	17.0	147.6
Kuwait	27.6	97.5	3.0	128.1
United Arab Emirates	15.1	98.2	7.0	120.3
Mexico	20.5	50.4	37.0	107.9
China	18.8	24.0	48.0	90.8
Canada	16.1	5.1	33.0	54.2
Libya	19.0	22.8	8.0	49.8
Kazakhstan	3.2	17.3	26.0	46.5
Nigeria	15.5	17.9	9.0	42.4
Indonesia	15.2	5.8	10.0	31.0
Norway	6.3	11.3	13.0	30.6
United Kingdom	12.3	4.6	11.0	27.9
Algeria	9.1	9.2	2.0	20.3
Total	621.6	1,052.3	449.0	2,122.9

These 18 countries have accounted for 86 per cent of the world's oil production. Together they hold 94 per cent of its reserves. Significantly, they are projected to

have 82 per cent of the world's remaining undiscovered oil resources. But the predictions in the past, especially in the 70s proved wrong.¹⁸ Estimates of reserves can be distorted, production may fluctuate, consumption may vary, and the ability to explore will be restricted by the oil available, among other factors—it is said that technologically, production fails when half the crude is gone. The world oil production peak will be a deciding factor in energy conservation with respect to oil. However, it is not easy to interpret it since production peaks are also in a different way, the technological capabilities for economic exploration and production. The demand for oil will continuously increase. Technology will be a determining factor for production. Technology innovation also consumes energy. It is a vicious circle. Models are required for forecasting world oil production and predicting the peak years for every oil-producing nation in order to understand the slide thereafter.

Natural Gas

Natural gas is competitive and about 50 per cent cheaper than liquid fuels like naphtha.¹⁹ It needs lesser power (personnel and mechanical) for handling. Gas is flexible and can be made to run on alternate liquid fuels without major technical modifications. The gestation period of a gas based plant is significantly shorter than that of a coal based or hydrogen based plant. Gas is clean and less polluting than oil, coal and other liquid fuels. It has the capability to replace oil in the future and many nations have good reserves of gas hydrates in onshore and offshore gas beds.

EXPRESSING ENERGY CONSUMPTION

The energy value of fuel is given in joules (joule standard unit), British thermal unit (BTU), calories, electron volt, watt, kilowatt/hour, etc. In terms of calorific value of energy content expressed in mega joules per kg, methane is the highest (56 mj/kg) with lignite and cellulose at the lowest (14 mj/kg). Close to methane are the petroleum products with petrol (56 mj/kg) on the top. Global energy consumption is also expressed in quad equivalent to a quadrillion (10^{15}) BTU. Energy equations for oil are:

- (a) One barrel of oil = 35 British (Imperial) gallons
159.11 litres (one British gallon = 4.546 litres)
42 US gallons (one US gallon = 3.788 litres)
- (b) One tonne of oil = 1,000 litres (about 6.29 barrels).
- (c) One ton of oil = 7.3 barrels

Energy is consumed primarily in five sectors: industry, transport, research and development, households and general segments including agriculture; strategic energy use and reserves are not included. Firewood, coal, oil, natural gas and nuclear energy contributed to world demand of energy in the last half of the 20th century. Forecasting energy requirement and options for the 21st century is a major

task. There are too many variable parameters. Extrapolation of historical performance cannot be accurate. There is a move away from environmentally dirty fuels to clean fuels.

ENERGY—STATUS AND TRENDS

Oil is the vital energy resource on which the market and economy currently stabilise. The process of globalisation limits the powers of government in indulging freely in oil politics. The increase in the number of countries exporting oil has eroded the power of the Organisation of Petroleum Exporting Countries (OPEC).²⁰ But there are also complaints against oil producing countries for speculation driven pricing that exploits consumer countries.²¹ It is clear that market forces rather than command economies will drive oil production decisions in some parts of the globe. In other parts, the regulatory procedures will be loosened. Some may demand an oil price band within which market forces operate so that speculation is curbed. Amidst demand upheavals, governments struggle to keep the price in place that sometimes may outgrow and result in inflation not welcomed normally in political situations. Crude oil prices fell in late 1997 and stabilised in early 1998. The lower prices of oil were attributed to lower production costs.²² The cost includes that of finding oil and gas reserves, exploration, production and transportation. Technological upgradation of oil exploration made many unattractive oil wells favourable. The world energy reports indicate gradual increase in the total output of oil.

As the world energy demand increases, attention is drawn towards natural gas. Consumption rose from 17.5 per cent in 1970 to 21.4 per cent in 1995. It is projected to be 27.2 per cent in 2020.²³ According to a study, the producing countries themselves consume eighty per cent.²⁴ The trend may change if gas transportation is made more economical. The world energy consumption status²⁵ in 1995 is given in Table 13.3.

TABLE 13.3 World Energy Consumption (1995)

<i>Energy Resource</i>	<i>Percentage</i>
Oil	39
Coal	25
Gas	21.4
Others—nuclear, hydel, renewable, etc.	14.6

It is estimated that the consumption of oil will drop and that of gas will increase in the future. The United States is the world's largest consumer of energy and the demand is rising. At the same time, the US share of world energy is declining. Energy consumption is growing rapidly in developing countries as an indicator of

growth. According to studies, most of Asia's demand for energy comes from China and India.²⁶ The trend in energy consumption is to consume less for more value output with technological advancement that allows greater energy efficiency. The historic trend is less energy per unit of output in economy. This is also due to the shift towards less energy consumption industries such as information technology, for economic output. The trend in new energy resource finding is of mixed interest. Unless dependency of the world on oil is reduced, the momentum in developing new sources of energy will be slowed down. Among the new resources, fuel cells have the potential to replace most of the energy sources. Though it functions like a battery, a fuel cell uses its reactants externally. Today, there are fuel cells for vehicles, and industrial and home applications. It may soon enter the marine world too. That will be a major saving in oil consumption. Fuel cells will be active as long as they are supplied with the reactants—oxygen and hydrogen.²⁷ These forecasts in energy demand are subject to uncertain variables—especially those related to economic growth rates, trends in energy intensity of output, energy and otherwise: wars, social and economic upheavals, etc. The countries that will control major supplies of oil in future are expected to be Saudi Arabia and those in the former Soviet Union. The trend however shows unfettered oil production for several years more, though there are views that it will peak by 2010. New, enhanced finding of oil may keep the all-time peak delayed up to 2040. Even if the answer is that the delay in oil-peak may be probable, the fact remains that it will end one day. The delay hopefully, should give time to identify alternate energy resources and get used to them. Internal situations in many oil-producing countries are conflict ridden. The problems are socio-econo-political that may affect the world oil and gas markets.

MANAGING ENERGY SECURITY

Managing energy security will be a serious challenge. Mostly the decision-making has to be under uncertain variables and conflict scenario. There are various conditional situations:

- (a) The demand for energy and choice for a particular resource
- (b) Cost of research, funding, exploration, production and transportation
- (c) Change over to alternate source of energy
- (d) Availability of energy alternatives and choice of suitable economic output matching the resource
- (e) Achieving energy efficiency to manage energy intensity
- (f) Market force determination of energy availability
- (g) Political factors controlling energy availability
- (h) Upheavals in international and global security
- (i) Upheavals in national security
- (j) Physical security of energy resource locations and transportation lines
- (k) Decision on hedging against energy shocks—strategic energy reserves

The matrix is complex. Under such conditions, capability in decision-making under uncertainty will be very much in demand. The best prospect for market stability of an identified resource will depend upon all these conditions. Price fluctuations can widen the uncertainty of supply markets. The games played by nations to throttle each other will be counter-productive in the face of energy security. It is to be understood that the current feeling is that worldwide energy supplies will continue to be ample, though at a higher price in tandem with inflation, as long as price wars and market forces do not fluctuate seriously. Even then, security matters may cause alarm and unprecedented actions by overly worried nations who have the capability (the one who has the gun may be tempted to shoot). The scenario may range from absolute optimism to perverse pessimism. The situation in that case should be the median line. That simply means trend will be as it is today. The argument that economic prosperity beckons the rate at which energy is produced, is valid in the first place. But a serious study will reveal that energy consumption is a linear variable, and so is economic prosperity. Ideally, higher consumption means increased prosperity in a linear model. It may sound fine, but the fact remains that energy is a limited resource and can decline suddenly, especially when a nation does not have absolute control over it. It is like driving a car long distance without refilling. It may stop at any time in the process. The problems faced by the people in the car will depend entirely on the point at which it stops. It will be more serious if the car stops in the wilderness and much less if it stops at a place from where another mode of transport can be obtained to travel further. Fortunately in a car, it is possible to predict when the fuel will get over, and plan accordingly. In human life, controlled by energy, it is not that easy. Besides, life's destination is eternity, not a fixed distance; one cannot predict where the nation or world humanity will be when the fuel runs out. There will not be absolute control even if fuel is available. In the energy metaphor, there is no end destination. In any case, a nation should have the capability to get the energy required in an economical manner. Sometimes import may be more cost-effective. There is, therefore, no steadfast rule in energy usage and management. It has to be circumstantial and based on demand and political compulsions. In such cases, certain countries depend on indigenous production whereas others may like to preserve their resources and buy from outside. The centre of gravity of energy management with respect to energy security under such situations—import vs. preservation—will lie at the critical points of change over. Such situations may exist more than once. That is not all; the choice for nations may be many. In a typical example applicable to oil security, the choices available could be:

- (a) Import all requirements
- (b) Import nil; exploit indigenous stock
- (c) Import partially; exploit indigenous stock for balance requirement
- (d) Import, exploit and export indigenous resource stock
- (e) Import nil; exploit indigenous stock and export

Under such maxim, the energy security matrix will be:

- (a) Import all, no indigenous stock
- (b) Import all, reserve indigenous stock
- (c) Import, and exploit reserve
- (d) No import; use only indigenous stock
- (e) Import, exploit and export
- (f) Import, reserve or refine and export (no exploitation locally)

The critical quota or quantum in all situations has to be identified. There are no shortcuts in energy management. It is an issue that is strictly global and not country specific. The world cannot be divided into extreme civilisations—Olduvai on one side and Manhattan on the other—without serious mix-ups. In the case of oil, the primary fuel of the world today, there are arguments on long-range oil policies. But such policies may not be feasible since fluctuations in oil parameters are far too frequent. Therefore, one needs interrupted long-range policies where, at the intermediary stages, one stops and looks around before proceeding further. The question before a nation with large resources of untapped oil and gas is whether to produce or import. Many prefer to import but import keeps them technologically at bay; and the policy of exploitation of ones own resources only when every other well in the world goes dry, may invite unforeseen consequences.

China surpassed Japan as the world's largest oil importer in 2004.²⁸ Its consumption is expected to rise about 400 million tons, whereas domestic production will be about 190 million tons.²⁹ Energy security for any nation is very closely related to military security. The nation that imports has to have absolute control of the line of transportation of oil. That means the seaways and the pipelines. China may exploit every choice route at its disposal—Bangladesh, Pakistan, Myanmar or Thailand. Japan's choice is limited to sea. China can lay a pipeline from Myanmar's Bay of Bengal port to Kunming, the capital of Yunnan province considering the favourable relations both the countries have.³⁰ Geostrategically, China shares varied interests with all these countries. While every nation that needs energy (that means every nation in the world) formulates its own policies to maximise energy security as considered effective by the government, the common aspects of energy security may underlie in definite activities such as:

- High calibre and expeditious research in developing alternate and renewable energy resources in general, and particularly in bio-energy and hydrogen fuel
- Policy based encouragement in the use of renewable and alternate energy resources at national level
- Legal and fiscal measures to support energy production
- Improved energy infrastructure
- Energy diplomacy especially in the field of oil
- Geostrategic management of energy

Strategic partnership on common ground even with adversaries on a win-win or win-hold-win approach will resolve most of the short-term issues. Auditing energy for all activities is vital for conservation. Energy efficient equipment and policies are matters that shall go along with energy audit. Notwithstanding exploration and production problems, there are threats to oil facilities especially from terrorists and insurgents. All these and rise in oil prices can cause a heavy burden on energy security. The price could very well cross US\$100 per barrel one day. That will be violently sadistic. Strategic reserves are required to tide over problems of localised energy deficit. Calculation of an economically optimum strategic reserve for a nation is a complex process. One way to tame the rising oil prices is the quota system for crude oil. Another problem in the supply chain is the capacity and security of oil tankers. There is a mismatch in this chain as there are not enough tankers because the production is under. If the transportation capacity is less, then storage capacity should increase. That again is a matter of economics and security. Charter rates can become unstable causing further problems and price variations. Security of tankers and tanker facilities is another concern. Terrorist or piratical attacks on tankers will increase prices further, for crude and for transportation besides panic insurance. The question for nations will be whether and, if so, how to opt for energy independence. If not, reliance on foreign sources will increase. And in today's world, no country can march in an army without a serious excuse to go and get it. Besides, everyone does not have that kind of an army. A balanced strategy in managing energy security comprises many aspects other than using the military to get foreign resource reliance. Conservation of energy is one of them. This calls for efficient energy audits and energy savers incorporated within the consumption pattern. Modernising the energy delivery system to prevent loss of energy is another method. The loss is very high in most of the electric supply and distribution systems in the world. Electrical energy is a secondary form of energy with another energy resource acting as its prime mover. Loss in electrical energy induces multi-energy cost since it is secondary energy—energy derived from a primary energy source. It is critical when energy balance is weighing against time. While conserving energy is optimising energy, loss prevention is waste control. Technology is the key.

CONCLUSION

Secure, stable, economic and sustainable energy supply on demand is the objective of energy security maximisation. But in energy security, the concern is more on retaining it to meet the demand economically. Olduvai may not happen; it will remain a distant dream for all those who want to get back to a lonely cave in the wilderness. It will be fun to fight wars with swords and catapults of all sizes once again. But (unfortunately for the leisure addicts), the world is going to be a better place to live in.

Notes

¹ Richard C. Duncan, *The Olduvai Theory: Sliding towards a Post Industrial Stone Age*, 27 June 1996, www.dieoff.org, March 2003.

² David Perlman, "Fossils from Ethiopia may be the Earliest Human Ancestor," *San Francisco Chronicle*, 12 July 2001, www.news.nationalgeographic.com. In a finding on fossils from Ethiopia, the earliest of the human ancestor was identified to have been alive 6,000,000 years ago in the wooded highlands of East Africa. The find was made by a team of scientists in the Middle Awash River Valley of Ethiopia and was named *Ardipithecus ramidus kadabba*, a subspecies of *A. ramidus*. What is important here is that based on this find of human origin, it took nearly five million years for the primitive humans to gain control over a non-physical (bodily) energy source (fire in this case) for the first time.

³ Quoted by Duncan in his paper (n. 1) as stated by Asimov in his book, I. Asimov, & I. White, *The March of The Millennia: A Key Look at History*, Franklin, New York, 1991, www.dieoff.org/page 125, March 2003.

⁴ "Olduvai Gorge," Britannica Online, www.eb.com, 3 November 1998.

⁵ www.dieoff.org, March 2003.

⁶ Duncan, n. 1.

⁷ Ibid.

⁸ The five stages are denial, anger, bargain, depression and acceptance.

⁹ The movie (2004) directed by Roland Emmerich narrates the plot in which a climatologist tries to figure out a way to save the world from abrupt global warming and subsequent new Ice Age.

¹⁰ "Humanity Living Beyond Its Means: Scientists," *The New Indian Express*, Hyderabad, 26 August 2004, p. 14.

¹¹ Y. Anjaneyulu, *Introduction to Environmental Science*, BS Publications, Hyderabad, 2004, p. 179.

¹² Ibid. p. 201.

¹³ Ibid. p. 144.

¹⁴ Ibid. p. 146.

¹⁵ *Encyclopaedia Britannica, Ultimate Reference Suite*, CD-ROM, 2004.

¹⁶ Figures compiled from *Encyclopaedia Britannica*, n. 15, and Hans Binnendijk and others (eds), *Strategic Assessment 1999*, Washington DC: Institute for National Strategic Studies, National Defense University, Washington DC, 1999 and Indian Coast Guard sources (Unclassified), etc.

¹⁷ *Encyclopaedia Britannica*, n. 15. Figures from *Oil & Gas Journal* and US Geological Survey.

¹⁸ Colin J. Campbell and Jean H. Laherrere, *Scientific American*, www.dieoff.com, March 1988. Prices of oil nearly tripled with the Arab embargo in 1973 and then again in 1979 when the Shah of Iran was dethroned. According to certain studies, by 1973 the world had consumed only about one eighth of the total endowment of readily accessible crude oil.

¹⁹ Ashish Gupta, "The Dash for Gas," *Business Today*, 11 October 2004, p. 130.

²⁰ Hans Binnendijk and others (eds), *Strategic Assessment, 1999-Priorities for A Turbulent World*, Institute for National Strategic Studies, National Defence University, Washington DC, 1999, p. 40.

²¹ Sushma Ramachandran, "Huge Oil Process Erodes Growth," *The Hindu*, Coimbatore, 27 November 2006, p. 1.

²² Binnendijk, n. 20, p. 42.

²³ Ibid. p. 43.

²⁴ Ibid.

²⁵ Ibid. p. 44.

²⁶ Ibid.

²⁷ Lloyd's Register, "Getting Fuel Cells Afloat," *Horizon*, September 2004, p. 15.

²⁸ K.P. Prabhakaran Nair, "China Oils its Way," *The Indian Express*, New Delhi, 28 September 2004, p. 8.

²⁹ Ibid.

³⁰ Ibid.

14

Geostrategic Security

*Geostrategy is not diplomacy,
but without diplomacy geostrategy cannot be formulated.*

When a country is abhorrently disliked or sarcastically castigated by the citizens of other countries, it is said to be schizoid with a deficit in geostrategic security. Power does not directly contribute to geostrategic security. The Soviet Union was an example. When a nation falls, it is under its own weight accumulated by geostrategic deficit. Power games and associated behaviours are common to primates. But in the game plans of human species, abhorrence comes calling when a nation muscles its way through international aggrandisement to retain its position of power or obtain it by whatever means. Nations that felt insecure invaded others or established colonialism for exploitation. Their empires collapsed subsequently under abhorrence and induced responses. The scenario is applicable to the positions of many nations today and can be examined as case studies.

GEOSTRATEGIC SECURITY: THE EIGHTH ELEMENT

The world was never insular. People were always reaching out. It is from this principle and many other historic bio-models that the conclusion arises that the world will always remain global and not insular. A nation achieves comfort and permanence in its existence in the world of nations through geostrategy. It also provides bargaining power and the requisite clout within them without being despised. Power can come even otherwise but it need not provide comfort to the citizens unless it is acquired by positive and proactive geostrategy. Against this background, geostrategic security as an element of national security has to be perceived as a nation's capability to remain healthy among others, in a world full of nations in such a way that its values and citizens are acceptable to others along with its existence.

GEOSTRATEGIC ATTEMPTS—STUDIES BY EXAMPLES

Geostrategic attempts include formation of a union of nations, collaborations, movements, treaty organisations, etc. There are also unity slogans. Some of them may attain diverse perceptions—like the most often quoted *Panchsheel*

in Sino-India relations. Most Indians fancy *Panchsheel* as a Sanskrit word coined by Jawaharlal Nehru, the first prime minister. In reality, it is an Indonesian usage formulated by Nehru's Chinese compatriot Zhou Enlai (1898–1976). According to reports, Nehru was responsible for propagating its principles in an exemplary manner.¹ Nehru and Zhou Enlai issued a joint statement in New Delhi on 18 June 1954. While receiving the Indian delegation to the Tibetan trade talks on 31 December 1953, Zhou enunciated the five principles governing China's relations with foreign countries. Later, this was to become the famous *Panchsheel* when Nehru appreciated the principles.² But there was resistance from China against including it in the text of the India–China joint statement. With various compromise solutions, it appeared in the preamble and not in the main text. These incidents may show an interesting facet of geostrategic principles—historic agreements can be distorted; the real power may rest with someone else, not the one that projects power outside. While Zhou Enlai was the head of government and an efficient and effable face of China to the outside world, the real power was with Mao Zedong.³ Behaviours of world leaders and power centres can take the behaviour of a street dweller and remain vindictive but dormant, for years to come in the politics of human governance. There are leaders who believe that there is little room for peaceful coexistence, equality or common good and primacy of law; all within the system that calls for it. Mao clipped the wings of *Panchsheel*, little known to Nehru. The deceptive Chinese attack on India in 1962 was not the doing of Zhou, but of Mao as some analysts state.⁴ In history, people can get tainted or become heroes without reason. History may warp reality as has been said before.

Deception is habitually practiced and widely advocated not only in war, but also in geostrategy. It is an inborn existentialistic behaviour practised by all life forms.⁵ But do the modern humans need to practice deception when they have the choice of advanced means of life governed by intellect? It is a big question. Deception is everywhere—from humanitarian assistance to extreme covert actions. Aid and support for disaster victims may involve deceptive opportunities that the good humanitarian donor may put to advantage. Praise is the first stage in geostrategic deception. Be wary of the nation that showers praises. Geostrategic symbols of strength are awe, not admiration; respect that may be hidden in comments; power that attracts, not coerces; praise that may come from citizens, not governments or intelligence agencies. There are many such projections. The importance of deception in geostrategy is highly debatable. Chinese strategists believed in it. Sun Tzu advocated deception in war. The Japanese engaged the US in peaceful negotiations at Tokyo while preparing the attack on the US naval fleet at Pearl Harbour.⁶ There are many such similarities where, between peace talks, one party was preparing to attack the other or trying to reorganise its position in a conflict. The induced deception in peace talks has caused many such talks to be viewed suspiciously. Often such an interlude provides a cover for covert hostile planning. In international relations, deception stems from an inherent lack of faith in each other. It is necessitated by the “win at any cost” strategy—the argument

that the end justifies means argument—which most nations adopt under such circumstances. Lack of faith in each other is integral to the geostrategic dimension and is the most intricate impediment in the mutually supportive co-existence of nations. Deception ingrains lack of confidence and nullifies confidence building measures (CBM). Deception cannot be accepted as a normal geostrategic tool. Deception was behind the famous visit of Henry Kissinger to Pakistan through India to establish relations with China in July 1971.⁷ India was not aware of Kissinger's real mission—to slip away into China through Pakistan for talks. India misunderstood the fact that Kissinger would resolve India's issues with Pakistan regarding the turmoil in East Pakistan⁸ and subsequent refugee problems. The plan was known to only a few, including the Pakistani leadership. It caused much heartburn to India and serious flaws in Indo-US relations thereafter.⁹ Kissinger by his deceptive diplomacy caused serious damage to India-US relations that still linger on as a hangover. There are reports that Kissinger and Nixon had virtually abandoned their gentlemen status, that too of a superpower country, while expressing their feelings about India and its then prime minister, Indira Gandhi. Even the chiefs of the worst cartels of the underworld in the US may have been many shades better than these two power brokers of the period. It is also amazing that Kissinger with such deprived wisdom had the audacity to write about diplomacy. That is another reason for arguing that diplomacy need not be mistaken for geostrategy. It is a tool. Theoretically, under normal circumstances, when deception is accepted as a tactical ploy, a war is won even if battles are lost. An example is the epic Trojan War. But, if ruled out as a mythological farce, there are no strong examples of the deceiver winning at the ultimate end. It can be seen in the Pearl Harbour attack or in the Yom Kippur War and is more obvious in acts of terror. Terrorists never win, because they fight under deception. They do not know it. Deception does not succeed beyond a momentary replenishment of hope to the deceiver. Hence, geostrategy without deception is strictly the best method that can be adopted in the long run under the evolving times of heightened global awareness. Confidence measures and enlightened "out of the text book" diplomacy are part of this strategy. Unless deception in all its various forms is removed, the long-term geostrategic policies will not find ground especially in a world fast moving towards a nuclear brink effectively ploughed by determined militant activism. The geostrategic game plan is to create win-win situations, because that alone will maximise geostrategic security. Geostrategy with an intention to subvert or suppress was old-fashioned. It has not registered much success in historic bio-models. Ultimately, deception gets deceived. Geostrategy is group survival. A large number of nations have lost out on it. In the case of the superpower, geostrategic isolation is a price to pay for existence. It is its position at the top and the need to hold on to it that guides its geostrategic decisions. Geostrategic isolation is different from geographical or geopolitical isolation. Such isolationism gets diluted when the world advances. It is always lonely at the top, but everybody wants to be there. The geostrategic policies of a country will depend upon its position in the hierarchy of

nations. Even here, the superpower may have a stand-alone policy with respect to others in the world.

DIPLOMACY

A lot is spoken and written about diplomacy by experts who have a feel for it, Kissinger included. But in geostrategy, diplomacy is just a tool and a sharp tool it is. Sometimes, diplomacy is also conveniently branded as an instrument of national policy. But in its real sense, it is the package in which national policies are projected to the outside world. Diplomacy is the responsibility of all those who are engaged in projecting national policies across its borders. Diplomacy is the language of geostrategy through which the text is projected. Engaging the people of a nation in the business of geostrategy through information is an activity that relates to diplomacy building and enhancement. To that extent even an unfortunate hostage or a strayed infiltrator will have a message to convey to the world if geostrategy is made interactive with the common person. It will take away the awe and regressed xenophobic attributes from a citizen and create an awareness that will induce geostrategic awakening. Diplomacy is not just the forte of the foreign office. It will be supportive to unleash the power of the travelling and across the border citizens of a country—each one of them a citizen diplomat by situation. Geostrategy lies in the clarion call about the external world to a nation's citizens, which they can use for their country's benefit, from a mutually beneficial point of view, in their interaction with the world outside. Unfortunately, it is a curse the world over that the common person is kept totally away from the nation's geostrategic business. It is a grave mistake. The result is obvious and visible in the retarded growth of the planet human. According to Kautilya, "the welfare of a state depends on an active foreign policy."¹⁰ In this case, the aim of the policy of the aggressive state was to acquire more "territory" by conquest, but preferably by other means. War was the last resort. At the same time, it was necessary to ensure that other states did not expand at one's own expense. Active foreign policy is when the citizens know their roles in maximising the geostrategic security of their nation—diplomacy is the track on which that rides. The tracks are not different for the ordinary citizen or the appointed diplomat. For the uninitiated, the over-ambitious or the wheeler-dealer in geostrategic diplomacy, these pathways are called track one and track two, where the latter is outside the government activities that they expect it to recognise by gathering strength. Unfortunately, both the tracks diverge uncompromisingly. Track two is a costly waste in geostrategy, though for the parties involved, such efforts bring fringe benefits. It is also a sign that there are flaws in official diplomacy. Both ways geostrategic security is the loser. At the same time, responsible citizens of a country (which everyone is expected to be) are not expected to neglect their part in diplomacy in the modern world. Therefore, in an ideal situation, both the tracks shall converge and assimilate into each other. This will bring single-track diplomacy (which may have different choices) that is ideal for

geostrategic security maximisation. Introducing cyber diplomacy through “cyber embassies” will provide the necessary boost by participation in diplomacy in today’s cyber world by converging both the tracks. The power of the common person can be seen in the “diplomatic” engagement by the insurgents and militants abroad. These groups engage the common person effectively. A major source of income for insurgent groups is the contributions from non-resident citizens. The income besides being huge is assured for the cause. While the method used by such organisations may not be advisable to a government, it could effectively utilise even a casual visitor abroad for maximising geostrategic security. The foreign office should not be acting in isolation. This aspect, diplomacy through citizen diplomats, could yield good dividends.

IS THERE A HIERARCHY OF NATIONS?

The global hierarchy of nations according to the power they can wield in the community of nations is one of perception. In reality, it does not exist in a form that is intentionally legislated or accepted. But in any form of human society, there exists a system by which one is compared to another. The hypothetical hierarchy may not be in the form of a pyramid since the number of countries in various categories may not fit into a geometrically shaped pyramid. Besides, it is based on the power the nation wields in geostrategy. Can there be two nations with equal power in the hierarchy of world systems? Does the power shift with respect to geostrategic situations? These and similar questions may have to be answered before designing the shape of the hierarchy of nations. Power is a variable. Assuming that each nation wields different degrees of power, the shape of the chain of nations of the world in the power hierarchy will be that of a train—with one nation following another in the configuration of railroad coaches. Even that does not suit the expression because in such a chain, a nation will always follow the preceding one, whereas in real mode it may overtake another. The coach of a train does not do that. The shape of the hierarchy could well be that of an ant column on the move with one following another with the freedom to overtake. Or does it look like an overcrowded footpath where everyone is on the move in a busy city? The shape can change with respect to the situation. But it has an apex if the shape is that of a pyramid, or a head at the beginning of the long winding entity, though the system may not be very shapely. At the head of the entity has to be the superpower. There are also earlier studies on this subject. The hypothesis here is slightly different from the studies so far. Most prefer to call the nation on top, the superpower. It is the terminology that has been lavishly used so far in this book too. But a more appropriate term is superstate rather than superpower while discussing the hierarchy of nations, considering that a nation is a political entity and the state within it has the supreme authority over it. In this way the association of the word power, is set aside from the usage point of view of the concept of national security. Besides, a superstate is expected to be a responsible superpower.

In this virtual hierarchy, the top and bottom can be identified and defined positively. While the most powerful country has to remain at the top, it is the least powerful or the most discounted human race in the form of a nation that remains at the bottom. There is a tendency to call them colonial states. There are many questions here. Can there be only one country at the top? Does that mean polycentric world domination is improbable? Will the world always be monocentric when power balances in a hierarchy? If that is so, when did the world become monocentric with one superstate on top with the highest bargaining capability in global matters? Does it mean that the hierarchy of nations has been evolving all these days since the beginning of nation-states? That is, for more than three centuries. Does it mean all that the world had witnessed—the world wars, Cold War, formations of a global commune in the shape of the United Nations, control of nuclear energy, exploration of outer space, etc. were just the process of a world order with a hierarchy of nations to balance the global community with one on top? Will the world hereafter be monocentric or will someone catch up and compete with the one on top leading to another Cold War turning the world bicentric until one loses?

Governance has the power to turn even a failed state to a leading state in the hierarchy. The concept of national security thrives on dynamism and vitality. The opportunities are there for any nation that intends to take the concept seriously. The nation that finally qualified for the title role of the superstate today is comparatively (surprisingly) a very young nation. The United States of America was a new world. Does this mean that a nation that is young has more chances to become a superstate because they are not entangled in the shackles of the distant past? Do history and traditions, however boastful and bragging they may be, block a nation's progress upwards in the virtual hierarchy? Does it mean that the next superstate will be a young country that will be new or an old one that dares to break away from the fetters that bind its feet? It is also important for the superstate to understand the possibility of being toppled over by another on a fine day. Is it possible to locate the next superstate now on the worldscape?

Those at the base of the hierarchy or virtually in the pit are considered to be colonial states in some studies. This can be refuted by various arguments. One, there are no colonial states as per the word, today. Second, if the term colonial state means that the rulers (the government and its officials, including the armed forces) enjoy greater facility than others, then there are plenty of nations where the people have more than double space between them: the ruling class and the others. Such countries still follow colonial principles or the adage that makes them feel better in government than in non-governmental service. It is therefore better, to adjudge the nations as per their wielding power in world affairs according to status. It amounts to a lot, each segregated from another in many different ways. They are the uncared indigenous, cared indigenous, below colonial, colonial, underdeveloped, developing, developed, super developed, and superstate as a thumb rule in a strictly hypothetical manner. The steps on the ladder can be

increased as a friend once critically remarked (1994) that he belonged to the fourth world because his country was worse than the third world. “*Why should one stop at the third world anyway?*” was his argument. This principle, differentiating nations as different worlds, is not followed in the argument here. It is not an acceptable norm in geostrategic security. The hierarchical system deals with the human system within a nation. Nations in the hierarchical system are referred to as states because the state provides identity to people. A step below the states is those human systems where a nation may find a differential in the governing systems. This is especially so with indigenous peoples. In the study of national security, indigenous peoples are important human systems. Many of them are not assimilated strictly within a nation-state. The hierarchy of nations may not be a pyramid but a set of steps as given in Figure 14.1.

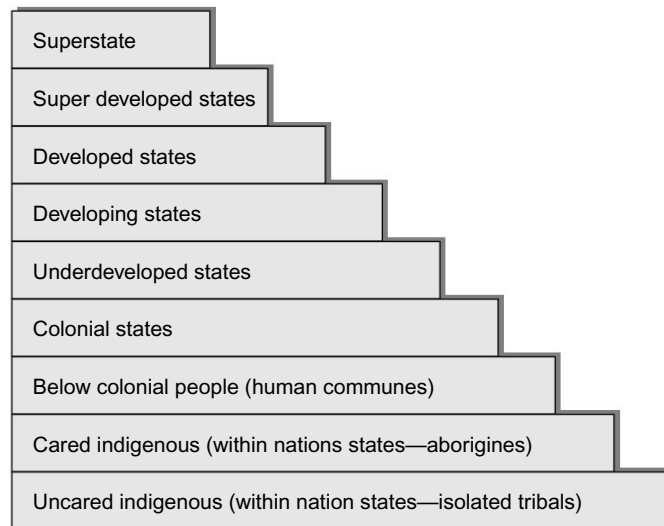


FIGURE 14.1 Hypothetical Hierarchy of Human Systems

In a geostrategic context, failed states and failing states are two, oft-quoted terminologies. Where do such states stand in the hierarchical structure propounded above? A failed state is considered to be the one where there is no effective governance; the state that has no control over itself. The symptoms generally quoted are based on the inabilities of the state—for territorial control, to provide services to the public, to collect taxes, and a host of other things. It means simply that the national security is at rock bottom. The index (NSI) could even be negative. It simply means that the state is not governed properly. Another government could have governed it better. The nation either may disintegrate or turned around. It could therefore very well fit in the hierarchical structure above—especially in the groove of the underdeveloped or below. According to a report, there are 60 failed or failing states in the world as on October 2005.¹¹ It is important to understand

that in a hierarchical system, the citizens of a country do not have to wait for their country to become advanced to enjoy the benefits of a developed country. They could get it just by emigration overnight. The superior country of the informal hierarchy may restrict the laws of migration, but certain parameters by demand will prevent it from doing so. Legal affairs in a superior country and the support it provides to migrant people because of its more civilised or sophisticated governance from the point of view of human rights (that is why it is a developed nation) is a reason. There will also be demand for people for productive work, because of population depletion common to such countries. Whether the shape of the hierarchy of nations is a pyramid or not it is highly circulatory inside, like a termite mound. It is also turbulent like a thundercloud. This hypothetical hierarchy inhibits further hierarchies within it at various levels at regional formations and in the form of various cooperative entities. Human beings shift to developed states or a superstate from underdeveloped or developing states cutting the middle line. Such migrations can ideally dilute the developed state or the superstate to slip below. History has shown that the process of decline of a nation will start many years before its actual collapse. If the decline and fall of the Roman Empire was an ancient treatise on this study,¹² then that of the Soviet Union is comparatively recent. In the case of the latter, it started from the time of the containment theory of George Kennen in 1947. Gorbachev only shook it when it was about to collapse into 15 different nations including Russia. From the ashes of the great, other nations will rise and build their might. The process continues. Today's Russia is just a pale shade of the erstwhile Soviet Union, but is determined to remain in the race. It is a point of debate whether the Soviet Union would have disintegrated if it had insisted on remaining shoulder-to-shoulder with the United States in the race on a win-hold-win path, to edge it out at the end. Ideologies may vary, but geostrategy is beyond differences of any kind. For Russia the potential to catch up is to be made by good governance. It should also know that there are others too in the race with highly intense aspirations. Even though the discussion on the hierarchy of nations is hypothetical, the reality of a monocentric world today and the events that have been, and the existence of miserable human settlements in the pit of the civilised world are unquestionable realities. The knowledge in this argument is not just *a priori*, but also heuristic merged in observable realities. A superstate is a reality and so is the monocentric world. It has happened only once in this world and that was on the day the Soviet Union fell. If that is so, it is also a reality that the superstate will be replaced one day. The signs of creation of the superstate were clearly visible in the world—the day people left their homelands and migrated to the new world and gained independence from colonial rulers with a head start of nearly two centuries compared to others who were anchored to history and traditions. The superstate started without the shackles of tradition. The absence of history and the traditions bound by it, were the strength of its people. If the signs were not clear from the beginning, it would have been evident at the end of the First World War. For those who missed it, the projections were clear at the end

of the Second World War or when the allied forces landed in Normandy in the watershed battle of the human race that ended the largest ever war fought in the world. The leadership of the future world was clear and pronounced. The first and prospective superstate of the world was chosen on those beaches on the day of landing. Still it took half a century for the United States to reach there. The delay is attributable to flaws in managing geostrategic security. Flaws are natural to human systems. The geostrategic deficit for a nation is the slip between its strategy and objectives. If the strategy towards the objective is flawed, then the deficit is the quantum of flaw. Effectiveness in geostrategic security lies in identifying the correct and practical objectives and minimising the deficit. If that is so, then the next superstate is in the making, somewhere. The weirdest of all the strategic soothsayers may perhaps be able to identify the chosen one, more with intuition (*coupe d'oeil*—remember Cluswitz?) rather than with precision calculation. But more than that, the question is not whether it will happen, but when. For the reigning superstate, there are more reasons to worry. Above all, it is about remaining on top. The United States is the first superstate that the world has ever witnessed in an actual sense. History has witnessed many powerful nations in its course including their decline but they were in a much more restricted space. Of course, they remained so for a considerably long period. There is an observation here regarding the life span of a superstate and its exit from the scene. Many had tried to become superpowers, but faded out. The United States, the first to hold the crown is wearing it since 1991. This time nation-states and its formal citizens cover the entire world. The hierarchy exists—yes.

The superpower can be a good power broker and agent of change. It can bring peace. But it has to be honest. It can intercede for peace and tranquillity, but can never guarantee national security to another country. The national security of a country has to be seen by the country itself through effective governance. National security is an internal affair of a nation that cannot be outsourced. The superstate can support it, but the support is ingrained in the geostrategic principles adopted by the specific country. A superstate may render help and ensure physical security. In fact, such a situation will impact upon its national security as a virtual protectorate. It is the business of individual nations. When dealing with the international community including the superstate of the day, it has to turn to geostrategy among other elements of national security. To that extent, the relationship with the superstate has to be established. It is not sensible in geostrategic security to be anti-superstate even if one has the potential to outsmart it later. Insularity, obsession and deception do not pay in geostrategic security. The most important vitality ingredient of a superstate is its ability to negotiate for global security. Perhaps its own existence is embedded in this capability. But, it will not do it. The perception of the geostrategic security of the superstate will be based on its retaining power that is, against its own capability to survive. It is an antithesis of sorts in chaos management. That is the tragedy the pharaohs of Egypt faced and the ancient Romans could not evade. A superstate can induce faith and confidence

in affected parties. It is too early for the United Nations to aspire for this task for obvious reasons—the majority of its members are weak and its voice is low. Peace broking and conflict resolution could be credible situations that can be utilised by the superstate to create win-win situations for affected parties.

No nation should underestimate the power of the superstate, even collectively as the United Nations. The power of a superstate can be calculated at every moment. Contrary to normal belief, it may not be increasing all the time. It will be vacillating even if increasing gradually only to drop later. It is obvious and visible as if in a pendulum under geostrategic gravity. How long the superstate will remain in position is important. It will not be infinite though the superstate will strain to retain the position. How super is a superstate? It is comparatively in a better position to bargain than others, coercively or otherwise. The United States prepared its way to the status before any other nation even thought about it, beginning with the end of the American Civil War.¹³ It reached there at the end of 1991. Some argue that monocentricity could be autocratic. There is no cause to be unduly apprehensive here. Historic bio-models prove that autocratic power projection is short-lived and self-destructive. It will be disastrous to the superstate to think of geostrategic autocracy. It will bring it down like a pyramid of cards dislocated by a restless ant. It cannot be stated for sure that another will take the position immediately. In all probabilities the death of a superstate will open another struggle in the virtual hierarchy of nations—probably the Second Cold War (the Fourth World War)¹⁴ until the world settles down to monocentricity again.

In geostrategic security, every nation has to see where it is on the line to the superstate status and nurture it cautiously wherever it may be positioned. It is a measure of momentum. It is not sure whether anyone on the line can overtake another unless the one ahead fades out on its own. The line up will be interesting to observe. A nation interested in geostrategic security has to behave that way and proceed at the appropriate pace. The position, the pace, the balancing act, the conduct, the governance, etc. have to be scientifically planned. Any deviation will dissolve that nation like an icicle in the advent of summer. Therefore, one of the aspects of geostrategy for a nation is managing the current superstate with respect to its position, remaining on the line towards the chance of becoming a superstate one day. This is visible on the tracks of history of the prospective superpower states. Their demeanour at every stage of the superstate status was indicative of their mistakes, corrective measures and opportunity exploitation towards the perceived geostrategic goal. Theoretically, the superstate has to decline one day. That is when the United Nations has to notch upwards to save the turmoil the world will face. Many nations were in turmoil subsequent to the disintegration of a prospective superstate—the Soviet Union. The death of an actual superstate could be many times disastrous to the world. It has to happen. It can be researched. Both the destruction of the superstate and the disaster that will follow are very predictable once the critical time is known. The gap before an appropriate superstate takes over and settles itself in the saddle can be violently blotted in the history of

humankind. This could just be the pivotal argument to promote the power and necessity of the United Nations in the world. The biggest challenge for a superstate lies in its ability to hold on to that position. It will be absolutely imprudent for it to think that it will be there forever. For a superstate, the primary object can shift from NS_{max} to survival as a superstate. In that case the goal of NS_{max} still remains as part of its survival. It is imperative for the superstate to understand it and, through effective contact, make the citizens appreciate the difference between their country and the rest. Being a highly advanced country, it will be comparatively easy to make its citizens appreciate the situation. Hyphenation does not matter. From here on one can lead to an important point—people participation. It is a vital ingredient in national security. It has to be the maximum in the case of the superstate. A country riddled with terrorism sanctuaries, strikes, stoppage of work, destabilising governments and political rivalries, etc. cannot have healthy people participation. It is also the job of the government to make the people appreciate and understand this. The secret of success of a superstate lies in its holding power and ability to withstand the forces against it. How this theory will develop is not understood until such time someone seriously writes about, “The rise and fall of the first superstate—the world remembers.” It will be quite a few generations ahead. It will also be clear from this argument that the world will ever be monocentric, from now on at least. Polycentrism will be felt when nations gain power, but in actuality, polycentrism will be a myth. What the world faced in the past was absence of a superstate, not polycentrism. One of the ways to assess a nation in the hierarchy of nations is to see the relative prosperity of its people. Table 14.1 is an examination of the reported “relative prosperity” of people (2003) in government and outside the government.

TABLE 14.1 Relative Prosperity—Government Sector Vs Outside Government¹⁵

<i>Country</i>	<i>Per capita GDP (US\$)</i>	<i>Rank</i>	<i>Model Income Ratio (Government sector to private sector)</i>	<i>Rank</i>
India	2,570	27	5.08	1
Pakistan	1,940	28	3.87	2
Russia	7,820	14	3.81	3
China	4,390	22	3.76	4
Philippines	4,280	23	3.26	5
Botswana	7,770	15	3.25	6
Venezuela	5,080	19	3.14	7
Egypt	3,710	25	2.91	8
Turkey	6,120	17	2.85	9

(Contd)

Table 14.1 Contd

Country	Per capita GDP (US\$)	Rank	Model Income Ratio (Government sector to private sector)	Rank
Indonesia	2,990	26	2.83	10
Mexico	8,540	12	2.66	11
Ukraine	4,650	20	2.34	12
South Africa	9,870	11	2.28	13
Senegal	1,510	30	2.17	14
Mongolia	1,650	29	1.96	15
Hungary	12,810	9	1.82	16
Guatemala	3,880	24	1.81	17
Poland	10,130	10	1.78	18
Malaysia	8,280	13	1.78	19
Brazil	7,250	16	1.68	20
Lebanon	4,470	21	1.45	21
Singapore	23,090	7	1.42	22
Kazakhstan	5,480	18	1.36	23
Japan	26,070	5	1.24	24
France	26,180	4	1.19	25
Israel	19,260	8	1.16	26
UK	25,870	6	1.09	27
Canada	28,070	2	1.07	28
Australia	29,960	3	1.03	29
USA	35,060	1	1.02	30

The table projects an interesting flare—the divide between the household of a government employee who enjoys an authority-vested comfort under an assured career prospect, and those outside it. In all the countries given in the table, the latter is in a relatively uncomfortable position. The gap shows the society is not inclusive. The highest in the table is India where the government employee household has a model income ratio of 5.08. At the lowest end is the United States, the superstate at 1.02. It is a direct thumb shot that can reveal India's weaknesses in becoming a superstate if ever it could dream of it. India is still colonial, although it does not know it, and the new viceroys are the government servants including its armed forces. Pakistan in second position at 3.87 can have the satisfaction of

being better than India, though it too remains colonial and equally disoriented. The welfare state model is absent at higher levels of ratio and tends to encourage neo-colonialism where the government employees control the public. Obviously, such countries have to be seen as practitioners of the colonial model and hence, placed at lower ends of the hierarchy. There are quite a few along with India besides Pakistan—Russia, China, Philippines, etc. whose governments miss out on authentic engagement with people in nation building. The question from a rear view mirror approach is, “Can these nations ever dream of becoming a superstate unless they learn to break the social disconnection by reducing the margin between the government employees and their equivalent public?” Such nations may become economically strong, but will not have the benefits shared equally for an authentic engagement of its citizens. This ratio may also matter in calculating the NSI, though this needs to be researched seriously.

INTERNATIONAL SYSTEMS

Geostrategic security has to function within the international system. The difficulty is that there will not be a *consensus ad idem* among those who matter in geostrategy about the prevailing global system. Opinions will differ and that will make the already complex system more difficult to appreciate. Correct appreciation of the system is necessary in order to understand its process of evolution that impacts upon geostrategic decisions. The highest body in a country that deals with geostrategy or, to that extent, the individual who heads it should be thorough with the perception within all the differing views. It has to be the person who is charged with the responsibility of taking care of the people of the country and their well-being—the president, prime minister, constitutional monarch or anybody on whom rests the ultimate accountability. It sounds tough, but is not so in reality. The historic international system is the basis and provides enough clues on how contemporary systems will work. Geostrategy is also about sincerity and winning. There is no place for wily approaches and deception. Unlike in the past, diplomacy without deception is the acceptable choice for the future.

There are many comparisons of historical systems with contemporary international systems. In the modern system, the doctrine of sovereignty plays an important part. Successful invasion by outsiders were the results of fragmentation from within when the states imploded and became more insecure. History can repeat itself in the contemporary global system and a close look will reveal examples of such repetitions. According to Holsti, when analysing the contemporary system, the main question is, “what is new and what is mainly a continuation of the past international practices?”¹⁶ Changes in geostrategy can occur at every moment; it is that fast. It is clear when one compares the plans a country had yesterday with those it has today. Geostrategy turns around the reality of the day, not the perception of yesterday. The ability in understanding the reality of the day if sharpened by clear perception of the reality of the future will make the difference. The secret of

geostrategic security lies in this capability—to understand the future. In international relations, it is partially hidden in the past.

The Westphalian rules of nation-states assumed use of force as state policy. The force was to be exercised through the armed forces by traditions of just war. There are opinions today that an armed force is not exactly one of the instruments of statecraft, as perceived till the late nineteenth century. At present, it is acceptable to use force only for self defence, individually or collectively, or as coercive sanctions approved by international organisations. It may change, as seen from the use of force by the superpower and its allies in the Iraq War of 2003. This was termed pre-emptive use of force. It did not have the approval of the Security Council according to Kofi Annan, the then secretary general of the United Nations. Kofi Annan's statement was countered by the president of the United States in his address in the Security Council as incorrect. The CIA was accused of attempting to falsify reports on Iraq's alleged weapons of mass destruction.¹⁷ The contradictions show that the UN Charter is a deficient instrument with respect to the problems of the day. War still remains a force of negotiation. Therefore, the armed forces of the relatively powerful continue to be used for force projection in statecraft. Things have not changed much since the Westphalian days. Even the power of supranational authorities is serious to reckon with, whether it is religion or sheer national power. Obviously, it is naive to expect human systems to change at a speed that is beyond the natural frequency of generations so far.

Over the years, scholars have defined different independent models of international politics. Holsti explained five models that may serve the purpose of choice in geostrategic thinking in national security.¹⁸ They are empirical models termed as "realism," the "society of states," "pluralist-interdependence," "dependency," and "world society." Each model is different and the views of scholars under each of these models are also different. There may be other models too that one could identify. Thucydides,¹⁹ Machiavelli (1469–1527),²⁰ and others in the very early days, and more recently Hans J. Morgenthau (1904–1980),²¹ advocated the first model: the *realism model*. In realism, the authority is with the state and only the state shall manage its affairs in international relationships. There is no super-ordinate authority to decide the relations between sovereigns.²² *Society of states* mentions about bonds and institutions between groups of states. It exists naturally as today's events show. The underlying reason is security; that the state may feel threatened by external forces. Many wars were fought between nations. There are countless crises. Hence, to protect the sovereignty and independence of states, societies of states are modelled. Slowly, with internal rules of the game and rules of diplomatic engagements, the society of states get formalised in which all states stand to gain. Non-state actors and other extraneous entities have a place in a *pluralistic-interdependence model* which is more based on politico-economic problems of a state. In the modern global system, there are many policy sectors that bear on each other in decision-making. In such models there is certain amount of vulnerability the states experience because of inter-dependability of the state

with non-state actors. National economies are interconnected. As a result, many new issues arise. The problems keep the issues of war and conflict at bay. It is trade, economics and industry that surface in discussions. National power is not military power and the armed forces are naturally and rightfully pushed behind. The more the nations become interdependent, the less likely are wars among each other. The *dependency model* springs out from interdependence. There are asymmetries and inequalities in the relationships among nations. These characteristics come up as salient points in the international relationships of nations. The dynamics of internationalism is driven by capitalism since colonial days and still continues as neo-colonialism. It is market driven and the more powerful want access to resources. There is a tie between economics and politics in the dependency model also. The overall economic picture is one of pronounced dependency, not interdependence. In this model, there is coercion by industrial countries over developing countries. Whether it is for education or jobs, the flow is from less developed to more developed countries, which in certain aspects look natural, but is a sign of dependency according to this model. The *world society model* shares some features of the last two models: pluralist-interdependency and dependency models. This model suggests that the world has to be seen globally and the socio-economic security matters are embedded within the global perspective. According to Holsti, the main characteristic of the global system is its social unity.²³ The world, according to this model, is heading towards a global system in international relations. It believes in the principle that the global system is superior to nations and only it has the capability to resolve issues of the world since nations, religions and institutions are comparatively helpless. Every model is based on certain assessments. This raises a question to ponder, “whether these models stop here or is there scope for additional models in the international system?” Will these models dissolve into each other in course of time? A close look will reveal that the world, whether historical or contemporary, has nothing much to offer as change towards betterment of society, and will move in its own pace unless nation-states put up efforts in that direction. It is important for the nations to have their sovereignty and independence unquestionably retained in a healthy state and the well-being of its people maximised. In this process, whatever model a nation-state assumes could be acceptable as long as it is in no way conflicting with the national security maximisation efforts of another nation. In such cases there will be geostrategic deficit. The greatest institution that could stand alone as a rejuvenator between the historical and contemporary international system is the United Nations. The concept of the United Nations has changed the models as well as their approach aspects. The world models for a contemporary system therefore, will be defined involving the United Nations as an ingredient in the international system and the process it adopts and its future existence in the world. It has also to be seen from the concept of superpowerism that has been explained earlier. If these two arguments and their interplay are acceptable, then there is another model in the offing—the sixth one.

The sixth model, according to this book, is the *global protective* model. In this model, the nations do not bind themselves for decisions. The governments may face (acceptable) setbacks within their systems of governance but have the backing of the world of nations in their continuity towards national security maximisation, though there are many acts beyond the capability of a nation and their primary supporters, like upgraded acts of terror that may demolish this hypothesis. The probability of many such events in the future is comparatively high. In that case one may have to limp back to the five-model theory of internationalism. Here the five models were examined only to drive home the sixth principle in modelling an international system. It is the sixth model that has the potential to germinate the idea of global security explained later in this book. Ideologies transformed international relationships in the 20th century, in appearance at least. Earlier centuries experienced dynastic, nationalistic, civil and imperial wars. Diplomacy was designed to further national interests through international interactions. International relations today are seemingly dominated more often than not by ideologies. The ideological perspective has become increasingly significant, as the general public has come to play a role in geostrategic affairs.

GEOSTRATEGY AND NATIVES—HYPHENATED OR OTHERWISE

People migrate and settle down in a new country. Some of them treat the new place as their country. They face resistance from those who are already there. Thereafter, they resist others who come in later like themselves. Ultimately, all of them settle down in the new country of their own. There is a difference, though. They become hyphenated: Indian-American, Sri Lankan-Indian, Tamil-Sri Lankan, African-American, Chinese-Singaporean, etc. The hyphen reminds them, in most of the cases that they may be the citizens, but not the natives even if born in generation next. Members of the hyphenated community often draw on the hyphen to step aside from their original country cousins in character and personality. There lies the mindset, caught in the web of duality in the migratory human. Duality is a dumpling in the soul from the point of view of nationality and nationalism. The duality is becoming stronger in today's concept where the early settlers consider themselves as the "natives." In fact, there is also certain degree of credibility deficit here with respect to nativism and indigenous life. Strictly, the natives are the indigenous people. Ideally, the rest are all hyphenated irrespective of when they migrated. The neo-natives, under hyphenation, retain somewhere in the corner of their minds a passing thought about their native country often with anger laced with retaliatory depression. The retaliatory depression is active with a tendency to react about their country of origin. The reaction comes out with anger, praise or regressive tendencies. Powerful nostalgia will be in the forefront. The cultural conditioning will be visible. It is a social behavioural aspect of a neo-native—the recent settler. There is a geostrategic opportunity here. Many countries have recognised this opportunity. For some it has become a kind of obligation to see

that the country tickles the root behaviour of their original people who are non-foreign citizens. India, China and other Asian countries feel that way. It has also become a strategic appreciation for Arab countries. A nation's diaspora is a good global influencer.²⁴ It is economic and political at the same time. Outflux of the diaspora is influx of international respect and credibility. The areas are many: healthcare, food, science and technology, service industries, ideas, knowledge banking, etc. These people, irrespective of their countries of origin or parental origin have contributed substantially for the socio-economic well-being of the countries of their citizenship and continue doing so. It is a step towards the global security concept (and a supporter of the global protective model explained earlier), though the world may not realise it at the moment. The migrants may differ from each other but they have a complex migratory psyche that is common. The psyche is in search of opportunity coupled with the dynamics of restlessness. Irrespective of what it may be, emigrant communities imbibe each other's values and emanate confidence of pluralism in an almost secular environment. These are the signs of the world's movement towards the global security concept. Hence, supporting and being concerned about the people of a nation settled elsewhere is like promoting the harbingers of a future that is prosperous and much advanced in civility. They ring in goodness for humanity. That is the reason why the offshore personnel of a nation settled elsewhere is one of the main components of geostrategic security for a nation. A migrant works harder for this reason. The migrants can be re-connected with their countries of origin easily. They can be part of the process of national security maximisation in both countries—their country of origin and their country of citizenship, provided they are geostrategically anchored well in the system. This is the responsibility of both the governments within the element of geostrategic security. The hyphen within the hyphenated community abroad is a strong bridge in geostrategy that is mutually beneficial. Prudent governments will recognise it. An example on the contrary was the debacle in Uganda when Idi Amin (1925–2003)²⁵ expelled the people of foreign origin, especially the Israelis and the Indians, most of them hyphenated British citizens. Uganda and Idi Amin's regime paid heavily for that action that ended in the hostage rescue action at Entebbe on 3–4 July 1976. Hitler lost touch with the reality of geostrategy when he ordered ousting the Jews. Such geostrategic blunders cause governments to lose nations and nations their governments.

United Nations and the Uncertain World

The United Nations came under a low, post-invasion of Iraq by the US lead forces in 2003. It was not for the first time its credibility was tested. The focal point of its credibility lies in its international character formed out of the consternation in the aftermath of the Second World War, not strictly in its charter. The world did not want another war of that magnitude. Though established on 24 October 1945, the concept was already there with the League of Nations for more or less similar

reasons at the end of the First World War. The purpose in both the cases was to protect succeeding generations from the scourge of war. The League of Nations met for the first time on 15 November 1920 and 42 nations were represented. The president of the United States, Woodrow Wilson (1856–1924) strongly favoured the idea as a means of preventing another destructive world war. The League covenant was based on the principles of collective security by joint action of the member states against an aggressor and other matters. The covenant was part of the Treaty of Versailles on 28 January 1919 that brought the end of the First World War. During the 1920s, the League assimilated new members and experienced no serious challenges to its authority. Soon it was weakened by the situations on ground. The non-adherence of the United States²⁶ when the US Congress failed to ratify the Treaty of Versailles that contained the covenant was a serious setback in irony. The United States never became a member. One of the League's main purposes in preventing aggression was to preserve the status quo as established by the post World War I peace treaties. In the 1930s, when dissatisfied nations undertook to upset this arrangement and other major powers declined to enforce it, the League, which had no power other than that of its member states, was unable to take action. Discredited by its failures, the League ceased its activities during World War II. The lesson for the United Nations and the assurance for the world community for its continued existence in honouring its charter and meeting the demands of the world to avoid serious destruction by war, lie in the 26 years life span of the League of Nations as a bio-model. The United Nations survived many tests in the 20th century. It faced a more serious test in the beginning of the 21st century—the world's first net-centric war unleashed on Iraq by the United States and its allies in 2003. It was said to be a pre-emptive attack controlled from a new terrain—outer space. Does the charter permit such pre-emptive strikes? Not yet. It amounts to a violation parallel to the counter events of League of Nations enough to drop the credibility of the United Nations to an all-time low. But, there are no signs of its existence being questioned. The fact that Kofi Annan and the members of the UN were able to survive the resonance in charter was another matter. It shows the resilience the UN has acquired in the half century of its existence. It would have collapsed like the League of Nations if it were in the late 40s when the geostrategic security concept was in its early stages. Kofi Annan's success here is in diversion. He appointed a commission that promised reforms to change the international organisation into an unshakeable giant. But in reality, Kofi Annan diverted the attention of the world from the falling credibility of the UN by making the world believe that the UN was in control, and it was very much needed in future. He knew his bold statements were not sufficient in the geostrategic cacophony. His decisions reflected the acuity and expertise of a corporate chief. It was a great tactical victory for the UN. Such leadership and clever games were not available at the deathbed of the League of Nations. Probably it was too early. Though Kofi Annan has done the best he could think of, reengineering the United Nations could still be an impossible agenda. Amending the charter and agreeing on the reforms are

not going to be easy. The Achilles heel of the UN lies in the power of the aptly termed big five to veto. The death knell of the UN is hidden in it. A peep into the arms sales of the five veto empowered nations and the power they wield is sufficient to prove this theory. It is this power that will one day cause their decline and set the motion for the fall of the UN. What is the best choice? Abolish veto power in toto and opt for two-third (or any convenient majority) with additional members in the Security Council. The age of the veto was over with the Cold War. If delayed, perhaps the turning point towards the transmogrification if not the beginning of the end of the United Nations, will originate from here. The comparatively civilised world understands the need for an international organisation like the UN. It is evident from its membership, which stands at 191 (2004) compared to the 51 (50 initial founder members and Poland) in the beginning. The UN cannot end up as an epitome of colonial hierarchy in the civilised world. Consensus is the word in civility—not veto.

Kofi Annan tasked the panel to examine new global threats, analyse challenges and opportunities and recommend changes to ensure collective action to deal with them. One of the areas was the composition of the Security Council. That perhaps, will be the weakest part where their reforms may find many glitches that may essentially come from the Achilles heel of the UN—the unquestioning veto system. The recommendations made sum up the need for changing the 1945 power balance by expanding the Security Council and bringing out the question of pre-emptive military strikes. In the beginning, the Security Council had 11 members, five permanent and six elected for two-year non-renewable terms. Later, in the late sixties the membership was expanded to 10 in the non-permanent category. The permanent members were the United States, United Kingdom, China, France and Russia—the geostrategic top five of the world at the time that the UN was formed. Among them, the US graduated to the level of the first superpower as well as the superstate in the hierarchy of nations in 1991. Its clout beyond the veto was clear and visible since then. Today, it has a status that demands productive cooperation and interdependence with the UN—it is in, but likes to play from the outside. It also brings out another theory, that the superstate will play from outside the United Nations—the rest of the world though, may not be a referee or a cop. Superpowerdom is not permanent. The superpower needs the UN the way the UN needs it, for the right balance. There is a mutual application, though perhaps not exactly like that of the sea anemone and the hermit crab in mutual existence. The hierarchy of the Security Council and to that extent the entire United Nations is not only conventional, but also based on the geostrategic power balance of the days of its formation. The chance to become the next superstate, which is a certainty however long it may take, is high for those in the veto corridor. The proposal for any other nation to get into it will be extremely remote. But the turn of events may be different since veto power reduces collective strength. The more a prospective incumbent seeks veto power, the more it will be resisted by the inherent conditions of power within the Security Council. In the past attempts were made and working

groups formed in an effort to change the system. Nothing worked. The complacency got a jolt with the Iraq invasion that questioned the relevancy of the United Nations. Kofi Annan's team would have gone through an existential introspection. A new panel was formed but according to reports the panel too had problems in consensus. It was natural that this would be so. The panel submitted its report on 30 November 2004. The recommendations included overhaul of the Security Council and holding out legitimacy that it could grant pre-emptive strikes by the military. The suggestion was that the Security Council should increase membership from 15 to 24. The panel put two proposals. One alternative was to add six new permanent members²⁷ and three additional non-permanent members. That would make it 11 permanent and 13 non-permanent members for two years. Another option was for a new tier of eight semi-permanent members, chosen for a renewable four-year term and one additional two-year term each to the existing 10—that means five permanent members with eight non-permanent members on four-year term and 11 non-permanent members on two-year term. Veto would be limited to the original five. An interesting point here was the number 24, a figure with which the United States was said to be comfortable.²⁸ It showed the external influence that a superstate could wield in an international organisation. Eroding the powers of veto would be another issue of contention. Russia had stated that it was against it.²⁹ Table 14.2 sums up the position and proposals for revamping the Security Council.

TABLE 14.2 Security Council Line-up and Proposals

	<i>Permanent</i>	<i>Two-year Term</i>	<i>Four-year Term</i>	<i>Total</i>
Current	5	10	—	15
Proposal I	11	13	—	24
Proposal II	5	11	8	24

The panel projected 101 recommendations. Changes would require amendments to the UN Charter.³⁰ Approval of the General Assembly would be required by two-third majority in the 191-member states including all five permanent members, followed by ratification by legislators of their governments. Among the panel's recommendations, the criteria for membership in the Security Council would be the financial, military and diplomatic contributions that the states made to the UN. The criterion for developed countries would be the progress in meeting the internationally agreed target of 0.7 per cent of their GDP for official development assistance (ODA).³¹ The evolution of the Security Council will also show the evolution of a new geostrategic power structure in the world. The acceptability of the new power structure to those already in the compartment has to be seen. The *Washington Post* criticised the panel's recommendation stating that they were flawed. According to them the UN's role was to project Washington's

policy and American power to the world.³² The simple statement substantiates the role the United States has assigned to itself with respect to the United Nations. Something is rotten here. The superstate has to understand it for its own sake. Or do the arguments, including those of the *Washington Post* lead to the fact that the UN will always be under the superstate, whoever it may be? Kofi Annan, the Secretary General, amazingly succeeded in bringing a revived interest in the United Nations by convening the commission to bring about changes in the UN to meet the new challenges to global security. It served as a diversionary approach when the UN scrips crashed to an all-time low post the invasion of Iraq. Besides the snub on the Iraqi front, the UN faces a host of problems, some of them quite sleazy—finances; US supremacy and intimidation; lack of advancement opportunities for employees; competence deficit among employees; non-recognition of human efforts; incorporation of violators of human relations, human rights, etc. in matters associated with various UN forums; complaints; general unrest; charges of corruption;³³ impropriety in dealings; peacekeeping violations including allegations of rape; etc.³⁴ Many of its programmes either failed or did not show effective results. An example is the poverty alleviation programme. The problems and inherent helplessness show that the UN is sliding on a very sharp edge. But hope, induced by circumstances, prevails.

CONCLUSION

Geostrategic security is not just diplomacy. The world is evolving in civility and knowledge, geostrategists should be aware. Geostrategy is based on win-win situations and in the long term, in a win-hold-win approach. It is time to shed deceptive practices in geostrategy. Deception is more damaging to the perpetrator even in the short run. Worse, the confidence gets shattered almost permanently. The UN is yet to go through the acid tests that can assure its survival. In the meantime it will still stand the test of time and may not decay like the League of Nations though its credibility will continue to be at stake. The world will be on a long wait for a more credible international organisation.

Notes

¹ V.V. Paranjpe, "Panchsheel: The Untold Story," *Hindustan Times*, New Delhi, 18 June 2004, p. 10. The *Panchsheel* was conceptualised to be the basis of friendly relations between India and China. But it became null in the wake of the 1962 Sino-Indian War. Under the agreement, India gave up all the extra-territorial rights and privileges it enjoyed in Tibet and formally recognised Tibet as a region of China. The name (*Panchsheel*) derived from the five principles that were agreed upon. They were: 1. mutual respect for each other's territorial integrity and sovereignty, 2. mutual non-aggression, 3. mutual non-interference in internal affairs, 4. equal and mutual benefit working relationship, and 5. peaceful co-existence.

² Ibid.

³ Ibid.

⁴ Ibid.

⁵ Carl Zimmer, "Devious Butterflies, Frogs and Other Lying Species," *The Asian Age*, New Delhi, articles selected from *The New York Times*, 6 January 2007, p. 6.

⁶ Is there a similarity in the Pearl Harbour attack and the 11 September 2001 terrorist attacks, including the consequences of the attacks? Deception was a common factor in both the attacks. There are indicators that deception could not be rewarding in the long run. On the contrary, it could be very damaging. The US was not a superpower during the Pearl Harbour attack. It also showed that the deception backlash could be very serious to the perpetrator. In geostrategy, it is a serious matter.

⁷ Dennis Kux, *India and the United States: Estranged Democracies*, National Defence University Press, Washington DC, 1992, pp. 294–295.

⁸ East Pakistan subsequently broke away from Pakistan as a result of a war between India and Pakistan (1971) and became Bangladesh, a separate nation.

⁹ Ibid.

¹⁰ Gurcharan Singh Sandhu, *Military History of Ancient India*, Vision Books, New Delhi, 2000, p. 237.

¹¹ "From Afghanistan to Zimbabwe: The New World Disorder," *Hindustan Times*, New Delhi, 4 October 2005, p. 12.

¹² There have been never-ending variations in the analysis of the decline and fall of the Roman Empire to identify the causes, but serious study will be required to point out the exact date and occasion when the slide commenced in the long winding period that culminated in total decline and fall. It will still remain highly debatable. But in the modern geostrategy, the decline as well as the growth points can be identified with better accuracy.

¹³ The war between the Union and the Confederacy in America from 1861 to 1865.

¹⁴ In this book, the Cold War is treated as a world war.

¹⁵ G. Ramachandran, "The DNA of India's Poverty," *The Hindu, Business Line*, Chennai, 14 August 2004, p. 8.

¹⁶ K.J. Holsti, *International Politics—A Framework for Analysis*, Prentice Hall, New Jersey, 1992, p. 44.

¹⁷ "CIA Agent was told to Falsify WMD Reports," *The Times of India*, Mumbai, 10 December 2004, p. 13.

¹⁸ Holsti, n. 16, p. 67.

¹⁹ *Encyclopaedia Britannica, Ultimate Reference Suite*, CD-ROM, 2004. Thucydides was an ancient Greek historian. He wrote about the Peloponnesian War. His work was the first recorded political and moral analysis of a nation's war policies.

²⁰ Ibid. Italian writer and statesman. Original political theorist whose work *The Prince* is a treatise on the subject. His book brought him a reputation as amoral cynicism.

²¹ Hans Joachim Morgenthau, a German born American political scientist was a leading analyst on the role of power in international politics.

²² Holsti, n. 16, p. 67.

²³ Ibid. p. 77.

²⁴ Vinod Khosla, "Education and Ideas, The Punch that the Diaspora can Deliver," *The Economic Times*, New Delhi, 9 January 2003, p. 1

²⁵ Military president of Uganda from 1971 to 1989.

²⁶ *Encyclopaedia Britannica*, n. 19.

²⁷ The likely candidates are Brazil, Egypt, Germany, India and Japan, and either Nigeria or South Africa.

²⁸ Chinmaya R. Garekhan, "Join the Club," *Hindustan Times*, New Delhi, 7 December 2004, p. 10.

²⁹ Saurabh Shukla, UN Seat Yes, Veto No, *Hindustan Times* (New Delhi), 4 December 2004, p. 1.

³⁰ Among these recommendations, serials 97–101 of the panel deals with changes in the UN Charter: any amendment to Article 23 required by proposed reforms; Articles 53 to 107 are considered outdated; deletion of Chapter XIII on The Trusteeship Council; Article 47 on the Military Staff Committee and all references to the Committee in Articles 26, 45 and 46; and a call to all member states for re-dedication to the purposes and principles of the Charter respectively.

³¹ ODA deals with the official aid policy of the concerned government to address challenges of the world including peace building.

³² "UN's Role is to Project Washington's Policy and American Power to the World," *PTI News Scan*, New Delhi, 9 December 2004.

³³ The secretary general was seriously concerned about alleged corruption in the food for oil programme in Iraq during the Saddam days.

³⁴ Farid Zakaria, "When UN Fails We All Do," *The Indian Express*, Mumbai, 10 December 2004, p. 7, and "UN Members Back Annan with A Standing Ovation," *The Indian Express*, New Delhi, 10 December 2004, p. 7. The corruption charges against the UN in the oil for food programme was refuted in the report, which stated that the programme was designed by the US and Britain. According to the report, they allowed Saddam to choose his trading partners, banks and consultants. They vetted every contract. The corruption scandal is a price the UN had to pay on an issue over which it had only an endorsement of its name, but no actual control. The US lawmakers called for Kofi Annan's resignation, but the General Assembly gave him a standing ovation that lasted a minute. It was interpreted as an acknowledgement of his actions as the secretary general according to the Assembly president Jean Ping of Gabon.

15

Informational Security

It is from acquired information those who want to know derive the intentions.

Information is about knowledge—knowledge acquisition, retention and communication. Knowledge is a collection of facts or data on existing or new things gained by erudition and experience. Knowledge is derived from information and disseminated every moment in a human system. Today, unlike in the past, the people want to know. Knowledge is the state of knowing correctly.

INFORMATIONAL SECURITY: THE NINTH ELEMENT

Informational security is the element that deals with the processes of acquiring, storing and transferring information among people within the concept of national security. Information brings together concepts, methods and intelligence from various disciplines of politics, governance, security, national policies, diplomacy, research and development, military, etc. through aids that handle acquisition, collation, recording, organisation, storage, retrieval, interpretation, display, dissemination and use. Information is linked to people participation in national security. People have a right to information because they are not just stakeholders, but also partners in governance. The modern day governance is based on this fact—the right of people to information and the responsibility of the government to provide such information as is necessary for national security governance. Kautilya's *Arthashastra* places great emphasis on the importance of information and its correct dissemination through a network of runners, informers and spies, which in the absence of a ministry of public information and a police force, functioned as a surveillance corps for the king, focusing particularly on any external threats and internal dissidence.¹ In its modern concept, information is much beyond the realms of any discipline within limited boundaries. Information generates information. Information organised in logical relationships becomes knowledge to be acquired by systematic exposure or study. Analytic insights into information lead to wisdom. There is a profundity in the transformation of society and culture as a continuous process moulded by information. Individual and collective value systems are different from those of organisations, government and other compound institutions that often think in the Cartesian way.² Cartesian thinking does not pave the way

for most of the changes that take place because it was based more on introspection than innovative thinking. Information is shaped primarily by the way the mind perceives it, which is based on innovation at all levels and instants. Even a rumour—rumour is information—is innovative. It can be wrong if the mind does not perceive it correctly. It often happens in a system where there are many who think on a singular topic differently. Information, therefore, gets into a flux if not managed correctly. Philosophically, information is considered an objective (mind-independent) entity.³ It is applicable in information theory related to communication. The thought process of the people involved generates all the information in a human system, applicable to that system. Odysseus could not have fallen upon the idea of the Trojan horse without consistently thinking about a plan for a deceptive tactical coup in the legendary war against Troy.

Interest in information phenomena increased dramatically in the 20th century.⁴ Every government, international organisation, industry, corporate house, individual and other human system is increasingly generating information and is concerned about information gathering and security. The often-overlapping viewpoints in these fields lead to different (and sometimes conflicting) concepts and “definitions” of information. It warps informational security related to such systems. Beyond such distortions, it is processing information that becomes a concern of informational security. Information is knowledge about anything. It need not be refined data. There is a certain viewpoint, especially in the military, to treat information as data collected and processed. In other words, it is processed data at the end. The difference here is that even unprocessed data is information, but needs to be refined and processed. So, when is the data ready to be defined as information? In informational security, it is recommended that the data be considered as information the moment it is originated inside a source, whether processed or unprocessed. Government, private organisations, citizen groups and various other human networks do the restructuring of information but for information to become part of the collective consciousness of the people of a country, it has to be transmitted through relevant media. If the information is aimed at the people in general, it will be the mass media; or if aimed at a select section of the group it will be a select media. Information may get censored at the point of origin before it is communicated. While it may be needed for specific reasons, censored information will lack continuity. The gaps will be visible and get filled by wrong information originated in receptors. Such issues will invoke the peoples’ right to information in national matters. It is an important aspect of social change.⁵ The types of information in national security can be those connected with governance, military, research and development, and all other factors that govern each of the national security elements. Considering that the government and the people have mutual responsibility in national security maximisation, information should be secured for its correctness and user limitations.

SECURING INFORMATION

Information originates every minute at every point in the working of a nation. Any lacuna in the system of information management will be evident in the ultimate national security audit. It has to be under a legislation that is extremely protective of state secrecy. Information that affects a nation's sovereignty, integrity, elements of national security, scientific or economic interest, conduct of international relations, internal notings on files, etc., are to be reserved and secured. The opposite is the citizen's rights for disclosure of information. These rights may strike a discord with national security objectives if not balanced properly. This is more so in a democratic scenario with a high profile, free media. Human right laws may call for a certain amount of liberalisation; that is only natural justice. The government has to have a say in informational security in a balanced manner and appropriate to national interests. These are to be cleared and clarified through enactments. These are people-oriented acts related to freedom of information in the governance of a nation. Right to information to people through legislation supports informational security and thereby, effective and responsive government.⁶ Legislation should provide for freedom to every citizen to secure access to information under the control of public authorities, consistent with public interest, in order to promote openness, transparency and accountability in administration and in relation to matters connected therewith on incidentals thereto. Public access to information is not aimed at containing practices of impropriety but for the much needed people participation in governance towards NS_{max} . Freedom of information does not provide the right to a person to demand all information connected with the state. There is information that may prejudicially affect the elements of national security if made open. Similarly, there is information that would affect the concept of NS_{max} if not made public. Informational security therefore, is managing and regulating information flow. Legislative measures on freedom of information and informational security should be adequately clear on this subject. Informational security is not safeguarding information alone. It also has to take care of information overload and misinformation based on psychological operations and information warfare whether covert or overt. The capabilities far exceed their requirements today. Snooping on radio stations and controlling them by those who are generally known as "the pirates of the airways" through carefully programmed frequencies, will turn to pale when the latest experiments on mind control drops a lid to exhibit its perceived potential. Its implications are chillingly real. It can control people, the whole population and according to analysts, could already been happening. There are also predictions that mind control will be the most non-lethal weapon that will replace all other smart and lethal weapons. According to the Discovery Channel⁷ "War 2020 may be the one without so much of a whimper." While so much has been said on mind control, one could also give it a cushion from the past quoting the experiments of the Cold War days on psychokinesis, telepathy and other mind games conducted in secret human

laboratories of the two prospective superpowers of the world over land, air and sea (in surface vessels and submarines). The fact that these experiments vanished without a snivel is another matter, though.

People all over the world want to be informed.⁸ People's interest in public affairs is only natural in the knowledge world. An integral part of informational security is knowledge management and is defined as the *capability to create new knowledge, disseminate it where necessary, and embody it in its system* with respect to national security. The knowledge can be subjective (tacit) or objective (explicit). It brings together strands from various disciplines and technologies. An example of independent informational security where knowledge management is effectively used is the knowledge enabled electronic governance in certain segments of society including national organisations and communities. The regulated data that flows through the corridors of governance should be accessible to all.⁹ Informational security with freedom of the media is the hallmark of governance aimed at NS_{max}. An issue that causes concern among researchers studying changes in society is the growing gap between the information rich and the information poor. Information poverty has become a matter of concern. Information rich are the people with easy access to information. Information poor are those with less access to information. The disparity can effect social inequalities and cause negative consequences and is hence, a matter of importance in the overall strategy towards informational security. Information equity is important.

There are two types of information relative to a system: (1) the knowledge that is wanted from outside the system, and (2) the knowledge that is originated within the system. Both are required to be protected. The security of information and its effects on national security depend on the nature of information and the way it has been handled. Here, there is a similarity with cyber system information management—audit of information, zero-leak, preventing information corruption, etc. In national security management, information leak and distortion can cause heavy embarrassment to the government. There are also deliberate leaks of information as a counter measure for toppling a move that otherwise cannot be objected to. The maze of information security bends around many uncertainties.

HISTORY—INFORMATION THAT WAS AND WAS NOT

History is a source of information. Unfortunately history bends truth, sometimes deliberately. Those who had control over it would have consciously distorted the history of nations. The reasons are understandable. Sometimes distortions might come out of ignorance and lack of feel atypical to alien observations of a system. Restructuring these misreported historical records today will cause problems of political and intellectual nature. Therefore, history will remain a witness to its own defacement. Correcting them will invite additional issues. A sincere effort to re-record the history of a nation or information that was, is therefore extremely difficult. There are many distorted recordings in the annals of history and

information corridors. Even a mention could be controversial. Handling such information is another aspect of informational security. The best way is to avoid debates that may fan factional disturbances and conflicts to avoid damage to the national security fabric. Besides, it is a fact that the way information is distorted in history is the way those responsible wanted history to be. History is the epitaph on the tombstone of time that has passed away. Epitaphs are not written by the dead in the dead of the night but by those still alive, in their own visualisation of the dead. History is written every moment when the time dies. Information spills every moment it is written. Distortion of information is a kind of wish fulfilment but it affects knowledge generation and retention very seriously. From the informational security point of view, misreported history or information that was, may be best left that way without repetition or serious indulgence to avoid further distortion. But, those governing national security should know this.

INTELLIGENCE

Espionage and intelligence gathering is commonly accepted since the earliest days of strategic thinking. Sun Tzu, Kautilya and others had mentioned intelligence gathering as the strong points of kingdoms. Intelligence is information and beyond about the “other party” in a competitive environment. Mere information may not lead to required action; it needs actionable intelligence derived from acquired information. Intelligence can be classified as strategic, tactical, operational and counter intelligence. The broadest of all is strategic intelligence. Most of the actionable intelligence falls in tactical, operational and counterintelligence. Strategic intelligence will primarily contain information about the other parties that can jeopardise national security objectives. The difference between tactical and operational intelligence is quite narrow. Tactical intelligence leads to operational or combat intelligence. Such information is not restricted to the military alone but also to governments and other institutions for their manoeuvres in every field of national security. Intelligence narrows down through tactical intelligence to operational intelligence. Even the distinction between strategic and tactical may be vanishing slowly because of the advancements in intelligence acquisition, collation, analysis and dissemination. Counterintelligence is information and activity related to protecting one’s own information and the secrecy of one’s own intelligence operations. Its purpose is to prevent agents or intelligence mechanisms of other party from penetrating one’s government, military and other armed forces, intelligence agencies, research and development establishments, information systems, etc. Counterintelligence is also concerned with protecting a nation’s high technology, deterring terrorism and coping with transnational crimes. Counterintelligence operations sometimes produce positive actionable intelligence. Intelligence is part of maintaining one’s own informational security and breaking that of the adversary. The public perception of intelligence is that of a cloak-and-dagger game, which it is not. It is simply information acquisition and safeguard.

Often, it is done in the normal demeanour of an active and unassuming analyst in a quiet office. Not all intelligence gathering is undramatic. Physical efforts are required in certain areas including normal espionage, along with the aspects of cultivating people for information. Covert sources of intelligence are dramatic, falling into three major classifications: aerial and space reconnaissance; electronic eavesdropping and code breaking; and the secret agent working at the classic spy trade. Broadly speaking, the value of each as a source of crucial information is probably in descending order as listed.

Intelligence is not an end by itself. It is used to leverage operations. Intelligence provides intentions and near real-time information that is collected mainly from electronic media, human intelligence and open source intelligence and analysed for action. The key elements are setting priorities for collection, processing and exploiting the collected information and communicating results to the appropriate levels of command. For example, taking an aerial picture is not an end; it must be analysed and communicated in a way that is both usable and useful. Otherwise it is only information, not intelligence. In its real sense, intelligence is intention, not mere information. Information may provide a base for analysis. An intention will have a certain time span. It may vary when the intention is delayed or changed. Here, it is important to understand that a changed intention is another intention, therefore another input of intelligence, the previous intention being concluded. Irrespective of the time span, an intention is actionable intelligence. Intelligence is the *hors d'oeuvre* of a craving armed force or a governance system including that of corporate governance that has the capability for action. If the intention is known, the threat-to-target time can be interrupted. Actionable intelligence is a big morale booster for armed forces' personnel when trapped between duty and death. The importance of intelligence should never be underestimated.¹⁰

Acquisition of data is mere collection of information; collation, analysis and dissemination take a longer time. By that time the purpose may fade away. Collection is of no use if it cannot be converted into effective intelligence for action. It was reported that the Federal Bureau of Investigation (FBI) had 120,000 hours of data on tape in three years time since the tragedy of terror on 11 September 2001 in the USA.¹¹ Information overload is a problem in intelligence. One of the means of intelligence gathering is open source intelligence. It does not need a large organisational setup or costly facilities. The ability of intelligence to provide commanders with knowledge about the disposition and movement of enemy forces is part of the highly acclaimed revolution in military affairs (RMA). RMA provides an edge in conventional military operations for the foreseeable future. It is equally applicable in a non-military scenario. Integrating the intelligence of different agencies rather than allowing each agency to consolidate its turf, better serves the security of a people. This is the most talked about problem. On one hand a single agency cannot do it all; on the other, more than one agency, it is said, could induce turf problems. In reality, intelligence sharing between agencies should be done under extreme caution because, if not done properly, it can dilute the entire effort.

Informational security will be jeopardised. This is the reason behind the hesitation of an intelligence agency to share its intelligence with another. It is not really a turf problem, though considered so worldwide. Intelligence agencies normally get the blame for lack of coordination and reluctance in sharing intelligence when something untoward happens.¹² But it arises from the issue of states keeping its information guarded from those required to know. All information need not be intelligence. The argument whether intelligence is intention, information or both can be answered if we consider informational security as an element of national security. Information that affects national security including intentions can be seen here as intelligence. Therefore, there is a need to retain such information.

RUMOURS AND INFORMATIONAL SECURITY

In any society, the rumour mill churns overtime. It arises from the simple behaviour pattern of saying something new to gain identity, unless deliberate. The grapevine twirls along. A rumour is usually an unverified and unconfirmed report with difficulties in tracing its origin. Official information on the subject can get caught in a web of confusion. The only way is to be alert about such misinformation. It is best done by a well-oiled public information, or corporate or organisational information system. This is an important activity within informational security management. Misinformation gains currency in a community that is swayed by histrionics even if it is unbelievable. Rumours are structurally embedded in a riot situation¹³ and take several forms in a conducive scenario, especially where the government is not able to take action. There are rumours that may damage a government, community or reputation. Misinformation can arrive at any place. Though uninvited, it soon gains acceptance in a community, like a virus in an unprotected computer system. It also multiplies and takes different shapes depending upon its transmission mode. The only solution is protection. The helplessness of the government machinery in controlling rumours is also because most such rumours float around in the middle of social frenzy. Such situations should be anticipated and pre-empted since rumours narrow options for corrective measures. Information deficit when overloaded can cause havoc in a human system. Rumour originates from the urge of the human will to find information. Humans crave information as if it is a life-saving resource. Under such situations it is necessary for the government to feed the people with information to prevent the insatiable urge taking a different turn and if this happens, the government has to find a way to deflect it away from national security mishaps. Often, it is easier said than done. As distorted information, rumours can cause simple misunderstandings to gut-wrenching riots, and beyond. Spreading rumours is an act that has criminal intonations. It has to be countered by informational security measures. Most of the time, rumours actually cause damage at various levels and intensity. Hindu-Muslim riots in India and the biggest clash of the communities during the partition of India have taken place on venomous rumours that whipped up social frenzy

where action preceded reason. Containing rumours therefore, is a major activity in informational security. The timing of the rumour gives a fairly good idea about its intention. Those in informational security affairs can understand it by careful analysis of past data and thereby predicting future occurrence. Counter measures should be in place by then. Rumours are finding it difficult to sustain in today's increased multimedia savvy world, unless the media itself generate and carry rumours.

INFORMATION FLOW

Information flows from its point of origin to the target recipient. Thereafter, it continues with add-ons mostly at every step. Absence of distortion in information flow is an ideal situation. A single flow is close-ended. Where the target is the public, the flow is open-ended—media, for example. Often, information management is to avoid a close-ended information flow from becoming open-ended and vice versa. Close-ended information is for select recipients that may even include the public under the right to information in participative governance. If closed information becomes open-ended, it is said that there is a leak in the flow of information; if open-ended information becomes close-ended there is information blockade. Both situations are bad for national security governance. The patterns of information flow give an indication of the informational security system prevalent. In a close-ended system, information flows vertically, horizontally and downwards. In an open-ended system it is generic. The flow of information in both the systems will depend upon the hierarchical planning model of the state. In a network state, there will be unhindered information exchange among various agencies on matters that are relatively important for each agency. If such a system does not prevail, the agencies concerned will either starve for information or will be guided by misinformation. An information perspective permits a better understanding of the challenges nation-states face in controlling national security relationships. It may be surprising that even in a democratic system, there may not be effective networking between departments, if the country is not particular about its informational security system. It leads to the statement that one hand does not know what the other is doing. It is worse when one hand misinterprets what the other is doing. Absence of professionally managed information networking in a country will lead to rumours, information leaks and information blockades that starve information.

Every system in a country should have its path of undistorted and secured information flow in its exclusive network: military systems, economic systems, market force prediction systems, administrative systems, science and technology (innovations), educational systems, internal and external security systems, diplomatic geostrategic systems, political systems, etc. Government is one of the many actors in this chain. New relationships will open up in information flow. It is also applicable for information that flows across borders. Correct information

flow in the international network upgrades the geostrategic attributes of a country. Information networking will be technology oriented with advancement in all fields of communication. Technological improvements are critical for effective informational security management within a country and across its borders. The role of the government is in linking local networks with broader systems for unhindered information flow that does not permit leaks, rumours or starvation. Information flow networks should be integrated with national technology policy.

INFORMATIONAL SECURITY IN MILITARY STRATEGY AND INFORMATION WARFARE

The military strategy of a nation depends heavily on information. The command and control systems (C²) graduate to communication, computers and intelligence (C⁴I) with the introduction of informational security. Management of informational security in military strategy deals with mobilising, fielding, protecting and enhancing the force in a military situation. Informational security developments should run concurrently between military strategy and other national requirements. It could be networked effectively within the national system. Convergence of informational security in military affairs leads to a net-centric strategy. Those who were in a better position for information warfare always had the strategic and tactical advantage in military affairs over their opponents. A nation that does not have an effective informational security network running concurrently with military strategy and other national requirements cannot achieve a higher degree of effectiveness in information warfare. It is a myth that information warfare can work in isolation without an effective informational security mechanism in place in non-military information aspects. Military strategists often overlook this requirement. It is similar to any other national activity and it is its correlation to military affairs that leads to RMA. A stable and technologically advanced industrial structure, national infrastructure, food and logistics back up, scientific and technological background, etc., are very much essential for military security. Similarly, informational security prospects will guide the achievements in information warfare. The aim is to get at the opponents information stockpile and deny them their own information. While denial, destruction, defacing, exploiting, corrupting, etc. may form the mode of attack, protecting one's own information from the enemy will be in the defensive mode. Information warfare is not complete without exploiting the information available with the enemy even when there is no declared war. One of the advantages of information warfare is the ability to undermine the enemy by exploiting its information without actually having to fight a war. Information warfare is not exclusively reserved for declared wars. It can be waged anytime since nations are constantly at war, in a sense, at any given time. In information warfare, knowledge management is the key to winning a war, but that alone cannot do it. At the same time, failure of information warfare techniques can cause serious setbacks in actual war. Information warfare does not

stop here. A step ahead is the plans afoot in the world to develop psychotronic and psychophysical weapon systems. It will be a new strategic arm unique in information warfare. The Russians made this apprehension in 2000.¹⁴ Such weapons attack the individual psychosomatically, block the freedom of will at a subliminal level, damage the ability for political, cultural and social self identification, and manipulate societal consciousness that can lead to the destruction of collective identity. In other words, the citizens will turn into plain zombies under the attack of psychophysical weapons. The Russian view is that such weapons are already there and are being used without formal declaration of war.¹⁵ They called for national and international legislation on norms aimed “at the defence of human psyche against subliminal, destructive and informational manipulations.”¹⁶ Such activity that may turn information warfare into psychotronic warfare is a matter of serious concern among the prospective threat attractors.¹⁷ Net-centric warfare (NCW) is the latest theme on effective use of information in winning a war. It needs constant interaction between the military and the industry. NCW is the integration of two Cs—computers and communication—in the C⁴ISR.

PROTECTING INFORMATION

There are means and devices designed to guard information against a broad range of hazards, including crime, fire, accidents, espionage, sabotage, subversion and attack. The security system will depend upon the hazard faced by a particular information—leak, compromise, destruction, counterfeiting, deceptive defacing to misguide, etc. Anything can affect the safety of information: mismanagement, complacency, accident or a hostile deliberate attack or deceptive strategy. It is not applicable to military strategy alone. There could also be non-proprietary data, which may be treated as innocent. Often it may not be. This data could become sensitive when combined with other data already accessed by the opponent. The sensitivity of information is to be seen independently and by combining with other sensitive information in national security matters. Against this backdrop and that of futuristic information warfare, informational security leads to another aspect of the subject: ethics and protecting the human mind from remote access. Protecting information is not keeping it away from those who have the right to know. The people have the right to know because they placed the government where it is, at least in a democracy. This is the Cartesian, “I know, so I am” principle. The theories are based on an actual understanding of the constitution and legislations on the right to information. Some may say the right to know is the right to live. A democracy becomes participative when there is right to information. In the same way as shareholders of a company have access to the balance sheet the public should have access to government reports. Individuals can have their own requirement of knowing information. Handling information effectively can also control the grapevine and arrest rumour mills. This is the positive side of sharing information that encourages democratic participation.

INFORMATION TRAFFICKING

Information trafficking is a flourishing trade. It may not be unacceptable from the morality point of view, when a third party “provides” information about a hiding fugitive to the law enforcers. It is acceptable when the state pays the “informer” a previously promised sum. There are professional fugitive hunters in the world whose services are requisitioned by government agencies on a consideration. But what happens to a society when the informer is paid by the fugitive or a terrorist to pass information on the movement of law enforcement and other security agencies? Here the consideration may be money or fear-induced insecurity under reverse information.

The tribe of information traffickers have thrived since ancient days. Today, one of the challenges of informational security is to protect information from information traffickers. Traffickers collect and sell information for profit to interested parties. It could even be outsourced intelligence. This has given a new dimension to espionage and thereby, to intelligence. Tourists, adventurers, officials, business employees, diplomats or anybody who is somebody with respect to information available with them may find a useful buyer for it. It could be an underwater profile, magnetic resonance data of the seabed, archaeological finding, government policy file, insensitive documents that may be sensitive in combination with other information, communication, electronic signatures, radar ranges, underwater salinity, acoustics profile, industrial reports, health details of decision-makers in government, budget forecast, research reports, etc.; anything that can sell will do. It has become a fashionable business with attractive legal cleavage. The business of professional lobbyists thrives on information. There is always a market for information where bounty-hunting traffickers thrive.

PSYCHOLOGICAL OPERATIONS AND INFORMATION

Psychological operation (PSYOPS) is manipulating information to achieve certain objectives. The objectives could be to confound the target community and drag them away from reality to a situation that is favorable to the initiator. Psychological warfare is an activity within the spectrum of information warfare, though it is seen differently from the way it is conducted. Psychological operations and other information warfare tactics are supplementary to the activities related to the identified elements of national security. That is why information warfare including psychological operations are at the lower end of the spectrum of conflict and can be waged even before a war is fought, whether in a declared situation or under proxy. Often, it is silent. Most psychological changes take place without being noticed and inadvertently, by strayed information, cultural shifts and human relations across ethnic boundaries—all within the human mind.

Psychological warfare is not a new concept. Sun Tzu mentioned it in *The Art of War*. Psyops was practiced by ancient Rome, the Mongols of the middle ages

and the European colonial empires of the nineteenth century.¹⁸ Psyops was basically the strength of the weak in those days, like the way it is used by militants today. Terrorism, in a way, is psychological warfare against a target society by manipulated engendering of disturbing information. It is psycho terror most of the time. It is cheap and extremely effective. Informational security can contain psycho terror to a considerable extent and thereby has the capability of countering terrorism. Unfortunately, this area lacks attention of the governments. There is a need for acceptance of communities by each other rather than dividing, which from the point of informational security should, though very gradually, wean away fundamentalism and ethnic violence. It can be studied by bio-modelling. Today, those other than the terrorists who practice psyops have one specific objective in mind, though not usually practicable: zero casualties among their own forces. There are also questions of ethics in psyops. The media too plays a major role. The reach of the media with its embedded journalists is gradually increasing. People are attentive to the media. It is only a matter of time that the media will be there for everyone, swaying emotions on real-time. Controlled media management of information may call for a different approach compared to what it is today. Media can swing psyops. Psyops have often been talked about as propaganda war that included broadcasts, dropping of pamphlets over the enemy territory, manipulating the media and basically all aspects of information transmission. It will be successful only if the planned activity succeeds in modifying the behaviour of the target audience. Against hostile groups, psyops is aimed at demoralising, confusing and disorienting their way of thinking and thereby, behaviour.

MEDIA AND INFORMATIONAL SECURITY

Media is dreaded by some and pampered by others; a few are indifferent. Someone important made a statement years ago that today's newspapers were nothing but the fish wraps of tomorrow, or something to that effect. May be. But the importance of the media lies elsewhere. It handles information to communicate to a universal audience. The media belongs to the free world and it demands freedom for executing its functions: to inform, educate and entertain. The importance of information management for the media depends upon the role it has assigned to itself from among the three. The role of the media in a free society is to support governance towards national security maximisation, because national security is everyone's business. It is for this reason that the media is sometimes referred to as the fourth branch of the government (the fourth estate). Media distortion will affect informational security. The media is a link between the people and public information besides its value for education, entertainment and all other nitty-gritty's of information. The media-national security combination is for optimising informational security for NS_{\max} . The media can lose its credibility when it turns hostile to information and corrupt it. The media has the right to scrutinise the government and its officials for their performance on behalf of the people. It is an

arm of governance, especially where the government belongs to the people. Media can do justice to informational security in its idyllic sense with impunity. Freedom of speech is more or less a decree embedded in the constitution, especially in a democracy. The press is the guardian of this freedom. To that extent, freedom of the press is the freedom of speech that the citizens enjoy. At the same time, it is wrong to conclude that a media has to limit its boundary within the limits of a specific nation. Its responsibility is universal. If that is so, it needs to respect the national governments when information is shared with the people. This is what the ethics of the press is about. It is simply a question of informational security. Protecting information means presenting it clearly provided it can be presented. It is not banning information or looking it up unless that is necessary in the overall national security requirement. For this, the media should function in the appreciated national security centric system, not as an instrument of profit, fame or power outside it. The media has its obligations within its right for freedom and as the informal wing of a system of governance that accepts it. It is not a constitutional allocation. The media is obliged to discourage abuse of power. Does it mean it is a watchdog? If so, who will watch the press? *Quis custodiet ipsos custodes?* No one. In such cases the freedom of the media itself is the watchdog over the press and it is this freedom that the media has to invoke to ensure informational security. The media is also subject to scrutiny of the media. The power of the media is not as formidable as it is projected to be. In some sense, it is highly regulated by various other organs that have been in interplay with the management of information within the national system. Competition and affiliations within the system have taken away most of the power from the media. That leads to the statement that the news gets rotten and forgotten very fast. If the news does not sell, then the media itself may be forgotten, unless of course, it becomes a habit. Citizens turn the wheel, though the media has the uncanny knack of habit-forming. The media has grown over the years to mind-boggling strength and variety. It has gone even beyond sheer information suppliers. It can accelerate growth as well as decline. It can induce a feeling of security among people and also frighten them to the hilt. The media is no more independent. They have activity profiles as the mouthpiece of something or someone. Media can be government based, political party or religious sentiments affiliated, business house related, special interest promoter, etc. Under such circumstances it is difficult for the employees of the media to rely on the principles of informational security beyond the authorisation of the system they belong to, though there are checks and balances at every step. Media can misinform, especially in the narrow lanes of non-independent individualism. In spite of the problems that it may face, the existence of a free media is an indicator of a nation's strength. The freedom enterprise flourishes where the media is free and limited by itself as the guarantor of information. Can media have a body to regulate its activities? No. Such a body could strangle its freedom and thereby informational security. Restrictions on the freedom of press could be extremely damaging to national security. A free state does not censor media. The

media has to regulate itself because it is also bound by the constitution and the well-being of people. The people represent the body that can regulate the media, that too under the maxim of free media. Media as one of the pillars of national governance is an accepted fact since long—an enviable status indeed. There is a tacit understanding and acceptance that it is competent to induce checks and balances in a society for its well-being. The arguments in favour of the media in informational security are changing times, opportunity to reach out, intellectualism, investigative reporting and nationalism. Those against it are controversy, false reporting, hasty reporting, criticism and the feeling that the media does not generally reflect the voice of the people, but of its owners with vested interests.

CONCLUSION

Information management is vital for national security efforts under people participation towards NS_{max}. Informational security maximisation depends on the success of the government and its agencies in containing the information that are prejudicial to governance and national interest and not withholding information that are required to be known by the people in its correct perspective for ensuring participation. Notwithstanding these two processes, how information is used by the governments to overcome threats to national security—preventing and containing rumours, establishing effective intelligence machinery, psyops against sources of human threat, regulating information overload, etc.—also matters. In a well-governed system, people have freedom of information within acceptable limits. Information is the pathway in the knowledge world but the irony is that, in spite of advancements in knowledge acquisition and dissemination, there are also people groping in the dark alleys of ignorance and knowledge deficit. They are the majority; they are the world. The entry of the world into the knowledge era will only occur when the entire population is benefited by knowledge. From the viewpoint of informational security, the world has not even reached the twilight zone before the dawn of knowledge-based living. The horizon is still dark.

Notes

¹ *Encyclopaedia Britannica, Ultimate Reference Suite*, CD-ROM. 2004,

² Latin Rene Descartes (1596–1650) was a French mathematician, scientist and philosopher who studied law in the beginning. He was one of the first to oppose scholastic Aristotelianism. His forte lay in doubting knowledge based on authority, the senses and reason, and then finding certainty in the intuition that, *when he is thinking, he exists*. His famous statement “*I think, so I exist*”, the famous *Cogito ergo sum*, or *Je pense donc je suis*, explains his view of existence. He developed a dualistic system in which he distinguished radically between mind, the essence of which is thinking, and matter, the essence of which is extension in three dimensions—metaphysical (the root), physics (the trunk) and sciences (the branches). Descartes’ metaphysical system is intuitionist, derived by reason from innate ideas, but his physics and physiology, based on sensory knowledge, are mechanistic and empiricist.

³ Robert Audi (ed.), *The Cambridge Dictionary of Philosophy*, The Cambridge University Press, Cambridge, 1999, p. 435.

⁴ *Encyclopaedia Britannica*, n. 1.

⁵ Fritjof Capra, *The Turning Point: Science, Society and the Rising Culture*, Flamingo, London, 1988, p. 454.

⁶ The statement “effective and responsive government” is important in national security governance.

⁷ “Beyond,” *Discovery Channel*, 12 March 2001.

⁸ Khandeparker, B.G. “Keeping the People Informed,” A Letter to the Editor, *The Navhind Times*, Goa, 24 August 2001, p. 8.

⁹ Shilpa Paleri, *Knowledge Management*, Unpublished Presentation, K.J. Somaiya Institute of Management Studies and Research, August 2001.

¹⁰ Prabhakaran Paleri, *Role of the Cost Guard in the Maritime Security of India*, Knowledge World, New Delhi, 2004, pp. 73–74.

¹¹ “Terror Tapes overwhelm FBI,” *Hindustan Times*, New Delhi, 23 September 2004, p. 23.

¹² Paleri, n. 10.

¹³ Donald L. Horowitz, *The Deadly Ethnic Riot*, Oxford University Press, New Delhi, 2002, p. 74.

¹⁴ Mojimir Babacek, “Electromagnetic and Informational Weapons: the Remote Manipulation of the Human Brain,” *Aerospace and Marine International*, Vol. 1, Issue No. 16, 22 August 2004, pp. 16–18.

¹⁵ *Ibid.*

¹⁶ *Ibid.*

¹⁷ *Ibid.*

¹⁸ Carnes Lord and Frank R. Barnett (eds), *Political Warfare and Psychological Operations*, National Defence University Press, Washington DC, 1989, p. xii.

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Food Security

Food security is not only precluding hunger, but also managing nutrition.

Colourful and pompous at one end, and miserable and abject at the other—that is how food relates to humans. Emperors of the powerful middle earths engaged in orgies of ingestion in lives “well” spent in conquest, sorcery, lust and killing. The powerful ate, ate and ate again punctuated by carnal escapades before their untimely degradation in the graveyards of yore. Food is associated with birth, life, death and all the intermediaries—ceremonies, marriage, victory, trauma, happy hours, sex, boredom, etc. At the other end, starvation and malnutrition make people forget the purpose of their birth—to continuously gobble food and multiply as *homo-economicus*. Those who starve eat everything—toxic seeds, mud, clay, stones, insects, rodents, creepy crawlies, and anything that flies (except aeroplanes). They may not know whether to eat a banana with the peel or not unless they read the owner’s manual. There are worlds out there where people have not seen food, which others eat. This is an expression in duality—applicable both ways. Millions do not have access to food and nutrition in a world that has enough to feed all.

FOOD SECURITY: THE TENTH ELEMENT

Starvation is an anomaly in a living system. “Life is there because it has ‘food’ to sustain it”, is the law. If that is so, the absence of food is a freaky situation. Also, food security is not all about busting starvation. It has to be seen from the point of view of nutrition related health security. It is a challenge to planners engaged in keeping people healthy. In some parts of the economic world, the term “nutrition security” is applied separately. It is part of food security. The nutritional well-being of the people is the primary objective of food security. Preventing hunger is entrenched in it. It is stated in the constitutions of many countries. Article 47 of the Constitution of India states, *Raising the level of nutrition, standard of living and improvement of public health are the primary duties of the State.*¹ Combating malnutrition is different from combating hunger.² Nutrition enhancement of the population is the correct approach to food security.

FOOD—THE BASIC NEED

Food comes from agriculture, domesticated animals and natural harvesting—in the croplands, forests and oceans. Sufficiency in food means more than just farming. The capability requirement for providing sufficiency in the food system in a country is research, technology, regulatory measures, food processing, water management, fertiliser management, trade, transportation, distribution and other infrastructure. The World Development Report, 1986 defines food security as *access to all people at all times to enough food for an active, healthy life*. The FAO (1983) defines it as *ensuring that all people at all times have both physical and economic access to the basic food they need*. Another definition (Staatz, 1990) is that food security is *the ability to assure, on a long-term basis, that the food system provides the total population access to a timely, reliable and nutritionally adequate supply of food*.³ According to the Rome Declaration on world food security, poverty is a major cause of food insecurity and sustainable progress in poverty eradication is critical to improve access to food.⁴ More than 800 million people in the world, particularly in developing countries, do not have enough food to meet their basic nutritional needs (2001). The cause is not shortage of food, but lack of access to it for many. Supply and distribution constraints, continuing inadequacy of household incomes to purchase food, instability of supply and demand, and natural and human-induced disasters contribute to it. The key areas in food security are agriculture (including livestock), division of labour, environment, forestry, nutrition, fisheries, rural economics, population, education and communication. Hunger can remain even in a strong economy. In the United States nearly 20 per cent of all children live in food-insecure or deformed households.⁵ About five per cent of the children live in households where at least one individual experienced hunger. The general trend of food insecurity is on the increase, according to a survey.⁶ According to Ismail Serageldin, Chairman of the Consultative Group on International Agricultural Research and Vice President of Special Programmes of the World Bank, around 40,000 people worldwide die from hunger related causes every day.⁷ Factors that affect food security are many.

FOOD INSECURITY—THE CURSE OF THE AFFLUENT WORLD

Food insecurity is historically linked with population. But in the real sense, there is food for all. Absence of food is a matter of accessibility, limited by location and income. Among 6.5 billion people in the world, i.e. about 12.5 per cent lack access to proper food (2004). The World Food Summits of 1996 and 2002 organised by the FAO reaffirmed its objective of halving the number of hungry people by 2015.⁸ The FAO is not sure that it can achieve this goal unless the political will and the energy of civil society are mobilised effectively. There is a difference between lack of food and lack of access to food. The problems are complex even for a developed nation, especially when it means distribution of nutritionally rich food. While food rots in one corner, starvation deaths are common in another. Starvation is

different from poverty. Poverty may still yield food but starvation induces a coping mechanism.⁹ Lives of millions are ruled by coping behaviour in food habits. Even animals have a fairly good chance of getting what they want to eat. Poignant stories emanate from various parts of the world especially from Africa, the cradle of human life and the world's richest region for resources. Sudan is the first to experience genocide in the 21st century. In Africa (2004), over 100,000 Sudanese who fled as refugees face extreme starvation. They eat up even the toxic mukhet berries. In Haiti's slums, there are doughs dried in the sun with ingredients such as salt, water and dirt. In Malawi, children sell skewers of roasted mice on the roadside. Grasshoppers eat crops and the people eat grasshoppers in Mozambique. There are people in Ghana who wrestle with ants to collect the tiny grains that may carry allergens. In Liberia, during the civil war in 1989, almost all animals in the zoo vanished. Dogs and cats disappeared from streets. In Kuito, Angola, in early 1990, a family survived a few more days by drinking leather soup from furniture leather after removing the tanning chemicals by soaking in water. But the victims of the Soviet famine of 1930 have eaten furniture itself. In Eritrea, women strap flat stones to their stomachs to lessen pangs of hunger. In the starving world, there are mothers who boil stones to cheat their children by making them believe the food is almost ready and wait for the children to fall asleep in the meantime.¹⁰ The lullaby of hunger resonates in the boiling stones. In Zambia, balls of edible clay are sold in markets. In Angola, black dirt called "black salt" is sprinkled on cold food. The dirt biscuits of Haiti are called *argile* meaning clay or *terre* meaning earth. Like the mice in Malawi, *argile* is a staple food of the very poor. Making them has been a regular business for years in starving Haiti. And all over the world these coping foods aimed at the poor are available in one form or another. They are not foods, but coping meals that control the hunger pangs of the food converts.¹¹ For how long can the world and its governments be indifferent? It is said that in a controlled environment, people can starve for about 40 days. But famine is not a controlled environment. People could die early. This is an irony of fate in a world where the rich desists from eating rich foods and the UN declares obesity as a global threat. In many places in the world, millions starve for calories and proteins. Food historians argue that since 1500 no famine was caused by lack of food.¹² In many cases, some political force stops food from arriving. Examples are: British indifference during the Irish potato famine, Maoist crushing of peasants in the Great Leap Forward in China, clan warfare closing ports in Somalia,¹³ onions vanishing from the markets during one of the election seasons in Maharashtra, India, etc. Food security policy is aimed at alleviating hunger and improving nourishment. According to findings, in the last decade of 20th century, a large chunk of the population in developing countries has been freed from hunger under the FAO programmes. At the same time, there are countries that have recorded increases in the number of people who are not free from hunger.¹⁴ During this decade there were 843 million undernourished people in the world—798 million in developing countries, 34 million in the countries in transition and 11 million

in developed countries. In October 2003, 38 countries were reported to be facing serious food shortages requiring urgent assistance—23 in Africa, eight in Asia, five in Latin America and two in Europe.¹⁵ The causes of food insecurity are many:

- (a) Food emergencies caused due to war, insurgency, militancy, etc.
- (b) Natural disasters: drought, floods, cyclones, earthquakes, etc.
- (c) Ethnic riots
- (d) Water depletion
- (e) Distribution failure
- (f) Diseases, including trans-boundary maladies
- (g) Pests including locust invasions internal and cross border
- (h) Flaws in agricultural land appropriation

A large part of the populations that live in stomach grinding poverty is mostly rural. The reason is disparity in distribution of income and food, controlled by a complex array of factors; population growth and distribution, environmental changes, economic and political systems, ethics and belief systems, climate change, trade barriers, land availability, research and development, science and technology, legislative measures and a host of other factors are involved. The world food problem indicators can be misinterpreted if the standard food requirement per individual is taken as that consumed normally by people of a developed country. Food standards and the nature of it, besides the calorific value, vary from region to region, country to country and community to community for optimum food security. The policies should be based on the determined food standards and the expected quality of life under food security. Poor and poverty stricken people are those who are incapable of growing or buying food for their subsistence. The solutions for resolving food insecurity had been thought out much earlier and were seriously considered by governments. Some of the plans promoted by the developed world in the past are listed in Table 16.1.

TABLE 16.1 Important Poverty Alleviation Plans

Plans	Year
Marshall plan	1947
World Bank plans	1950
Volunteerism	1961
CIA pushed plans	1969
Mega loans	1973
Philanthropy	1985
US nation building	1992
Globalisation	1994
US nation building II	2001
Monetary concessions	2002

While some of these plans were partially successful, most of them failed. The plans were ideologically motivated attempts that included food security as one of the identified objectives. In fact, in all such plans the common factors were direct and indirect involvement of the United States as an emerging superpower and the objective of containing the expansion of communism and communist ideology in a world that was reeling under poverty and unemployment subsequent to the world wars and economic insecurity. The situation was ripe for people to be attracted by communist ideologies, another form of social structure where the party owns the state that owns the nation and its people. The state is expected to provide primarily the basic physical needs to its people. The plans of the West however, provided food for the poor in many parts of the world in spite of the diverse agenda behind it. There was always volunteerism, philanthropism and other projects that fed the poor. Today, the world has come together under the UN. Alleviating hunger and malnutrition still remains a distant dream. From the socio-psychological standpoint, poverty should be based on the inability to satisfy the primary needs in a human being. To that extent, a human who cannot buy food is poor. The rest is relativism with respect to governance in food security. To overcome the difficulty in choosing the poverty paradigm, governments device special measures like social security, food coupons or a measurable line such as the poverty line as the standard for subsistence food allowance. Being below the identified poverty line makes one eligible to be considered as poor, and get the benefits from the government on a natural scale that may vary from time to time. It is an irony of sorts that among those who suffer from food insecurity are the agricultural and similar food-producing workers in most parts of the world. That includes traditional and other small-time marine and fresh water fishers also. Compared to them, other industrial workers and labourers are better off. Uneven distribution or lack of food is the basis of food insecurity in a nation, society and even within a family. It is an interesting find. It shows the interplay of belief systems in a society or smaller formal groups like a family. In a book authored by a once successful businessperson, who at the age of seven was the only earning member of the poor family, it has been mentioned how his poor parents struggled to bring him up. He sold newspapers on the street and reached home late. His mother would be waiting to feed him with the meagre food she could cook for the day. The rest of the family, especially the mother and sisters would partially starve saving their food for him, the only earning member of the family. Though there are many in the world that live like this but are not fortunate enough to become industrial tycoons like him, the story talks about it all¹⁶—how societies and families distribute available food under certain belief systems and vagaries of life. Some of the food sharing methods in a poor family may be argued as very pragmatic. People are exploited in the name of food. Landlords, moneylenders, religious establishments, communal organisations, political organisations, criminal syndicates, etc., thrive on food insecurity by providing food to the poor and slowly getting them into their mould. Food is an object of attraction. Intricacies of food insecurity are hidden not only

in the physical health of the society, but also in the way it affects the social system. This brings out the reasons why developed nations too suffer from food insecurity. The cause could be government apathy. In food insecurity, there will be country specific reasons. That is one of the reasons why the international poverty alleviation programmes in the past could not make much headway in their food security objectives. It is also wrong to believe that food insecurity will be resolved when people earn more. More earnings mean more consumption. That could also mean shortage of food. Eating segments could find food commodities more expensive. Food insecurity is not to be misconstrued for food crisis. Food crisis is food insecurity in a crisis situation. Often, the crisis is due to other factors rather than food insecurity. Food crisis can be seen in bio-models. For example, there could be a food crisis on a railway accident site in a remote area. A flash flood can cause a food crisis in a locality or region. A food insecure nation is vulnerable to geostrategic exploitation. Food insecurity is a serious geostrategic threat attractor. It attracts aid from the powerful with a motive. An aid with strings attached can cause more damage than it can undo. Nations are cautious today. The UN too has dark corners, though different, like its alleged sleazy involvement in the Oil for Food Programme in Iraq in the late nineties.

FOOD INSECURITY AND BEHAVIOUR

Food insecurity is often associated with suicide and other individual and group behaviour patterns especially in peasant societies. But more than that, it could be a major cause for riots. The French Revolution that led to peoples' rule bred from a lack of bread, among others. Violence erupts among marine fishers of the world. Naxalist violence in India originated from agricultural fields. It started when the poor but hard-line farmers took arms against land owners under the influence of communist ideology after the Party split in 1964. There were serious food riots in the eighteenth and nineteenth century Western Europe. There are correlations between food prices and food riots. The mute form of disobedient behaviour today where food is an instrument is the hunger strike (refusal to eat in protest) propagated by Gandhi during his non-violent movement against the colonial British. Food riots could be for varied reasons. "Moral economy" is one of them.¹⁷ Jettisoning tea in the famous Boston Tea Party¹⁸ had its cause in nationalism. Food riots continued in many parts of Germany even after prices were stabilised. Food scarcity could ignite violence and other patterns of intense behaviour in a restless community.¹⁹ A government will lose an election in a democracy if food is pricey.

FOOD PRODUCTION—TRENDS AND PERSPECTIVES

Food production absorbs multiple resources such as land, soil, fertilisers, water, plant, animal and energy resources. Resource use also contributes to environmental pollution. Fertiliser is one such pollutant. Urbanisation and industrialisation reduces cropland area. Global cereal production for 2003–04 is evaluated at

1,874 million tonnes.²⁰ Cereals are the base diet of people that should always be available in reserve stock supported by an effective distribution system. The agricultural commodity prices are indices of food security; the higher the prices, the larger is the insecurity on a demand and supply scale. Livestock production in the world is growing significantly faster than agriculture as a whole, and accounts for 45.2 per cent of total agricultural GDP according to the FAO. World trade in fish and fish products has increased (2003) by eight per cent since 1998. Forest products also made a significant contribution to international trade. However, the FAO feels that there is much to be done to balance the trade. The director-general of the FAO feels that multilateral negotiations are indispensable for achieving fairer solutions.²¹ Population increase will seriously affect food supply. 8.5 billion people, projected by 2025, will require as much food as has been produced since agriculture began 10,000 years ago. Tragedy lurks in the lives of many families that subsist on their employment on farm fields. Many farmers commit suicide in India under the burden of debts and harassment from moneylenders.²² Andhra Pradesh in India, where such cases are reported, is a state that had witnessed unprecedented economic upliftment through the information technology revolution. It is unbelievable that there is a section of society who cannot find their next meal in a place like that. In the first half of 2004 about 2,000 to 3,000 farmers in the state have reportedly ended their lives under a mounting debt burden that accumulated as a result of parching heat waves over their croplands.²³ The spate of suicides became a political issue that resulted in the routing of a government in an election (2004) in spite of its much-touted flagging of the information technology revolution. Bill Gates, the chairman of one of the world's largest information technology companies, visited the state and showered praises on the government for its bold executive decisions and determination. But the people had a different view; they threw the government into the launderette. That is democracy. Suicidal behaviour may have answers rooted in human psychology but under common belief, the act is attributed to poverty. *Prima facie* the cause is attributed to parched land and crushing debts that shrink self-esteem. The debts are to banks and moneylenders. Compound interests to the loans compound the tragedy. The debts are marks of shame for a farmer. The lenders exploit the shame to psychologically torture the farmer and his family to get the money back with heavy interest. Death comes by swallowing pesticides. For some observers, death is not directly attributable to poverty, but honour. The ignominy associated with auctioning of their land, etc., was stated to be unbearable to the farmers. The situation becomes worse when interested parties fan the fire. There are also myths associated with food production. One such myth that has been reported in the media is about the direct impact of the monsoon on food production. While on one hand, India is considered to be a monsoon economy,²⁴ a study showed that according to figures, food grain production does not depend only on rainfall.²⁵ In India, the experience of the past 15 years shows some interesting variations (Table 16.2).²⁶ There was about 19 per cent depletion of monsoon in 1987 and

2002 but the food production rates varied. In 1987, production was 140 million tonnes. Production increased by 31 per cent to 184 million tonnes in 2002. The two years when compared 15 years later could have the factors of advancement of farm technology and other calculation errors. The table shows a lack of direct correlation between the monsoon and agricultural production. Monsoon precipitation was 100 per cent in 1993 and 1995 based on the long-term average of 88 cms. But food grain production, which was 184 million tonnes in 1993, dropped by four million tonnes in 1995.²⁷ The bottom line is that, in most of the countries agriculture is a high-risk prone economic activity. It needs resilience.

TABLE 16.2 The Monsoon and Food Grain Production (India)

<i>Year</i>	<i>Monsoon rainfall (% of normal)</i>	<i>Food grain output (million tonnes)</i>
1987	81	140
1988	119	170
1989	101	171
1990	106	176
1991	91	168
1992	93	179
1993	100	184
1994	110	91
1995	100	180
1996	103	199
1997	102	192
1998	105	203
1999	96	209
2000	92	196
2001	98	212
2002	81	184

Marine fisheries and other marine biota (sea weeds, etc.) used as food and nutritional intakes are major sources of income for an entirely different section of the society—the fishers and the sea farmers. Their lives too are linked with the vagaries of existence. Over-fishing and marine environmental degradation have dried up most of the fishing grounds. While the demand for fish is increasing, the supply chain gets interrupted when the catch is low. Many traditional fishers in the world live in poverty. Fish farming, especially shrimp farming in various parts of the globe has done more damage to the ecosystems than what is gained in food

products. Damage to the ecosystem further affects food production. Clearing mangrove grounds for shrimp farming adversely affects the ecosystems and the coastline. It is visible in the Philippines. Most of the countries are unable to manage fisheries in their EEZ effectively and without conflicts. According to the UNCLOS, coastal states have obligations for assessment of fish stocks, allocation of surplus stocks to national needs to third parties and conservation of fisheries and fishery habitats. Allocation of surplus stocks to third parties is an obligation that is unheard in land farming. If the coastal state falls short of capacity to harvest the entire allowable catch, it is required to provide access to the surplus of the allowable catch to other states. Based on the outcome of the International Conference on Responsible Fishing in Cancun, Mexico in 1992, the FAO prepared a code of conduct for responsible fisheries (FISHCODE). The FAO advocates a precautionary approach to reduce the risk of damage to the marine environment and living aquatic resources, and advises taking the best scientific guidance and decisions under minimised uncertainty, errors and risk.

COMBATING FOOD INSECURITY

One of the issues in combating food insecurity is poverty reduction, especially among the vulnerable and marginalised groups. The government has to reach out to the poorest of the poor and provide them with opportunities. Providing micro-finance and technology will supplement their efforts. Food security can be met by a green revolution that extends from soil characteristics to value addition. This could make up for the fall in arable land. Conflicts, terrorism, corruption and environmental degradation also contribute significantly to food insecurity. Food security calls for sustainable management of natural resources, elimination of unsustainable patterns of consumption and production and early stabilisation of population. There is also a need for gender equality. In spite of the fact that women contribute substantially to food security in rural areas, they have been subjected to inequality in nutritional intake in many parts of the world. In theory, food insecurity can be either chronic or transitory.²⁸ Chronic food insecurity is persistent food inadequacy caused by the inability of people to acquire food that is needed for their subsistence. It is rooted in poverty. Transitory food insecurity is a temporary drop in food availability. While managing food insecurity, it is essential to clearly understand in definite terms whether it is a chronic or transitory issue. Solutions may vary and have to be compatible with the problem, not aimed at political or vested interests. Efforts to combat food insecurity should consider limitations in food production. Increased input of water, fertilisers and pesticides does not seem to be yielding a higher rate of growth. Better strains and genomic approach may be a solution but are experimental and shrouded in controversies related to ethical aspects. Coupled with this are the human health concerns related to food production and security. Animal diseases like foot-and-mouth disease, swine fever, Rift Valley fever, bird flu, etc., have caused enough alarm in health security.

A correct mix of traditional and industrialised methods could allow containing ecological limitations as well as damages to bio-diversity. The answer for sustainable agriculture may lie in many activities: controlling water use, growing perennial crops, minimising soil erosion, preventing salination and water logging, controlling flood and drought, preparing for flash floods, using organic fertilisers, resorting to biological pest control rather than using chemicals, government support to sustainable farming, economic approach to reduce poverty, use of available land resources judiciously, community endorsed farming, high-yielding plant use, controlling demographic shifts that may cause food problems, etc. Respecting and complying with intellectual property rights is a matter of global food ethics. Though many will see such a move as being restrictive, it has the possibility to encourage original research. As in industrial production, technology is also the bedrock for farm improvement. Research in the areas of agricultural genetics, biotech, space, radioisotopes, etc., are some of the revolutionary areas for improving food production. Development of post-harvest technologies and food processing will supplement production and preservation process. The ideal way is to combine technology with traditional methods. Food insecurity can be eliminated on a very gradual scale by national and international cooperation and through development plans by determined governments. A large country with high population growth needs huge reserves to meet the lean period. Coupled with reserve stock, a good distribution system will support the efforts. Often this is where the system fails. There are arguments that only genetically modified (GM) food will reduce the gap between food production and the growing population. There is also concern over their safety that may outweigh their benefits.²⁹ It can be seen from the crop burnings in India, protest against the WTO and World Bank meetings and plunging share prices of biotech firms in the West.³⁰ GM foods have the potential to help overcome the problem of food shortages and malnutrition in developing countries. However, it is essential to ensure safety to health and environment.³¹ The norms of research will need careful evaluation and the constant attention of governments. Irrespective of industrialisation, agriculture economy remains the backbone of global economy. The subliminal suggestion in the psyche of food security is quite obviously, to strengthen food production as a resourceful and forceful sector in all aspects. In a monsoon economy the rains have to be harvested scientifically for irrigation and creating lakes, rivers and reservoirs. Tapping the mountain flow is also a pattern of water harvesting. Another method is glacier harvest. A glacier once harvested will rebuild itself for another. Scientific studies can lead towards these points. Certain quarters advocate linking of rivers. River linking does not produce additional water. It only leads to distribution or rather sharing it for irrigation and other purposes that may cause unexpected consequences to the ecological balance and environmental stability. Agriculture is also soil productivity. Degrading of farmlands by salinity and other factors is a matter of concern. An indicator of agricultural decline can be seen in the value addition of a farm worker when compared to an industrial worker. Alarm bells should ring if it is relatively

less. Modernisation of agriculture is the solution. The problems in agricultural productivity also come from fragmented land holdings. Research and development in food security is essential in order to develop high-yielding seeds that are pest and drought resistant and acclimatised for the particular farmlands. The impact of economic security in an agricultural economy means purchasing power. Professor Ashutosh Varshney of Notre Dame University finds that in democratic countries poverty line is higher and showed slower decline, whereas according to Amartya Sen, democracy had, without exception, abolished famine.³² This has been mentioned in Chapter 8—Economic Security. Table 16.3 shows the poverty line status of some of the consistent democracies in the early 1990s.³³

TABLE 16.3 Poverty in Democracies (Early 1990s)

Country	Population Per Cent below Poverty Line
India	35
Sri Lanka	25
Philippines	37.5
Botswana (1986)	33
Jamaica	34.2
Trinidad	21
Costa Rica	22
Venezuela	23

Managing food insecurity involves many factors at the macro level.

- (a) *Ecological Considerations*—Managing bio-diversity and ecosystems shall provide protection to plant and animal resources over land and water including the seas. Forests require protection by various means including application of biotechnology and genetic modification for sustenance.
- (b) *Agricultural Production*—Improving agricultural production in the rural sector along with alternate employment to farm workers during the lean period is essential for rural wealth generation.
- (c) *Weaker Systems and Habitats*—Identifying vulnerable groups and indigenous peoples who need special care under food security schemes, and developing organisations to meet their interests and improving their habitats and living conditions is another area for attention.
- (d) *Water Resources*—Management of water resources to increase productivity includes water harvesting, control of irrigation and drainage works, rehabilitating large irrigation schemes, restoring rivers and canals, distributing water through irrigation canals and monitoring trends to

warn the community against drought and other disasters that may affect food production. Water management techniques for developing desalination and wastewater recycling and water purification are other areas.

- (e) *Trade Barriers*—Managing trade barriers with international cooperation is a geostrategic concept that impacts on food security.
- (f) *Quality Assurance*—Assuring food quality and safety and consumer protection will require appropriate legislative and enforcement measures.
- (g) *Health*—Health conditions of agricultural workers will impact food production in peasant societies. Most of them may have limited access to health products and practices. The health of the agricultural workers is affected in many parts of the world. The agricultural dimension of health has to be studied for implementing effective remedial measures.
- (h) *Food Related Disorders*—Food security also means preventing the toxic aspects of food. Obesity, diabetes, cardio-vascular diseases, certain types of cancer and other yet to be identified physical ailments are associated with food habits. Such diseases caused by an abundance of “bad” food co-exist with malnutrition in the society.
- (i) *Sustainable Development of Agricultural Areas*—Agricultural areas include rural areas. Their development and preventing arable land getting converted for other purposes or getting damaged by pollution making them unfit for cultivation, etc. are part of food security management. Agricultural and rural development programmes should be conducive for sustainable development.
- (j) *Conditions of Poor*—The asset base of the poor has to be strengthened to provide them with the capability to maintain sustainable development of agriculture with the development programmes. This means providing them facilities and resources besides assistance in distribution.
- (k) *Food Distribution*—A distribution system that can reach the needy at the right time is very essential. Failure in distribution is the major cause of food insecurity in many countries.
- (l) *Surplus and Reserves in Food Stock*—Effective surplus stock for reserves is a must to tide over emergent situation induced by war and disasters.
- (m) *Marketing Support*—Assistance in marketing the product for the best price could actually improve the purchasing capability and asset accumulation of the underprivileged farmers.
- (n) *Wage Structure*—Finding provision for decent wages for farm workers is necessary to improve their standards and increasing their yield for work. The value chain should move both in farm products and agro-industries. Farmers should produce for their needs and market demands. This is achieved by technology, credit and better infrastructure for distribution.

- (o) *Support Subsidies*—Subsidies, both direct and indirect, will help mostly large farmers. The system should serve small farmers. It is important to see that the benefits should not be for those who are already in the upper strata unless meant for competition in the world market with collateral benefits for economic security.
- (p) *Technology*—Technology development and access to it is important for productivity. At the higher end of it is genetic modification. According to the WHO, genetically modified food is not harmful.³⁴ A large part of the world is already consuming such foods. The stigma could be removed by careful research and information transparency.
- (q) *Infrastructure*—Agricultural infrastructure for transportation, power, water and ancillaries is part of development in food security management. Though investment will be high, the returns will be equally challenging.
- (r) *Approach Principles*—One of the principles of management in food security is to strengthen from the bottom up. Normally the method followed by governments is to start from the poverty line downwards. It is presumed that everyone under the poverty line is equally handicapped. It need not be so. There is a hierarchy down there where the people are still divided. Besides, the people just above and close to the poverty line are also more or less equally unfortunate. They are not considered while sweeping below the poverty line. That will make them weaker than the line just below them, who are under care, in course of time. So, while the line just below the poverty line is uplifted, the one just above slips down keeping the line more or less at the same level. This is one of the reasons why, in general, the poverty line does not move down in spite of the efforts by the governments. Of course, the reasons are not as simple as explained here. There are other parameters too. To overcome these difficulties, the more suitable method is to start from the bottom of the strata and move upwards clearing up the system *en route*. This eliminates the concept of poverty line that currently serves only as a convenient datum but does not stress the actual need to eliminate hunger and malnutrition (Figure 16.1). These two approaches are hypothetical. The government could experiment the sweep across further to identify the best approach path after preparing a suitable model of the poverty area—the area between the poverty line and the bottom line. It could be different for each country for optimum results. The FAO may find the approach plan in the sweep area from a global perspective incorporating the national models for poverty sweep. The preferred method is bottom up sweep (shown as sweep up in the figure). It has many advantages; one of them is that it fits all. In sweep down the poverty line is pushed downward till it is eliminated. In the sweep up, the poverty line is virtually dispersed—not pushed upwards. There is a certain degree of social upliftment here, which is an approach to eliminate most of the social

problems and not food security alone. To a certain degree, the approach advocates attending to the worst first. Though it is not a new concept, the reluctance in appreciating and practicing it in any social situation is that it calls for cutting-edge efficiency in governance. The other two approaches are easy to adapt where poverty sweep is done at random, as convenient. Though easy to apply, it will not show immediate results since the poverty line remains undisturbed even though certain pockets may have improved within.

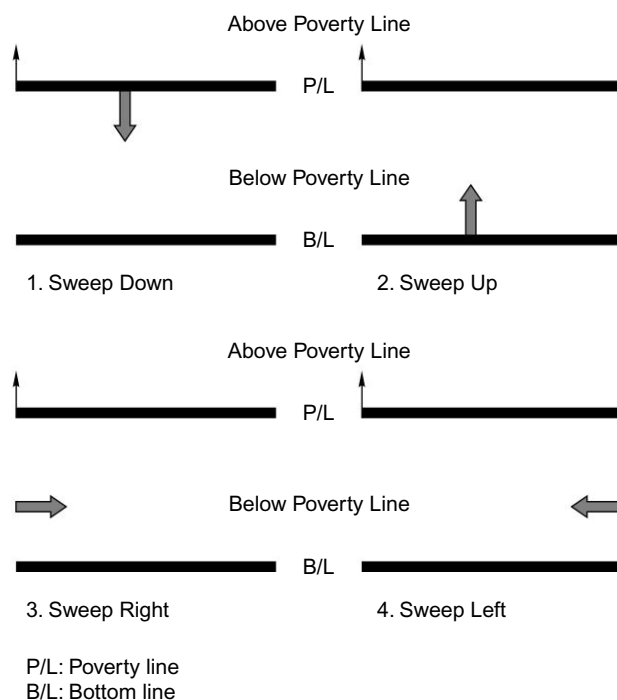


FIGURE 16.1 Sweeping Poverty—Different Approach Paths

CONCLUSION

Food security is not only about preventing hunger but also about taking care of the nutritional aspects of the population. Food insecurity can occur because, (1) food is not available, (2) food is available but not accessible to people for various reasons. The WHO has declared 16 February as World Food Day. Does it matter? Perhaps. Private–public partnerships (P^3) in governance, along with financial cooperatives and endeavours for modernising and marketing agro-products and agro-industries are needed. According to a study conducted by the ILO, a large number of employed is also below the poverty line. According to the ILO, generating more and better jobs must become the central plank of the global drive to reduce poverty.³⁵ To sum up, the three specifics—farm, forest and ocean—are

the key areas for food generation. Thereafter, it is distribution to the needy. These specifics may extend to a spectrum of logics in food security:

- Optimum arable land
- Optimum water farming area
- Rain and mountain water run-off harvesting
- Optimum forest cultivation area—in certain parts forest food resources come under the term, hill products
- Corporate involvement
- Direct sourcing with farmers; this means avoidance of middle people
- Food research
- Food production information
- Containing domestic consumption abuse
- Attractive export markets
- Diverse climate zones for variety throughout the year
- Increase in rural income, economy, and purchasing parity
- Food processing industries
- Demand for processed food
- Food preservation industries and facilities
- Food distribution facilities
- Optimum reserve stocks
- Government spending in rural based infrastructure
- Tax incentives for food production and export
- Fresh water and ocean farming
- Fisheries protection, preservation and economic exploitations

Notes

¹ Article 47 of the Constitution of India states that it is the “duty of the state to raise the level of nutrition and the standard of living and to improve public health.”

² G.M. Subba Rao, “Food for Thought,” *The Hindu, Magazine*, Coimbatore, 12 September 2004, p. 4.

³ Ruddar Datt and K.P.M. Sundaram, *Indian Economy*, S. Chand and Company Ltd., New Delhi, 2001, p. 490.

⁴ www.fao.org, “Rome Declaration on World Food Security,” World Food Summit, 13–17 November 1996, Rome, Italy, July 2001.

⁵ John (real name withheld) was one such child—a Nigerian–American whom, years back, the author tutored geography, social studies and maths as a voluntary tutor in a school in Washington DC, USA. His parents could not offer him much because of various handicaps. The kid (innocently) desired to become a drug pusher when he grew up, but at the end of the year during a farewell lunch at the Smithsonian cafeteria he confided that he wanted to become a cop. Perhaps he will be (if not already) a cop one day hunting down the drug pushers.

⁶ www.findarticles.com, National Data on Household Food Security, January 2000.

⁷ www.usinfo.state.gov, Ismail Sreageldin, “From Green Revolution to Gene Revolution,” *Economic Perspectives*, October 1999.

⁸ *www.fao.org*, n.46, 10 September 2004.

⁹ Donald G. McNeil Jr., "When Food is Not an Option, Leather Soup, Dirt Biscuits and Bugs will Do," *The New York Times* articles selected for *The Asian Age*, New Delhi, 2 June 2004, pp. 1–2.

¹⁰ *www.fao.org*, n. 4.

¹¹ Ibid.

¹² Ibid.

¹³ Ibid. An interesting note that the author observed is that no democracy with a free press has ever suffered mass starvation for prolonged periods. The media always contributed towards preventing food-induced social anarchy.

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ That he went into bankruptcy and became a fugitive for economic offences much later in his life and finally surrendered to authorities is another story, though.

¹⁷ Donald L. Horowitz, *The Deadly Ethnic Riot*, Oxford University Press, New Delhi, 2002, p. 327.

¹⁸ On 16 December 1773, American patriotic nationalists disguised as Mohawk Indians threw 342 tea chests overboard from a ship that docked in Boston Harbour as a protest against British colonialism. The tea belonged to the British East India Company. They were protesting against tax on tea as well as the British monopoly over it.

¹⁹ Horowitz, n. 17.

²⁰ *www.fao.org*, n. 4.

²¹ Ibid. Statement of the director general, FAO, Mr Jacques Diouf to the Thirty-second Session of the Conference, Rome, Italy, 29 November–10 December 2003.

²² "British Polices Blamed for Farmers Suicide in Andhra," *Hindustan Times*, New Delhi, 17 May 2005, p. 6. According to the report a study had claimed that trade reforms backed and funded by the British Government had caused an agricultural crisis in India, sparking suicides by impoverished farmers. The study as reported was by the charitable organisation, Christian Aid. In this reform, farmers were encouraged to take loan and produce cash crops for export at the expense of staple crops like rice and wheat. The farmers were unable to repay the loans owing to fluctuating global prices. They were then forced to approach unscrupulous moneylenders. Between 1999 and 2004 over 4,000 farmers committed suicide. The agencies blamed in the report had denied a link between the suicides and market reforms and argued that the reforms helped around two million people.

²³ Amy Waldman, *The New York Times*, articles selected for *The Asian Age*, New Delhi, 19 June 2004, p. 3.

²⁴ Maharaj Muthoo, "Seeding India," *Hindustan Times*, New Delhi, 28 September 2004, p. 10.

²⁵ Surinder Sud, "That Monsoon Myth," *Business Standard*, Hyderabad, 6 May 2003, p. 6.

²⁶ Ibid.

²⁷ Ibid.

²⁸ Mrityunjay Mohan Jha, *Food Security, Dynamics and Dimensions*, Northern Book Centre, New Delhi, 2003, p. 7.

²⁹ Ibid.

³⁰ Ibid.

³¹ P.K. Ghos, "Genetically Modified Crops and India," *New India Digest*, November–December, 2000, p. 16.

³² Swaminathan S. Anklesaria Aiyar, "Why Do Democracies Remain Poor?" *The Times of India*, Mumbai, 2 September 2001, p. 12.

³³ Ibid.

³⁴ Deepak Joshi, "Asset Base of the Poor has to be Strengthened," *Hindustan Times*, New Delhi, 30 November 2002, p. 15.

³⁵ "Even Employed Live in Poverty, Says ILO," *The Hindu*, Chennai, 10 December 2004, p. 9.

17

Health Security

Life was in wait till the forces engaged in creation perfected the design of death.

If there is anything that beats the marvel of life, it is the hidden mystery of death—the ultimate in the design of life. Every life comes with the certainty of death. Life without death would have been catastrophic. It would have been delayed till the forces of nature perfected the design of death. But in reality people cannot accept death. The fear is hidden. It is in the “keep the death away” syndrome that people perceive health. But, health is for living a life and not about death.

HEALTH SECURITY: THE ELEVENTH ELEMENT

Health security is not preventing death. It is about health that is affected by modified lifestyles, population pattern, increase in life span, advancement in medicine, awareness among people and a host of other factors. People look upon the government to provide healthcare facilities. This expectation is at the core of the concept of health security. But under the principles of national security, health security is not about providing healthcare alone. Healthcare is incidental to health security. Health security as an element is about maximising the physical, mental and emotional health of people.

REITERATING LIFE, DEATH AND HEALTH

Life is real and biophysical. Death is when it ends. Death is an intricate and extensively complex process. Immortality is inferior to mortality. Technically it means that, if the secret of death were not mastered in creation, there would not have been life at all. While death ends a life, birth is not the beginning of a new life. It originates from an already existing life form. A life is reborn much before its donor dies. The life that we see is not new. It is old and created from the old. All these are fine-tuning statements and not philosophically or theosophically placed. It is simply the organised way of nature in which one life is born from another and concludes at death. Every life will carry the signatures of its origin, being born from the old, all the way. Life culminates in death by the process of ageing. This process of life and death is the ideal situation. According to studies, every human

death is exceptional.¹ It means that each human being dies a “designer” death at the end of it all. The death signature of each individual human is different even if the cause is identical. This could hypothetically mean that even health (the living life) could have an exclusive signature for each individual. What lies behind the secret of mortality, the biggest event in the span of a life? There are various theories that attempt to explain the mechanism of ageing. One of them is about the accumulation of flaws in the process of body cell propagation. This is based on genetic information. Another theory is that it is programmed into the cells leading to natural destruction under a biological clock. And yet another theory is, that the body of an organism slowly loses its ability to defend itself and gives way at the end of it all to harmful organisms.² Life, originating from the living old, has a span before it meets the end. It was 35 years in the 18th century. It became 80 in the beginning of the 21st century.³ Will the doubling game go on endlessly? By 2015 people may live beyond 150 years if researchers are to be believed. In certain circles it is believed that the life span may extend to 300 years or so by genetic modification.⁴ Hopefully, it may stop there. But science has not yet said so. Otherwise a day will come when people may yell, “somebody stop meeee!” Such cries apart, death is part of life, but its characterisation is different in human apprehension from that of the other life forms. The denial is strong when it happens. Acceptance comes very late. Bereavement is a terrible feeling. The concept of death has been amplified thus far in order to draw the attention of the informed reader to the concept of life—the consistent span between birth and death. It is in this inter-period that the idea of health survives. Health is related to life more than death, which actually is an independent but co-rider. In human beings, health is the state of an individual’s ability to remain physically, mentally and emotionally, and thereby socially balanced by coping with the environment till the end comes naturally, the preferred choice in health security. Health is bad when there is continuing disease, physical deficiency and weakness, and poor mental and emotional balance that make a person unable to cope with the environment and society comfortably. For the WHO, health is the state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity.⁵ This book makes a diversion by replacing the term “social” with “emotional.” It was the social revolution of the 1940s that introduced the principle of the welfare state, which identified poverty, ignorance and ill-health as the major issues. The rise of modern medicine as the formula for eradication of diseases began in the 19th century and the French chemist Louis Pasteur’s (1822–1895) attempt to correlate specific microbes with diseases. Under his doctrine, health meant increasing the resistance of the body to cope with diseases. This is a turning point in the perception of health. From then on, the body became a weapon against diseases. Health security involves cost to government. The disproportion between the cost and effectiveness of medicine is a contention in society. Health security is not all about medicine and physicians. To a considerable extent it is correlated with other elements of national security.

CONCERNS OF HEALTH SECURITY

Health security calls for protection against all known threats to physical, mental and emotional health of the people of a nation. The living environment is a major factor in health security. Identified environmental factors are:

- (a) Lack of access to fresh water
- (b) Unhygienic environment
- (c) Indoor air pollution
- (d) Urban air pollution
- (e) Agro-industrial pollution
- (f) Closed-in human population
- (g) Density of population
- (h) Use of fossil fuels
- (i) Deforestation
- (j) Forest fires and smoky and cloudy environment
- (k) Climate change
- (l) Disasters
- (m) Food contamination by environmental pollutants, chemicals and microbes
- (n) Close domestication of animals and zoonotic diseases
- (o) Environmental depression
- (p) Environment restricted lifestyle

There are more. The diseases that are caused by environmental factors are far too many. They are related to deficiency diseases (anaemia, rickets, beriberi, etc), arthropodal and helminthic diseases (malaria, filaria, etc.), communicable diseases (dysentery and diarrhoea, tuberculosis, etc.), and non-communicable diseases (cancer, cardiovascular diseases, etc.). The geo-medical approach to health security identifies these diseases and their relative causes based on environmental degradation. Diseases are classified in many ways. In a cause-based classification, diseases fall under seven categories. They are as follows.

1. *Caused by Organisms*—Identified disease causing organisms are viruses, bacteria, fungi, protozoa, flatworms and round worms. They live as parasites in the human body and interfere with its functions. The agents that deport them to the human body can be many.
2. *Human-induced*—Such diseases are induced individually or collectively by the human systems. They are also called social diseases—coronary heart diseases, alcoholism, drug abuse, lung cancer, domestic and industrial accidents, industrial diseases such as asbestosis, and pollution related disorders fall under this category.
3. *Deficiency Diseases*—Absence of certain nutrients in the diet causes deficiency-induced ill-health. For example, protein deficiency can cause

kwashiorkor and marasmus. Absence of vitamins and minerals may result in many diseases.

4. *Genetic Diseases*—These may be congenital or late onset. Cystic fibrosis, Huntington's disease, retinoblastoma, etc. are examples. Here the information required is for babies with genetic disorders and managing their birth under ethical controversies.
5. *Ageing and Degenerative Diseases*—Caused by degeneration of the body tissues in the natural process of ageing.
6. *Mental Illness*—Wide variety of mental disorders exist: schizophrenia, senile dementia and depression are a few common mental ailments.
7. *Emotional Shortcomings*—Emotional shortcoming is a serious matter in the modern world. It makes a person unable to cope with the social demands of life and society without conflict.

PUBLIC HEALTH

The concept of public health originated with the industrial revolution in 1830 and was limited to the industrialised nations. Public healthcare is the art and science of preventing and controlling disease, prolonging quality life, promoting physical, mental and emotional health, sanitation, personal hygiene, control of infection, and health administration and services. Community measures in healthcare were found in the remnants of the Harappan civilisation that flourished in 3,000–1,500 BC.⁶

Public health management is not just treatment alone but a holistic approach to health security. The basic ideology revolves around various activities:

- (a) Inculcating awareness about the state of health and methods to improve health aspects
- (b) Food and nutrition management from health security point of view
- (c) Drug management
- (d) Availability of safe drinking water
- (e) Emphasising hygiene
- (f) Maternal and child healthcare availability
- (g) Immunisation
- (h) Elimination of locally endemic diseases
- (i) Provision of essential drugs
- (j) Trauma centres
- (k) Family planning and advisory centres
- (l) Common disease treatment centres
- (m) Accident prevention
- (n) Dangerous disease awareness
- (o) Sex education
- (p) Eradication of superstition in health security

- (q) Disaster recovery centres
- (r) Emotional health development centres
- (s) Distress and anxiety awareness centres

The list can go on based on cultural and economic differences of people. In public health management, a major area of negligence is from drug administration. Practitioners are aware that most drugs are more or less poisonous in some aspect or the other, but need to be administered regardless since in medical management the question is relief from a particular disease. The world is full of drugs and drug manufacturers. It is a world where everyone in the business likes a “good” disease. In fact there are many more drugs proliferating under constant competition and business objectives than the number of diseases. The risk therefore, takes a side seat. There are also diseases without identified drugs. Here, the competition is to identify a drug. It is not disease, but competitive business interests that drive drug design and industry.

HEALTH OF THE WORLD

The world is not in good shape but it is better than before. The health scenario of the world is a study in contrast. There are countries where a child can expect to live a full and healthy life to its maximum life span comfortably with all necessary medical support. On the other hand, another child born in another country may not have a life span of the modern day world average, but that of a world two centuries back.⁷ The health inequality of the world is growing. A press release from the WHO on 4 June 2000 showed Japan on top of the healthy life expectancy pyramid at 74.5 years. Sierra Leone is at the bottom at less than 26 years.⁸ The survey was carried out in 191 countries by a new ranking system developed by the WHO, called the disability adjusted life expectancy (DALE). It calculates the number of years of life equivalent to “full health.” In the DALE system, a person “dies” earlier and suffers disability for the rest of the time—till biological death, that is. The calculation is by weighting the years of ill-health according to severity, subtracted from the expected overall life expectancy to give the equivalent years of healthy life. The years lost in disability are substantial in certain countries. The loss is caused by injuries, blindness, paralysis and debilitating effects of diseases such as malaria. On an average, the loss by disability is about 9 per cent in healthy countries. It is 14 per cent in the worst-off countries. The reasons are rampant distribution of the HIV-AIDS epidemic, poor development, killer diseases including cancer and coronary heart disease, chronic lung disease by tobacco chewing or smoking and high rate of violence in the socio-political national system. But the life expectancy of the world is increasing gradually. It was 48 years in 1955 and 65 years in 1995. According to the WHO it will be 73 years in 2025.⁹ Table 17.1 shows the life expectancy of the world population in select countries by 2025 according to the WHO study in 1998.¹⁰

TABLE 17.1 Life Expectancy in Select Countries by 2025

Age	Countries
Higher Life Expectancy Countries	
82	Iceland, Italy, Japan and Sweden
81	Australia, Canada, France, Greece, Netherlands, Singapore, Spain and Switzerland
80	Austria, Barbados, Belgium, Costa Rica, Cyprus, Finland, Germany, Ireland, Israel, Luxemburg, Malta, New Zealand, the United Kingdom and the United States
75	China
72	Russian Federation
71	India
Lower Life Expectancy Countries	
60	Angola, Burkina Farso, Burundi, Chad, Mozambique, Niger and Somalia
59	Mali and Uganda
58	Gambia and Guinea
57	Afghanistan, Malawi and Rwanda
56	Guinea Bissau
51	Sierra Leone

There were 21 million premature deaths in 1998 in the world. In the order of seriousness, the leading causes of death are infectious and parasitic diseases, circulatory diseases, cancer, AIDS, respiratory diseases and others due to prenatal conditions. Serious problems exist with people who suffer from terminal and critically incapacitating diseases. The productivity loss due to a serious health problem extends much after the chances of surviving it. The quality of life decreases.¹¹ The pandemic spread of HIV and AIDS over the world is a serious cause of worry.¹² The fastest method by which it spreads is by birth to infected mothers. The disease has hit the sub-Saharan Africa the worst and Asia is fast closing in.

Smallpox has been eradicated from the world. Polio has been pushed back, but is still at large in many parts of the world. Governments can restore hope in people by proactive healthcare objectives. Terminal diseases in a nation not only increase the risk to life but also cause the bill for healthcare to mount. There are other issues also that deal with health security—biological warfare, transnational epidemics, genetic modification, issues of hygiene and nutrition, etc. Anything that causes a dent in health security is a reason to worry but AIDS causes panic. AIDS has already killed 22 million people in the world. The obstacles in any country

are legion: illiteracy, poverty and bad governance of the poor. Ironically, scientific advancement also can be a cause for dangerous health consequences. An experiment in life sciences gone out of control can accidentally lead to a killer disease.

The world will witness unprecedented increase in the older population by 2025, whereas the growth in working age population will decrease. There will be movement of young people across borders if the demand for the latter increases. Old age healthcare is considered to be a non-productive option and is therefore, said to be neglected. But it is an important aspect of health security that could be highly rewarding, if carefully planned. The contribution of elderly healthy people can be very substantial to a society as can be seen from the bio-modelling of a family. The role of a grandparent in rearing the young is very critical and can be seen from the Upper Paleolithic Moderns who pushed away the Neanderthals. It was based, if not totally, on the power of the old.¹³ The efficacy of old age healthcare and productive use of the old and healthy could revolutionise the concept of health security, especially in nations like Japan where there are likely to be more old people. It will be a bold experiment for governments that have the potential to bring a major change in productivity with respect to age in demographic analysis. Women, irrespective of their nationality and society are subjected to attitudinal problems due to gender bias. Concern for women's health is tragically low in most parts of the world. Women are more complicated by design than men. To that extent they are superior in design. The requirement of child-bearing and rearing for human survival and existence make them stronger and more compounded than men. From the primitive days man's role was hunting. Women were sophisticated; they reared the family including their men. They cooked the game the men brought in and made their beds. This fact however, is diluted in the hunter-man mentality the world over. It leads to gender bias from the early days of the girl child who does not get the same care the boy child gets. The trend continues. Still, women survive. That is another proof of their superiority in design and endurance for survival.¹⁴ Next comes the most controversial question posed by this study: Is the worldwide trend to neglect women hidden within a natural process? Is it required for the survival of men who are weaker and thereby balance the process of survival for both the genders?¹⁵ Such questions cannot be answered easily. Most of the issues, even if seen as deliberate in human life could be by hidden default in the system for its continuity. Otherwise, the balanced continuity could be a problem. This argument can be visualised as hypotheses in the fertility capability of a woman controlled by the tendency for female foeticide, or the superiority of women balanced by men's projected dominance that strictly is an allowed handicap. However, these are not tested hypotheses. A re-look at this poser of neglect to women will show a visible model with the following arguments.

1. *Women are superior to men by design*

It is medically and genetically acceptable. Desmond Morris in *The Naked Ape* mentions the superiority of women by design. While men were crude

and brutal hunters, women were designed to be more sophisticated in rearing them. If women are of superior design for the role of life, then the assumption is that they would have overrun men in the world. It has to be controlled by balancing population by gender.

2. *Four methods of such balancing are seen by default*

- (a) Women's productivity is less than their fertility capability (Chapter 11). This controls unprecedented population explosion. It cannot be said that it restricts the birth of the girl child to match that of the boy child except from the theory that chances for girl children are more in any conception, since XX is a girl child and XY is a boy child where chances for XX survival is more. In that case there is a regulation by default.
- (b) The productivity rate is further reducing. This may be attributable to balancing the population as a whole.
- (c) The much-despised practice of foeticide in certain parts of the world targets mainly the female foetus. It is a criminal and unethical practice. But is there a hidden instinct from the unconscious?
- (d) Gender bias is male supportive. Is it necessary for men to survive, again by a default in the psyche? Do not the majority of women in the world accept the bias and feel comfortable under male domination? Is there an unconscious drive? Will a reversal of roles in the absolute sense (though impractical) become mutually destructive to both men and women?

The entire hypothesis and its outlook projection is an analysis in a different, difficult and controversial perspective. The purpose is to see whether there is a necessity to have such differentiation between genders because one gender species is just tough and the other comparatively weak, but sophisticated. Do they have to balance for mutual existence? Do women stand to lose existentially just because they are superior to men in the design of life?

Children follow different status in health recognition. According to the WHO, of the 57 million deaths in 2002, 10.5 million were among children below the age of five years.¹⁶ More than 98 per cent were in developing countries. The causes for child mortality are prenatal conditions; lower respiratory track infections, diarrhoeal diseases, HIV-AIDS and malaria, with malnutrition as an added factor. Mental and emotional balance will also take a toll since it is directly related to the pressures of life. Depression is a major mental illness today. According to the WHO, depression will be the second-most common health problem of the world by 2010.¹⁷ Socio-econo-political instability of a nation can virtually forego focused health facilities for its people. Illiteracy, hunger and poverty, lack of health awareness among population, lack of access to clean air and water, gender inequality, environmental degradation, ethnic conflicts and war, etc., generally affect the programmes to maximise health security. New diseases surface in spite of eradication

of the old, affecting the health and economy of unsuspecting nations. SARS is one of them. In 2003, SARS spread out from Mainland China and was quickly controlled. Global control of infectious diseases in the aftermath of SARS call for prompt reporting, worldwide alert, rapid response, travel restrictions, research collaboration, upgrading disease prevention systems already in place, political and administrative commitment, community and media awareness and correct information management. Injuries and non-communicable diseases also take their toll of human lives and, in many cases, induce disability. Abusive sexual practices, tobacco dependency, drug addiction, cardio-vascular system failures, etc., are burdens of death to the community. Environmental pollution and health security are closely related. Health security becomes a costly affair. The UNEP and WHO studies show the alarming impact of environmental pollution on health security.¹⁸ Trafficking in drugs, spurious medicines and of late, banned health drugs including steroids is increasing based on rising demand in spite of international restrictions. To that extent, it is a law enforcement problem. Transnational crime syndicates are involved in a big way in trafficking body building drugs.¹⁹ Health security also means that people are not becoming guinea pigs on health-related experiments. The tests on American soldiers in the aftermath of the Second World War, in the “land of giant mushrooms” where they were exposed to direct nuclear radiation were notorious.²⁰ Hitler too was paranoid. Many of his soldiers perished in unsuccessful nuclear experiments during the Second World War.

CARING FOR HEALTH IN A QUEASY WORLD

It will be idealistic to think that the world could be made healthy. The notion of health security is not just the well-being of an individual patient on a hospital bed, but the people of a country as a whole. A prospective patient who everybody is, looks at the healthcare facilities before a judgment is made on the country's prospects towards a higher level of health security. The citizens expect to be in safe hands when they fall sick. Ethics is an integral part of healthcare. Indoctrination of ethical practices is imbibed in the Hippocratic oath that a medical practitioner is familiar with. But how far medical practices and ethics are involved in determining the health security of a community is debatable. Health security is more about governance rather than just managing the ailing. Once the goal of governance is understood, the ethics within this goal can be justified. It remains as a value system that may add to promoting health in a congenial way. While the care for the health of patients' is the objective of medicine, the act of caring for health also needs to accept the limitations of providing health. Chronic illness by congenital problems or genetic disorder, injuries caused by accidents and disasters, trauma conditions, pandemics and epidemics, ageing, ill effects of medicines and treatments and many other factors contribute to natural limitations to health security. Providing well-being in health is more a psychological rather than a physiological phenomenon.

The rate of infant survival (RIS) is considered to be an indicator of the state of health of a country.²¹ Such a condition can be achieved only by good nutrition, clean drinking water, hygienic environment and healthcare focused on antenatal care for women. This is also an indication of the physical well-being of the people of a nation. Increasing the RIS is a decision of governance in health security. The success indicator for the WHO for infant mortality is less than 50 per 1,000 of the population.²²

Women's health is another area of concern. On an average (2004), 125,000 women die every year from causes related to pregnancy and childbirth in India. This is according to the government that called on people to help to break what it termed the intergenerational malnutrition cycle.²³ The deaths are attributed mainly to anemia, haemorrhage, sepsis and toxemia. Expectant women need nutritious extra food, regular medical checkups and adequate rest.²⁴

Mental and emotional health aspects are not given the desired significance in health security.²⁵ Mental health is critical for harmonious working of the mind and psychosomatic well-being. Serious mental illnesses are schizophrenia, affective disorders, other psychoses, neuroses, organic brain syndrome, mental retardation, etc. Empirical studies highlight mental disorders are high in developing countries.²⁶ Mental healthcare has taken a humanistic turn only since the time of Phillipe Pinel (1745–1826). The French physician, who taught mathematics, ultimately pioneered the human treatment of the mentally ill.²⁷ Previously, patients were chained and treated like animals.²⁸ In 1792, Phillipe Pinel became the chief physician at the Paris asylum for men, Bicêtre. There he took the bold move by unchaining mental patients. In 1794, he became the director of Salpêtrière. There he repeated this for the female patients. It was a social revolution in the treatment of the mentally ill. He also worked to dispel the belief system that associated mental illness with demonical possession. Further to it, psychoanalysts like Sigmund Freud, Alfred Adler, Carl Jung, etc., brought substantial changes in the treatment of people who were mentally ill. Emotional health is the latest addition in social health and the third constituent of health security. The subject is yet to gain the serious attention of health security experts. It is considered to be individualistic in application, hence restricted to executive makeup for leadership skills. Emotional aspects of a society are very varied because it is where the landscapes of the mind change colours. Emotions cannot be classified as positive or negative. It is a relative expression. All decisions, good or bad, are based on emotional backup. Society is governed by decisions under emotions and therefore, it is for governments to decide whether emotions have to be considered in the overall national security make up. Uplifting emotional health means improving self-awareness, self-regulation, self-motivation, empathetic behaviour and the social skills²⁹ of individuals, and guiding them towards communal welfare in a group therapeutic mode. The term emotional intelligence, introduced by Daniel Goleman in 1995, is related to the emotional health of people. Including emotional balance as one of the objectives will certainly revolutionise management of health security.

IMPACT OF NATIONAL AND TRANSNATIONAL CRIMES ON HEALTH SECURITY

Health crimes within and across borders have serious ramifications in maximisation of health security. It is rooted in trans-national corruption and crimes (TNCC). One of the heinous crimes of this genre is organ trafficking. Most of the trafficking is in kidneys. A healthy kidney fetches up to US\$10,000. The transplant is charged up to US\$120,000.³⁰ More than 80,000 people were waiting for kidney transplants (2004) in the United States alone. There are views in certain quarters that the restrictions on body part transfer should be eliminated on ethical grounds. That may also control exploitation of the poor.³¹ Another ghastly crime is human blood trafficking. This is mostly within a country. The police in Togo, South West Africa had been able to identify the horrendous crime in blood and organ trafficking in certain regions.³² Such trafficking was reported to be spreading all over southwest Africa and across Ghana. Many people were killed, most of them women.³³ In blood trafficking, the victims are killed and the blood drained out in a hotel or other convenient place. The victims are obviously women and young girls who are comparatively helpless and have good healthy blood. The blood is drained through slit throats or cut veins. After draining the blood of victims, the perpetrators remove the reproductive organs.³⁴ Often people are murdered in the Mexican border to the United States especially in the border city of Ciudad Juarez and organs removed for transplant into the body of rich American patients.³⁵ Organ traffickers belong to a gruesome lot of criminals.³⁶ The traffickers commit murders also to harvest sex organs from children to sell as charms for the practice of witchcraft in ceremonies to increase wealth or sexual vigour, all based on superstition. The people in certain places in Africa are angry that the authorities are helpless in controlling the crime. They know that international ring of syndicates have established a violent cordon around the world and exploit or kill people to support organ trade, which is a highly lucrative transnational crime with heavy returns and limitations in legislative measures. In one case in India, an orphanage was allegedly involved in removing the cornea of an orphan girl.³⁷ This throws suspicion on the activities of adoption centres.³⁸ International transplant mafia based in certain countries target the United States as the demand point for organs and smuggle people from poor countries on student or tourist visas. On landing in the USA they are whisked away from the airports to the hospitals. Thereafter, their organs are removed and sold.³⁹ There is a vast difference between the demand and supply for life-saving organs. Sale of human organs is illegal in most countries. Will legitimacy help people from dying waiting for organs? An increased demand for organs creates a world of cloak-and-dagger outlaw transplantation. Some operate under the loopholes in the system or take advantage of corruption within the system. Another source for human organs are the terminal prisoners. In some countries, organs of prisoners awaiting the death penalty are reportedly available for transplant. Prisoners who have been executed provide a rich source of supply.⁴⁰ Those waiting for transplants travel

long distances to unhygienic hospitals waiting for someone to die in prison. And, one day it happens. Where it is reported, countries officially deny the existence of prisoner organ harvest. It is suspected that some such executions are part of a worldwide organ business.⁴¹ The patient pays the government-run hospital US\$10,000 for the service. The patient pays the government run hospital a good sum based on demand for the service. Today, only the rich can afford organs from elsewhere. In some cases prices can go up to US\$100,000 for an illegal kidney transplant. In some other countries organs can be harvested from the deceased unless the individual has signed legal papers prohibiting it. Under international understanding, organ donation and sale could be made legal to save the needy. Notwithstanding the legal aspects and ethics, what is certain is that shortage of organs will invite criminal activities from within and across the borders of a country. Organs of the poor will find a way to the rich through human conduits working under shadow of the law. Overseas transplant agencies promise a heart for US\$240,000 and a kidney or a liver for US\$125,000 (2004). The organ has to come from someone who is poor and will be poorly compensated for the role, or from an unsuspecting victim. The money goes to the traffickers.⁴² It is a business of sleaze, perverse sex, corruption and murder. Yes, someone else gets a new lease of life somewhere; that is incidental to the operators. Crime is the natural visitor on scene to fill up the demand. The current system evolved in 1960 and 1970, when the ethics of brain death and euthanasia were debated widely.⁴³ There are arguments in favour and against organ donation at a price. Why can't people sell the body that belongs to them? According to medical practice a donor cadaver can be of use to at least eight people by organ transplant—two can be benefited by kidneys, three by liver, two by eyes and one by heart transplant.

Mismanagement of medicines and medical applications by incompetent and unqualified people are serious problems. Incompetent prescriptions, spurious medicines, side-effects of incompatible medicines, unfounded use of alternate medicines, unregulated health tourism, etc., can lead to this situation. When not administered by qualified doctors, vaccines carry a high risk of infection from contaminated needles. There are chances of application of improper dosage especially in the case of children⁴⁴ Quacks and other medical ambushers join together to reap rich benefits when health condition in a country deteriorates.

THREATS FROM UNEXPLORED—THE OUTER SPACE

There are scientists and policy makers who are worried to death about the possible invasion of, if not already existing, extraterrestrial pathogens imported unwittingly through scientific experiments. There may not be any defence for such pathogens at least in the immediate future. Harmful pathogens from outer space could cause new varieties of pandemics. This is more probable in the human quest for finding life in distant planets and satellites. Astro-biologists should do better to understand about alien visitors' compatibility with earthlings. "*You kiss me, I suck you in*" bugs

may even choke the world out of its breath. It is important for the developed nations to understand that human search for extraterrestrial life forms should not become the nemesis for the terrestrial life forms.

HEALTH AND THE ART OF DYING

Health security is about the engagement of a government in the concerns of a citizen for a welcomed birth, healthy—physically, mentally and emotionally—life and dignified death. Life itself is drudgery in an intricate socio-economic system where the individual is a precariously perched exploring the ways to wade through. Finally, death is packed in the most undignified manner as a take-away bonus to every human being without a choice of refusal. There is no good death. *Ars moriendi*, the art of dying, does not separate one human from another, irrespective of the country or society he or she belongs. It is the penultimate decadence once born, which gradually increases from birth. The society is still dirty and absolutely undeveloped as far as death is concerned, and so are the governments. Governments have a certain accountability under health security to ensure dignity in death to the citizens. Providing this is an obligation for the national security provider. It has never been a part of health security schemes. Every death is a painful affair not only to the dying, but also to those associated—families and friends. A question that may come up in such a system will be the oft-repeated mercy killing, “is euthanasia acceptable to society?” Euthanasia is the art of putting a person painlessly to death especially in case of terminal or incurable disease. If providing dignity in death to an individual is acceptable as a national security requirement in its element of health security, then euthanasia is very much a government responsibility and thereby ethical as well as legal. But in a world under the theory of invariance where changes take place at a pace that is virtually unnoticeable, quantum jumps are not expected in human governance. Euthanasia is riddled under law, corruption, crime and religion. Still governments can make a death dignified under specialist medical practitioners (doctors of peace),⁴⁵ in hospitals designed as “comfort hospices” for the dying with adequate facilities for last rites and final disposal. The responsibility of the government in health security should end here, not short of it. It will be a revolution in national governance.

CONCLUSION

Health security calls for concern for the people that starts at the time of conception of a life and continues till it ends. It calls for efforts on the part of governments and people to make the passage of each life comfortable and dignified from birth to death. It is very practical under the principle of national security. That is the whole aim of the element of health security.

Notes

¹ Sherwin B. Nuland, *How We Die*, Chatto and Windus, London, 1993, p. 3.

² Mukul Sharma, "Getting a Life," *The Times of India*, New Delhi, 15 November 1997, p. 12.

³ Ibid. However according to the WHO's World Health Report, 1998, "Life in the 21st Century—A Vision for All," the global life expectancy at birth in 1998 was 66. It is expected to reach 75 years by 2025.

⁴ Ibid.

⁵ D.J. Taylor, N.P.O. Green and G.W. Scout, *Biological Science*, Cambridge University Press, Cambridge, 2002, p. 495.

⁶ B.K. Mahajan and M.C. Gutpa, *Preventive and Social Medicine*, Jaypee Brothers, New Delhi, 1992, p. 1.

⁷ "World Health Report 2003, Overview," www.who.int/whr/2003, 26 November 2004.

⁸ "WHO Issues New Healthy Life Expectancy Rankings," Press Release, www.who.int, 4 June 2000.

⁹ "The World Health Report 2001," www.who.int/whr/2001, 26 November 2004.

¹⁰ "Trends in Life Expectancy," www.who.int/whr/1998, 26 November 2004.

¹¹ "Cancer Ruins despite Cure," *The Asian Age*, New Delhi, 2 September 2004, p. 7.

¹² www.who.int, 26 November 2004.

¹³ Spencer Wells, *The Journey of Man—A Genetic Odyssey*, The Penguin Press, Allen Lane, London, 2002, pp. 130–132. The act of a child being cared for in a healthy manner by its grandmother is vital for human existence since it has influenced human life at the earliest times.

¹⁴ Women's superiority over men can be undoubtedly established from their genetic design. The design also shows that they are less susceptible to diseases that often affect men. But there are many other diseases that may affect a woman by virtue of the role she performs. Hence, healthcare has to be without gender bias.

¹⁵ Such questions originate from hypothetical adaptation of a belief that everything a human does has a purpose behind it. If that is so, they are programmed that way as a requirement for the survival of the species. Such programming, if true, has to be by default.

¹⁶ "Overview," www.who.int/whr/2003, 24 August 2004.

¹⁷ Arvinder Kaur, "Depression Emerging as Major Illness," *The Asian Age*, New Delhi, 8 October 2004, p. 10.

¹⁸ Lester R. Brown and others (eds), *State of the World 1993*, W.W. Norton, New York, 1993, p. 10.

¹⁹ "More Money in Steroids than Narcotics," *Hindustan Times*, New Delhi, 26 October 2004, p. 14.

²⁰ BBC TV, *Correspondent*, 1 September 2001.

²¹ John E. Roemer, *Distributing Health: The Allocation of Resources by an International Agency*, Martha C. Nussbaum and Amartya Sen (eds), *The Quality of Life*, Oxford University Press, New Delhi, 1999, p. 339.

²² Ibid. p. 352.

²³ Advertisement by the Government of India, "Show That You Care," *Hindustan Times*, New Delhi, 7 September 2004, p. 11.

²⁴ Ibid.

²⁵ Arya Vaidyasala, Kottakkal, in its booklet *Jeevitacharya* in Malayalam, mentions the WHO definition of health as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, 2003, p. 19. In this book, the word social health is replaced with emotional health, which is considered to be wider in concept.

²⁶ Mahajan, n. 6, p. 419.

²⁷ *Encyclopaedia Britannica, Ultimate Reference Suite* CD-ROM, 2004.

²⁸ Mahajan, n. 6, p. 421

²⁹ Daniel Goleman, "What Makes a Leader," *Harvard Business Review*, January 2004, p. 82. These five aspects of emotional intelligence were first brought out by Daniel Goleman as the signs of a leader. These aspects can be equally applied to a population for a healthy conflict free communal life.

³⁰ Michael Wines, "Arrested In Brazil and South Africa for Alleged Human Organ Traffic," *New York Times*, 6 December 2003, www.news24.com, 25 August 2004.

³¹ Ibid.

³² "Nigerian Immigrants in Togo Trade Human Blood, Organs," *www.CWNNews.com/Fides*, 10 August 2001.

³³ Ibid.

³⁴ Ibid.

³⁵ "Organ Traffic," *www.memebros.scotsman.com*, 25 August 2004.

³⁶ *www.catholicexchange.com*, 26 August 2004.

³⁷ "Adoption Body Suspects Organ Sale Racket in Andhra Pradesh," *India Abroad News Service*, 1 May 2001.

³⁸ *www.vachss.com*, 26 August 2004.

³⁹ Brian Kates, "Black Market in Transplant Organs," *New York Daily News*, 25 August 2002, *www.vachss.com*, 27 August 2004.

⁴⁰ Ibid.

⁴¹ *www.news.bbc.co.uk*.

⁴² "Bizzman Hooks Up Patients with Overseas Operations," *New York Daily News*, 2002 and *KnightRidder.com*, *www.vachss.com*, 27 August 2004.

⁴³ "United Network for Organ Sharing (UNOS)," *www.unos.org*, 27 August 2004.

⁴⁴ Sharmistha Chatterjee, "Danger Lurks at the Point of a Needle," *Bombay Times, The Times of India*, Mumbai, 27 August 2004, p. 1.

⁴⁵ Just a title to highlight the role of the specialist in providing comfort, tranquility and dignity to the dying.

18

Ethnic Security

*Much beyond cultural relativity, every human being is an island—
precious, mysterious, exotic, turbulent, volcanic...*

Though dynamic and vibrant when viewed externally, human beings carry simmering volcanoes ready to erupt, buried deep inside their mindscapes. The unseen landscape of human emotion is extremely complex and varied, with a tint of isolation from another. One of the determinants of fate is hidden in the differences that force them to remain in the mental isolation of ethnicity of birth. The word ethnicity, here has a much wider connotation than its common usage. The origin of the term is attributable to the differences from birth itself. The concept of ethnic security has to find the groundwork on which to build itself within the contrariness of gender, age, education, health, occupation, status, religion, race, cast, culture, colour, creed, belief systems, money and other agents of division. All these and any other separating identities that differentiate one human from another, in whatever form it may be, in individual and social perception are brought under a single term—ethnicity. Irrespective of what they are, every human being is required to be protected from threats to national security that include threats from each other. The role of the government in national security is to bring this awareness among people and protect them until such time as they are capable of protecting each other recognising their rights in an emotionally healthy society. The element of ethnic security will then be a thing of the past in national security. And that, if the past is to be believed, is hardly likely to happen.

ETHNIC SECURITY: THE TWELFTH ELEMENT

Ethnicity covers differences in human attributes based on many factors:

- (a) Culture—Hinduism, Judaism, Shintoism, etc.
- (b) Religion—Buddhism, Christianity, Islam, Sikhism, etc.
- (c) Cast (*Varna*)—Brahmin, Sudra, Vaisya, Kshatriya, etc.
- (d) Sects—Bahai, Sunni, Shia, Bohra, Catholic, Protestant, Mahayana, etc.
- (e) Colour—black, brown, white, etc.
- (f) Race—Caucasoid, Negroid, Mongoloid, Australoid, etc.
- (g) Language—English, Chinese, Hindi, Tamil, Sinhalese, etc.

- (h) Nativity—indigenous, non-indigenous, immigrant, settler, non-resident, etc.
- (i) Age—young, old, teen, etc.
- (j) Gender—male, female
- (k) Sexual—bisexual, heterosexual, homosexual, castrated, asexual, etc.
- (l) Education—literate, illiterate, educated, intellectuals, etc.
- (m) Money—rich, superrich, poor, below poverty line, etc.
- (n) Accent—Southerners, Biharis, cowboys, Yankees, etc.
- (o) Position—royalty, bureaucrat, politician, commoner, etc.
- (p) Status—very important, important, commoner, persona non grata, etc.
- (q) Occupation—minister, bureaucrat, military, clerical, etc.
- (r) Service—government, private, self employed, housekeeping, etc.
- (s) Dead—normal dead, indecently dead (not entitled for last rites), etc.
- (t) Others

There are more—some tend to be different and some different by differences. There are also ethnicity within ethnicity and further, like reflections in a hall of mirrors, till it reaches the ultimate end of ethnicity—the single human. In that case one wonders, isn't each individual on earth an ethnic miracle? From such a vantage point ethnicity seems to be a miracle rather than a curse to the human system. But the problems of ethnicity do not stop here. There is also a case of ethnicity between the living and the dead. Sometimes the dead can cause more ethnic problems than the living. There are many examples of dead people coming a-calling once in a while to cause problems in a society. Who said ghosts are not real?

Ethnic security is about every aspect of differences and subsequent changes in interactive behaviour in which one of the parties feels low and enraged. It could even happen within a sub-system—an organisation, sports field, educational institutions, military, etc. "Hurry, you sons of coolies and bitches," shouted Commander F.W. King of the British Navy at his Indian ship's company of HMIS *Talwar* of British India. The response was the (in)-famous mutiny of 18 February 1946. In the aftermath, 200 lives were lost; thousands lost their jobs; 2,000 were arrested and incarcerated. Though their fight for rights was not officially acknowledged, their acts were recorded in the history of India's freedom struggle. But it was more an ethnic riot and a threat to the government of colonial India than a full-fledged freedom struggle.¹

THE DIVIDED HUMAN AND ETHNICITY

Human beings live in divided societies and alienated mental communes. While such ethnicity may have its violent overtures, it is the simmering discontent of the divided human that invokes national security concerns. Ethnicity in national security studies springs up from all that contributes to the human divide—communal, cultural, national, religious, tribal, caste, racial, gender, origin, age based issues, etc.²—that threaten the integrity of a nation. Such a definition also

avoids ambiguity with respect to other known principles of ethnicity quoted in different contexts. For example, in the Genocide Convention and in general lexicography, ethnic groups are considered to be different from three other groups—national, social and religious.³ In this book, the term “ethnicity” means the all-encompassing terminology that marks the difference between individuals and thereby, groups in every order of difference that divides one human from another. The dead-end of the road in an ethnic conflict is the probable break up of the nation-state. At the lower side it is just restlessness and loss of productive ambience in the psyche of a state. Communal issues that originated from ethnicity could also be seen as part of a larger agenda of fundamentalisation of the world. There is the age-old belief that shared values and security strategies can reduce ethnic conflicts.⁴ Ethnic problems can be caused by demographic dynamics and formulation, and belief systems. Tolerance, education, communal harmony and integration of minority groups are voiced remedies. Early warning systems may give time for preparation, the most important ingredient in the ethnic security action plan, in case methods of integration fail to yield result. The problem becomes serious when ethnic groups lose touch with global values. Education is a solution, but conditioned ethnic pangs cannot be controlled by mere education alone. Ethno-nationalism, fundamentalism, militant secessionism, militarism, territorial disputes, national chauvinism, economic deprivation and gender-biased insecurity are all factors that affect ethnic security. There are millions of victims of such conflicts including women and children.⁵ The policy of the government should seek uniformity in a social structure based on the divide among humans. Children are ethnic entities in ethnic security studies. They are ethnically different from adults in their life towards adulthood. Child abuse is multiple in counts. Gender bias targets women. Position of women within subsistence economies are reportedly declining and becoming increasingly insecure.⁶ There is increasing demand on their time and physical energy from the male world. The demands include sex at will of the male species. Absence of male libido (including geographical separation) is another problem for the female. The problems associated with the absence of such needs, abuses and other repressions in women have made them a community in depressive dejection. Women are angry; it is a simmering feeling reflected in everything they do under ethnic divide with men. Women and girl children are engaged in providing service to the family members. The result is the lack of a meaningful life for themselves. There is a tacit acceptance by women that they are not independent. Suppression is the name of the game that males play with the females in the ethnic gauntlet that extends even to procreative acrobatics. Is it natural? Is it necessary for male survival as a hunter? To that extend is there a hidden meaning of survival in every ethnic game? These are late night thoughts for the weary and dull. There are many social quicksands where women and girl children get buried silently.⁷ New-born babies are swapped in hospitals for a good sum of money—ranging from a hundred to three hundred thousand rupees in India. The unsuspecting parents of a newborn boy child may never see the child in their lives,

because it has been swapped for a girl baby just born to another parent who bought the boy for cash and exchange.⁸ The gender bias slides on a razor edge in societies the world over. There are societies where women are killed for honour supported by law. The Article in criminal code may read, “A husband or a close relative who kills a woman caught in a situation highly suspicious of adultery will be totally exempt from (any) sentence.” Another will guarantee a lighter sentence for the killer of the male involved in relations with a female who has committed an “act which is illicit in the eyes of perpetrator.” The concept of women as property and honour like a domesticated animal of economic importance is deeply entrenched in the social, political and economic fabric in many nations and societies; in Pakistan honour killing is called *karo-kari*.⁹ Honour killing issues have been reported from developed countries also. A Sikh in the UK was accused of hiring a hit man to kill his daughter and her Jewish boyfriend to protect the family’s honour.¹⁰ Yet another discriminatory procedure is denial of medical aid to women. In India, a girl child has 40 per cent more chance of death before the age of five than a boy because she is unlikely to be taken to a doctor if she is sick unless she is very serious. The health expenditure is 2–3 times more for boys than it is for their sisters.¹¹ In the world of divided humans there is exploitation of the unsecured by the relatively secured. It is seen everywhere—from gender bias and religious conversions, to super wars. The bottom line of ethnic security is preventing this exploitation.

THE ISOLATED HUMANS IN A DIVIDED SYSTEM

The isolated humans belong to a different genre altogether. They are called the indigenous people. They are formal to ethnic security management, though restricted within their own country in isolation. They are natural to the habitat but isolated by their own choice *ab initio*. Their time and space in history are different from that of the fellow humans around them. Under human rights, states are required to protect the interests of indigenous people to preserve their cultures but in reality, there is serious dismemberment of these cultures. It will be disastrous for the world if the indigenous cultures are allowed to vanish because under biodiversity, the ecological health of the world cannot be sustained without indigenous people. Biological diversity is linked with cultural diversity.¹² Indigenous people range from the most advanced, like any other human in the world, to the down-under-the-bush. The advanced among them fight for their rights to protect their territory in the court and parliaments, whereas the least advanced shut their doors to the advanced world. Indigenous people are original to the territory. The rest of the people around their territory in their own country, are in most cases, the descendents of powerful outsiders who occupied it. Their culture is distinct from what is followed in their country. It is estimated that there were around 190 to 625 million indigenous people in the world in the nineties. The range is wide because of varying definition of indigenous people.¹³ According to studies, cultures of indigenous people are dying faster than the people who belong to the culture.

There were about 54 million indigenous people in America when Christopher Columbus (1451–1506), an Italian explorer from Genoa landed on 12 October 1492. Five centuries later, the population of their descendants is 42 million.¹⁴ Their culture almost vanished along with their natural habitats. The conditions are more or less similar with the indigenous people of Australia, New Zealand and Siberia.¹⁵ According to World Watch report, India has the largest population of indigenous people followed by Myanmar and Mexico.¹⁶

ETHNIC RIOTS—VIOLENCE IN PRIMORDIAL FORM

An ethnic riot is intense and sudden often premeditated and well planned. It is executed under primordial violence. Communal violence, racial attacks, religious wars, linguistic agitations, tribal disturbances, political violence, etc., are some of the terminologies used to depict an ethnic riot targeted against one group by another. Often, the attacks are not by accident. The participants believe in their acts firmly. It can be controlled by the state but the state does not normally interfere in the initial stages. According to author Donald L. Horowitz, a riot is both cause and effect and a process that has its own dynamics. As a cause, a riot exacts its toll in casualties.¹⁷ The death toll can range from a few to hundreds of thousands. The 1947 India–Pakistan partition riots were the worst recorded. It was unparalleled to any kind of human movement or exodus in history. The refugees were brutally attacked by disoriented savages of faith of their own genre, violating all norms of civility. Effecting dislocation is the primary purpose of a riot. Displacement is the key issue and the cause is made effective by violence ending up in mayhem and murder. An example is Kashmir. Militant activism is a form of ethnic riot. The outcome of ethnic violence is private armies, militant leaders and violent political groups that may cause additional harm. Such violence will be a cause for separatism, fragmentation and de-stabilisation of a country in the long run. Ethnic violence can turn to secessionist wars. The effect of a riot is very discernible.¹⁸ The attackers and targets are known. It is not a casual or spur of the moment affair. It is war in a limited space. The analogy to war is often evident. In certain societies they even resort to war cries. An example is the Zulu war cry in Durban, South Africa while they attacked the Indians with an intention to destroy them and their properties. The attacked may try to defend, often without success. Success is decided on the counter attack. It takes place often after a lapse of time. The counter attack is also whipped on to innocent victims identified with the original attackers. And the riots go on until the state intervenes with force. There are many cases where the state fails to intervene for reasons of ethnic politics. In such cases, one party gets victimised totally. There is a common misconception that the state could be helpless in the face of a riot; it is never so. In almost all the cases, a state has sufficient power and strength to prevent and quell any kind of riot. The Tiananmen Square¹⁹ incident in China is an example of the might of the state. Interested parties under deception and coercive policies of diplomacy, can also geostrategically engineer riots in a

country. Such policies damage the geostrategic security of the perpetrators in the long run. Sadism drips in ethnic attacks. Victims are killed in the harshest manner spewing the venom of vengeance. They may be burned alive, slashed or hacked to death. Sexual perversion is very common in certain cases. “Lacerated penises of the murdered men stuffed into their mouths, or the mouths of their murdered women,” writes Horowitz in one such case.²⁰ The painful aspect of ethnic riot is self-assertion and justification even by those who are not involved. Condemnation may come officially, but not universally. The genocide of the Jews during the Second World War by the Nazis is still talked about with a sense of disagreement and disapproval. What reflects in an ethnic riot is the clear and present antipathy and intolerance in a social system where every human looks at an identity external to him. This is seen in the regularity and striking similarity among riots in the world as a general phenomenon and not exclusive to a particular society. It is a faithful reflection of tenuous human relations and the fragility of existence within which the concept of national security can asphyxiate. Ethnic riots follow made-to-order belief systems the world over. There are many such belief systems:

- The government is supportive of the conflict
- Enforcement agencies are either party to it or support it
- The ethnic organisations are supportive of it
- External forces are supporting such riots
- The powers of the world are parties to it
- The superpower is a party to it
- Everything is related to religion
- If it is fundamentalism, it must be Islamic
- A new violence will follow after a lapse of time
- Media does not report the truth
- Opportunists in various shapes and forms take advantage of the situation
- There is no end to such violence in society

In reality, these belief systems are not the guiding lines in ethnic security management. The dynamics of riots is the organised and structured violence. It is this appreciable structured behaviour and dynamics of a riot that make it more amenable to containment by law enforcement forces, provided there is political will. Political will is the bedrock of national security. Horowitz’s observation about the cause and effect of the riot also extends to the process and the riot process is also patterned.²¹ Under the pattern, the effect of the riot—arson, murder, lynching, looting, rape, mutilation, etc.—is mostly governed by the changes in the reflexes of individuals within the group. In spite of the complexities, ethnic violence is a structured activity. There is no confusion among the perpetrators. The disorder associated with ethnic violence is very “orderly” and systemic. Table 18.1 shows some of the violent ethnic riots in history.

TABLE 18.1 Ethnic Riots in Recent History

Year	Country²²	Nature of Riot
1894–96	Turkey	Killing of Armenians
1905	Russia	Anti-Jewish riots in Odessa
1915	Turkey	Killing of Armenians
1930	Burma	Between Telugu and Burmese labourers
1938	Burma	Simmering violence
1941	Romania	Anti-Jewish riots in Bucharest
1945	Nigeria	Between Hausa and Ibo in northern Nigeria
1947	India–Pakistan India	Hindu–Muslim riots subsequent to partition Sikhs attack on Muslims in the Punjab
1949	South Africa	Anti-Indian riots in Durban
1950	Singapore	Violence against Europeans and Eurasians
1953	Pakistan	Anti-Ahmedi riots in Punjab
1959	Zaire	In Luluabourg
1962–63	India	Hindu–Muslim riots in Jabalpur
1964	Singapore	Malays against Chinese
1966	Nigeria	Anti-Ibo riots
1967	Malaysia	Anti-Chinese riots in Penang
1968	Mauritius	Simmering violence
1969	Malaysia	Anti-Chinese riots in Kuala Lumpur
	India	Anti-Muslim riots in Ahmedabad
1977	Sri Lanka	Sinhalese and Tamils
1978	Turkey	Anti-Alevi violence
1979	India	Nagas against Nepalese settlers in Assam Violence in Jamshedpur Violence in Aligarh
1980	India	Violence in Tripura
1981	India	Hindu–Muslim in Biharsharif
1983	Sri Lanka	Sinhalese and Tamils
1984	India	Anti-Sikh riots in Delhi
1971–72	Philippines	Muslims and Christians
1972	Burundi	Between Hutus and Tutsis

(Contd)

Table 18.1 *Contd*

Year	Country²²	Nature of Riot
1977	Sri Lanka	Between Sinhalese and Tamils
1979	Chad	Anti-Muslim
1980	USA	Anti-Cuban and Mexican riots in Miami
1981	Egypt	Simmering violence in Cairo
1979–83	India	Anti-Bengali riots in Assam and Tripura
1983	Sri Lanka	Sinhalese and Tamils
1984	India Pakistan	Hindu–Muslim riots in Bhiwandi Pathans and Muhajirs
1986	Pakistan	Pathan–Muhajir violence in Karachi
1987	India	Hindu–Muslim riots in Meerut
1988	Burundi	Killing of Hutus
1989	Uzbekistan	Anti-Meskhetian Turks
1990	Kyrgyzstan Tajikistan	Anti-Uzbek riots Anti-Armenian riots
1994	Ghana	Konkomba against Dagomba, Nanumba and Gonja
1997	Indonesia	Anti-Madurese in West Kalimantan
1998	Indonesia	Anti-Chinese in Jakarta
1999	Indonesia	Repeat riot of 1997
2002	Indonesia	Between indigenous Dayaks and migrants in Sampit
2004	Nepal	Anti-Muslim riots

The anatomy of ethnic riots is mounted on hate. The perpetrators humiliate the victims even after their death by forcing accumulated aggressive energy to get the feel of positive control. Surprisingly, most of the nations that are victims of ethnic violence are under the much-touted about form of governance—democracy. Riots are premeditated with good funding to provoke and participate. Rioters are primarily internal mercenaries involved in a hate campaign with a cause. There could also be people on hire from outside. Ethnic riots when highly organised become ethnic warfare. Examples are the so-called ethnic cleansing of the 1970s and 80s in Eritrea, and the 1990s in Liberia, Bosnia and Georgia. Riots are followed by rumours. It is important for governments to understand the damage that rumours can cause. Here, ethnic security correlates with another element of national security explained later—informational security. Rumour is powerful and can distort accuracy of information. Ethnic security becomes a serious issue when there is state neglect against a particular ethnic group. State neglect slowly leads to

persecution of other groups, basically aimed at suppressing them out of fear that they may gain control if otherwise. There are no solutions for state sponsored ethnic insecurity. It is an irony in national security management and can be done only by those states where the concept of national security is not clearly understood or the governments perform under decadent belief systems. Most countries orient the subject to religious issues only, whereas ethnic security as an element of national security correlates all aspects of human discrimination. Ethnic violence is not restricted to a particular country or regime. It is common. India, the world's largest democracy and the innovator of non-violence as an instrument of power, is ethnically postured as a violent country. India goes through ethnic riots the way seasons change. Jawaharlal Nehru, India's first premier constituted the National Integration Council (NIC) against the backdrop of the communal riots in Jabalpur in 1962–1963 as a major apex body to look into frayed communal tempers. But problems of ethnic insecurity continue to be rampant in India in various forms.²³ The recorded conflicts are among religious, linguistic and caste based communities. In Pakistan, the non-Punjabi front had passed a resolution to explain Pakistan as a “multinational entity.” According to them the three evils of Pakistan are the army, intelligence agencies and the Punjabis. There are 20 million Muhajirs in Pakistan (2004). They are considered to be the descendants of the creators of Pakistan. The ethnic divide is between the Punjabis and the rest that comprise Baluchis, Sindhis, Pashtoons (NW), Seraikis and Muhajirs.²⁴ There are many national societies in the world that are too diverse and fractious with a huge minority. India is one of them. The United States has its share of almost all the worlds' people in its society. Ethnic diversity is a reality in a human system. A nation that is not on terms with its ethnicity and gets swayed by perverse belief systems may find it difficult to manage its national security issues.

HATE AND ETHNICITY

Hate is not dislike. It is above that. It is a perfect emotion that destroys everything around it in a chain reaction. Human beings cause damage to themselves by hate unseen among other forms of life. Violence, oppression, torture, genocide, terrorism, riots, etc., are only parts of hate-induced activities. The primitive areas of the brain (the reptilian brain), is said to be responsible for hate. If that is so, why is hate seen more as a symbol of the modern human behaviour? Why do the reptiles not show hate? Why is hate almost absent in the tribals where the emotion is replaced by anger and insecurity of sorts? In every aspect, hate as an emotion, may be necessary by some unknown design for survival. Psychologists attribute hate with meaning systems that proliferate any large population.²⁵ A fanatical meaning system is considered to be a misguided religious interpretation. A meaning system is also the belief system of a society. Hate resides there if the belief system is moulded for it. Coming back in support of socio-psychological authors, hate can be a primitive emotion that measures the flight or fight personalities (avoidance or non-avoidance)

for survival and reproduction, the prime directives of evolution.²⁶ Flight or fight response is guided by fear, whereas hate is a kind of anger phobia. Phobias are safety mechanisms of the ancient world. They accurately signalled the presence of danger like taste buds learnt to distaste toxic berries. Later, in the advanced human life, precautionary warnings ended up as phobias in the diverse and complicated human mind. In hate, there is negative judgment and permanent registration of design. Ethnic hate lingers under this principle. A person hates another depending upon the prejudice, without reasoning that every one is physiologically identical. For Charles Darwin, hate was an emotion more complex than fear, disgust, anger, joy and sadness.²⁷ Hate surfaces in a society comprising of hate communes where there are people of ethnic diversity that indulge in hate campaigns and meaning systems. Ethnic security needs a special facelift under such circumstances. It is possible by relieving hate from the system by means that are subject to national security maximisation. Hate is a complicated emotional behaviour that lingers on for a long period of time, sometimes the entire life span of an individual. It is associated with revenge and vindictive behaviour and strikes every moment in a society. Isolated humans like the American Indians were hunted out like wild animals from their properties and disgorged from existence in bloody hate wars. Terrain boundaries provide a claustrophobic scenario for a number of hate groups in the ethnic matrix of a country. Each finds it suffocating to be with another group whom they hate. There are many examples. Ethnicity-induced claustrophobia within a national boundary was evident in America. Smaller space limited boundaries can be seen in prison and inner city behaviour.²⁸ The psychology of hate is not the cause of ethnic issue. It applies to it. The subject of hate and its influence to ethnic security therefore, has to be seen along with other emotions like jealousy, envy, anger, fear, frustration, etc. that controls the human emotional mind in a conditioned manner. In a normal scenario of ethnic violence, a group of people who otherwise were perfectly normal, kill the male members. They gang rape women in front of their children before murdering them in cold blood. Babies are thrown into fire in front of their screaming mothers before they too are murdered. And there are the people in the hate induced human drama charged with the responsibility to enforce law and order under the constitution. They may watch the unfolding scenario of hate merely as spectators. It has happened in many countries and will continue under the law of invariance in human system. The build up of hate can take place in any weak moment. It was only a moment in his life for the young Russian, searching for his missing sister in the carnage in Beslan where a premeditated attack was made on innocent school staff and children in which about 338 people were killed in September 2004. In his traumatic moment of unsuccessful search he wailed, "If I see a Chechen or Ingush, I will kill him, or his mother or his son."²⁹ Hate has entered the inner walls of his mind. It will remain there for generations to carry on through mental signatures. One day, many years from now, a Chechen or an Ingush will pay for it without being aware of the carnage

in Beslan.³⁰ Perhaps the backlash may come from a distant descendent of the man who said, “If I see...” Hate is sown.

SURVIVING JEALOUSY AND ENVY IN AN ETHNIC SOCIETY

Before considering the import of envy and jealousy in the emotional aspect of people in ethnic security matters, it is necessary to understand the difference between the two terms. Both are individual emotions and not societal as an organised behaviour pattern. They are deep-rooted emotions that cannot be easily interpreted. Envy makes one feel uneasy at the gain of another that the envious individual cannot achieve whereas, jealousy is the emotion that one feels when another is gifted with gains that the jealous individual has been denied by unfavourable chance. In envy, there is an absence of gain whereas, in jealousy, there is a loss—both are felt. Though embedded deeply in the individual’s psychological framework, these emotions can be ignited passionately by the perpetrators of violence—militia, terror gangs, unions, political ideologies, fanatic antagonists, etc.—against those who they consider are better placed.

CLASH OF CULTURES (CLASH OF ETHNICITY)

Ethnicity in the sense of national security covers every aspect of divide or isolation between the citizens of a nation. However, the global approach to ethnicity is still based on culture and the clashes that occur relative to cultural differences. In the United Nations’ perspective, it is an econo-political issue and cannot be achieved without political will.³¹ Human development bodies believe cultural liberty is the basic ingredient for security in a diverse world. This deals with governance from the governments point of view—those related to religious beliefs and cultural differences as in the case of Sunnis, Shiites and Kurds in Iraq, languages in Afghanistan, dealing with Sharia law in Nigeria for awarding death sentence to the accused in adultery, issue of Muslim headscarves in France, assimilation of Hispanics in the United States, handling mounting pressures from indigenous peoples in New Zealand or Bolivia, the Tamil–Sri Lankan and Sinhala accords for peace, etc. Clash of cultures in the sense of national security is considered clash of ethnicity in this book. Ethnic liberty is vital for national security; one’s identity by sex, language, religion, culture, etc., is hidden in it. In the multiplicity of ethnic elements, it is the path in search of opportunities in life in equal terms that an individual can achieve. Privileges meted out by the government to less privileged people take away the opportunity from others making them feel less privileged. The measures taken to contain ethnic conflicts thus become the cause for new ethnic conflicts. Even in the absence of conflicts simmering discord prevails within the society only to surface at times when patience gets exhausted. Suppression of ethnic identity as part of state policy, directly or indirectly, harms the fabric of governance permanently. The result is furthering economic, political and social

discrimination. This causes the suppressed to unite and rise in political identity only to repeat the mistakes of governance that made them to rise in the first place. In national security, the broadest identity one can get is as a citizen of a nation and within this identity it should be possible to make good the shortcomings, if any, in the other identities of an individual. This way, a top down approach is possible to reach at the single-most identity as an individual in the ethnical mindset. In the reverse, it starts at the bottom with, “I am a woman” or “I am a man,” to the finding of one’s own nationality and finally as a global citizen. Such identification is not an idealist’s way of expression or spiritual discourse but a mathematical persuasion of ethnic identity bonding with oneself and others. Ethnic diversity is connected to the ethnic identity of an individual when freed from the clutches of discrimination. Humans are capable of accommodating any number of ethnic diversity, not only with oneself, but also with others with whom they co-exist. It is the discrimination that sets in by primarily external behaviour in a group that makes them feel that they are losing their ethnic liberty. If that can be prevented, ethnic liberty will become the binding force for nation building.

ETHNIC SECURITY—POSITIVE AND NEGATIVE SIGNALS

There are positive examples of ethnic security. An example is in the state of Mizoram, India. This state in a short span of time has reportedly overtaken all the other states in India in the well-being of its people. The state was in turmoil. It was reeling under insurgency in the 80s when the Mizo National Front (MNF), a party that was advocating militancy, went underground. It ended in 1986 when New Delhi brought in a peace agreement with them. It was conscious governance balancing with social feelings that had attributed to the success story.³² Emotional balance can erase the feelings of hate and helplessness. While positive signals are collector’s items in ethnic security, the vibes are generally negative. What tops it all is a reported ridicule by a radio station in the world’s oldest democracy and the superpower—the United States. A popular New York radio station had reportedly aired a song with the following lyrics ridiculing the 2004 tsunami deaths in Asia and Africa:³³

*There was a time, when the
Sun was shining bright
So I went down to the beach
To catch me a tan.
Here, the next thing I knew,
A wave of 20 feet high,
Came and washed your whole country away.
And all at once, you can,
Hear the screaming chinks.
And no one was saved from,*

*The waves.
 There were Africans drowning,
 Little Chinamen swept away.
 You can hear God laughing.
 "Swim you bitches swim."
 [Chorus]
 "So now you are screwed. It's
 The tsunami.
 You better run and kiss your
 A** away.
 Go find your mommy.
 Just saw her float by,
 A tree,
 Went through her head.
 And now your children will be,
 Sold into slavery."*

The radio station reportedly regretted airing the song when bound by protests.³⁴ Human systems can even retard with time. In the reported ostracisation of the AIDS patients in Kerala, the most literate and comparatively affluent state in India, the bodies of the dead were unwelcome in the Catholic Church's cemetery grounds. Such prejudices of ethnicity even in death are a matter of dismay according to an editorial.³⁵

CONCLUSION

Ethnic security, in its appreciated form emerges from religious belief systems. But, it is beyond religion as an element of national security. Ethnicity is the differential attitude of a person towards another based on differences under a belief system. It is important for macro-strategic analysis to understand that there are only a few formed major religious beliefs in the world: Zoroastrianism, Jainism, Buddhism, Christianity, Islam and Sikhism, in that order. The rest are natural (original) people who stick to their original culture, though the world considers their cultures as their religions. It will be hard for another religion to come by in future. How religions will turn in future is not the subject of this book. Hence, religion in ethnic security is just another item. It is the differences attributable to a person and the disharmony associated with it in a group that cause problems to the overall well-being of an individual. An interesting observation is that in every form of ethnic violence, the victims are different from the enemy. The enemy is the hidden objective cause, not the riot victim—or to some extent the frustrated "self" under the grinding ethnic urge. The victims that suffer are faceless shadow enemies.

Notes

¹ P.I. Rajeev, "Still Battling for Honour on 55th Anniversary of Mutiny," *The Indian Express*, Mumbai, 19 February 2001.

² United Nations Development Programme, *Human Development Report 2000*, Oxford University Press, New Delhi, 2000, p. 1. According to the report, one of the seven freedoms is "freedom from discrimination—by gender, race, ethnicity, national origin or religion. In this study, the author chooses to confer discrimination by all means to one term: ethnicity.

³ Adam Roberts and Richard Guelff (eds), *Documents on the Laws of War*, Clarendon Press, Oxford, 1989, p. 158.

⁴ "How can Shared Values and New Security Strategies Reduce Ethnic Conflict and Terrorism?" *www.geocities.com*, July 2000.

⁵ Eric Beauchemin, "Child Soldiers of Liberia," *www.mw.nl*, May 2001. According to reports, there are 300,000 child soldiers in 30 countries in the world (2001).

⁶ Jodi L. Jacobson, *Closing the Gender Gap in Development*, Linda Starke (ed.), *State of the World, A World Watch Institute Report on Progress Towards a Sustainable Society*, W.W. Norton and Company, New York, 1993, pp. 75–76

⁷ A TV channel in India showed the charred body of a village woman who took her life by immolating herself (22 October 2004) in India. The news announced that an intruder raped her in her house. The society thereafter shunned her. She had no choice or will left to live. She killed herself. Such stories and atrocities against women are abundant in the world today. It is not isolated to India. Gender inequality and female vulnerability against men are serious ethnic issues of differences.

⁸ Kuldeep Mann, "Boy, What a Sorry Mess!" *Hindustan Times*, New Delhi, 24 October 2004, p. 6.

⁹ Rasheeda Bhagat, "Whose Honour is It Anyway?" *The Hindu, Businessline*, New Delhi, 3 January 2003, p. 9.

¹⁰ "U.K. Sikh Accused of Honour Killing Bid," *The Asian Age*, New Delhi, 1 December 2004, p. 1.

¹¹ Sanchita Sharma, "Gender Bias from Birth," *Hindustan Times*, New Delhi, 30 November 2004, p. 17.

¹² Jacobson, n. 6, p. 81.

¹³ Ibid.

¹⁴ Ibid.

¹⁵ Ibid. p. 84.

¹⁶ Ibid. p. 83.

¹⁷ Donald L. Horowitz, *The Deadly Ethnic Riots*, Oxford University Press, New Delhi, 2001, p. 9.

¹⁸ Ibid. p. 12.

¹⁹ This is an example of the power of the state against organised mass movements challenging its policies or motives. The Tiananmen Square incident was not a riot situation, but a massive rally that started as a peaceful march of students advocating democracy and freedom. Tiananmen Square is one of the largest public squares in the world, situated in Beijing, China. Students gathered there chanting slogans of democracy. The government called in troops after negotiations with student leaders failed. The peaceful demonstration turned to violent attacks on the forces. The demonstration was suppressed by brutal use of

force on 4 July 1989. Was it a coincidence that it was Independence Day for the United States? Is there a geostrategic message in the demonstration and suppression? Was it a covert move? If so, who backed it?

²⁰ Horowitz, n. 17, p. 13.

²¹ Ibid. p. 16.

²² Compiled from information from Horowitz, n. 18, *www.cnn.com*, and Rodney Castleden, *World History*, Paragon, London, 1994.

²³ Asghar Ali Engineer, et al., in Letter to the Editor, *The Indian Express*, Mumbai, 3 May 2001, p. 6.

²⁴ Ibid.

²⁵ Rush W. Dozier Jr., *Why We Hate*, Tata McGraw-Hill Publishing Company, New Delhi, 2003, p. 13.

²⁶ Ibid. p. 15.

²⁷ Ibid. p. 20.

²⁸ Ibid. p. 21.

²⁹ "Russia Mourns Hostage Killings, Questions Mount for Putin," *Mid-Day*, New Delhi, 5 September 2004, p. 11.

³⁰ Russia better watch out. The situation in Russia's Muslim dominated northern provinces is very conducive for break up and further disintegration of the country. The insurgents obviously enjoy support from outside the country.

³¹ United Nations Development Programme, *Human Development Index 2004*, Oxford University Press, New Delhi, 2004, p. v.

³² Editorial, "Mizoram Model," *The Times of India*, Mumbai, 16 August 2004, p. 12.

³³ Agencies, "Global Outrages as US Radio Ridicules Tsunami's Victims," *Mid-Day*, Mumbai, 27 January 2005, pp. 1, 7.

³⁴ Ibid.

³⁵ Editorial, "Forsaken Sheep," *Hindustan Times*, New Delhi, 29 April 2005, p. 10.

19

Environmental Security

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Environment is defined as the aggregate of all external conditions and influences that affect the life and development of organisms.¹ Fortunately, the responsible world is aware of the effects of environment on survival of life on the planet. There is focused attention on major environmental issues. When localised, the issues are those that affect the territorial integrity or political stability of a nation such as disputes over scarce water resources, or rehabilitation of hapless refugees fleeing a degraded environment in search of a better life.² National governments have to see the global impact of environment while managing environmental security.

ENVIRONMENTAL SECURITY: THE THIRTEENTH ELEMENT

Environment, in its natural state, has its complex physical, chemical and biotic factors that act upon an organism or an ecological community and ultimately determine its form and survival.³ Environmental security relies more on the protection and preservation of the environment to make it more potent for sustainable development and survival of life on earth than on response activities. Currently, environmental security, in its serious sense, is applicable to the three geophysical terrains—land, ocean and air space. It is yet to extend seriously to the non-geographical, though physical, outer space. There are already concerns of outer space becoming an overhead (Albert Einstein may not favour this expression) junkyard of space vehicles, burnt-out rockets, slipped-off screwdrivers and other knick-knacks. It may be a short gap before the world communities seriously take note of clean outer space contiguous to the air space. Outer space is the terrain through which the earth gets blasted every moment with harmful radiation. The ozone layer at the outer border of air space acts as an armour, protecting the planet from harmful rays. It is reported that ozone depleting gases have pierced the ozone layer creating a hole that is likely to expand, over the South Pole.

CHALLENGES TO ENVIRONMENTAL SECURITY

Ironically most of the challenges to environmental security originate from activities meant to improve standards of human life.⁴ Identified causes are:

- (a) Rise in population and their insatiable need for resources
- (b) Clash of developmental projects with the environment
- (c) Overuse of renewable resources
- (d) Wasteful use of resources
- (e) Use of environment damaging resources including fuel
- (f) Terrain abuse
- (g) Inability to appreciate the interactive matrix of the geophysical terrains
- (h) Disasters that cause permanent changes in environment
- (i) War and military preparations
- (j) Casualties, and acts of sabotage and terrorism
- (k) Toxic wastes and hazardous materials
- (l) Problems of legislation and enforcement
- (m) Global warming and climate change

Population Growth

Population growth induces pressure on the environment, thereby making the policies and measures inadequate for its protection and regenerative preservation. Though there is a different school of thought advocating that population, if controlled and made supportive, is good for a nation. An oversized population increases demand for resources and energy.

Development and Environment

Developmental work often encroaches into sustainable and life-supporting environmental areas. The result will be destruction of life-sustaining habitats.

Resource Usage

Over consumption, exploitation and wastage of resources can leave a telltale effect on the world permanently.

Terrain Abuse

Terrain abuse in developmental and habitation activities is far too common. Degradation of land, air and ocean is a much feared subject.

Lack of Appreciation of the Interactive Matrix of Geophysical Terrains

The three geophysical terrains are environmentally interactive. Activity in one can cause collateral damage in another. This has to be understood.

Disasters

While a disaster-free world is hard to imagine, the beginning of a solution for environmental security is based on the principles of zero disaster policies.

War and Military Preparations

War and military preparations can cause serious damage to the environment. It has an ancient beginning when the Romans destroyed the fields of Carthage by spreading salt. In the modern world, the United States experimented with chemical weapons and climate modifications in Vietnam. Environmental warfare techniques are quite seriously etched in the memories of the Vietnam War.⁵ In the Persian Gulf War of 1991, the retreating forces of Saddam Hussein intentionally set fire to oil wells causing unprecedented air and water pollution.⁶ The Environmental Modification Convention of 1977 forbids *hostile use of environmental modification techniques having widespread, long-lasting or severe effects as the means of destruction, damage, or injury to any other state party*. Wars can destroy environment. A nuclear winter may follow large-scale nuclear war. Outer space if used for military purposes could be contaminated, making Earth an unsafe habitat.

Casualties, and Acts of Sabotage and Terrorism

An accident can cause serious environmental damage. The accident at the Chernobyl nuclear power station in the former Soviet Union on 25–26 April 1986 was the worst in history so far. Such casualties are bound to happen anywhere and at anytime when human slackness overpowers caution.

Toxic Wastes

Currently, production, trade, use and release of synthetic chemicals and toxic wastes are widely recognised as a threat to human health and environment, but safe handling of these wastes is a neglected practice.

Legislation and Enforcement

Legislation and enforcement calls for stringent laws without affecting the normal “traffic and business” at national and international level. Such laws will also need the backup enforcement that includes a quick delivering judicial system.

Global Warming and Climate Change

Global climate change is considered as one of the major issues that may affect environmental security. The starting point was the alarm caused by the discovery of a hole in the ozone layer over Antarctica in 1985. Chlorofluorocarbons are the principal cause of ozone depletion. According to author Paul Brown, large parts of the civilised world may not survive if global warming is not arrested. Small coastal and island nations are likely to disappear below the rising sea when the ice-caps melt.⁷ James A. McCarthy, an environmental scientist based in Harvard University, predicts that most of the earth’s people will be on the losing side.⁸ There are also voices that say global warming is nothing new, but a cyclic process in which the world gets hot and cold periodically since it has not yet settled down.⁹

STATE OF WORLD ENVIRONMENT

The world environment is a cornucopia of a magnificent array of life that makes life worth living totally engrossed in the mysteries of it all. The geographical terrains—land, ocean and air space—are full of life and life supporting systems. It is a luxury that only the Earth enjoys in its solar system and in the near vicinity. But according to scientific studies, time is running out for the world. Scientists find that certain amphibians—frogs, newts (Chinese crocodile), toads and salamanders—are fast becoming extinct.¹⁰ It is bad sign like a canary flapping its wings one last time in a mine-shaft. The world environment's biggest problem today is that it is not showing any signs of recovery though there are some isolated signs of the vanished coming back. Dying coral reefs, later autumns, endangered species, winter without a nip, global warming, erratic monsoons, widening deserts, shifting icebergs, coal bed and forest fires, hazy days, etc., have started to affect plant and animal life across the planet. In the last century, temperatures have risen around 0.6 degrees Centigrade. Most of it was in the last 30 years.¹¹ It is predicted that 2007 will be the hottest year so far. Migrating birds are changing their travel plans cancelling bookings *en masse* much to the chagrin of their travel agents. Britain's Met office predicts the temperature rise will be between 1.4 to six degrees in the next century depending on the emission policies of governments. There are some species like painted turtle whose future is bleak even at a modest rise of temperature. Climate change in the previous period like the Ice Age, effected life differently. Today, there are seven billion people on Earth. Migration corridors are blocked for people. There is no place to run. Hiding is not a solution. There is no way for the chromosomes to crawl across and replicate like in the days of yore when people just got up and walked across continents. There were places to go freely in those good old days before the local environment went pop. The vastness of the environment and its flora and fauna are reportedly dwindling. Some of them may be by natural causes of the selection process. But most are the result of unregulated human intervention. Flora and fauna are indicators of the environment; conservation is the remedy. There is unprecedented danger of the natural process interacting with human-induced processes causing a resonance that can be dangerous at a certain stage. It is yet to be studied. Fresh water and wetlands are drying up or being filled by construction requirements. Along with them, the fresh water and adjacent land-based flora and fauna also vanish or get displaced to alien terrains where survival becomes difficult. Wild beasts enter urban sectors in an unusual invasion of the displaced. There are incidents in the cities of Mumbai and Nasik in India, where leopards from the displaced wild parks in the neighbourhood, go hunting in the city for prey and often get lynched by frenzied mobs. Artificial dams and irrigation barges besides causing flash floods in the neighbourhood also strangle water borne animals. Animals like fresh water dolphins and dugongs get fragmented with free passage restricted. Their population dwindles. Today, there are only four species of fresh water dolphins seen around

the world and that too in very limited numbers: the Ganges River dolphin (*susu*), the Indus River dolphin (*bhutan*), the Yangtze River dolphin (*baiji*), the Amazon River dolphin (*boto*).¹² Besides getting depleted, water sources are also becoming contaminated at an unprecedented level. Arsenic aquifers are expanding around many of the river basins. They cause cancer to the people who live by such waters. Regulation of tube wells and better management of water is a way out. Arsenic accumulates by oxidation, reducing the condition of aquifers, microbial activity and organic inflow. Bangladesh is the most affected. According to the WHO, within a few years one in 10 deaths in south Bangladesh will be caused by cancer triggered by arsenic poisoning. Better nutritional care—food security—is a remedy.¹³

The state of the world's forests is another area of concern. Forests are benefactors of the living. How much forest is required for a human settlement is a subject that is not yet studied. But forests also deplete water resources. Optimum forests for a nation depend upon purpose. It is possible to increase the natural resources by adding forests. For example, arid landscape can be changed by creation of forests. According to Greenpeace, the international non-governmental organisation with a high profile interest in the environment, ten million hectares of ancient forests are destroyed every year.¹⁴

It is reported that ice-caps are melting. Greenland's melt-zone has expanded inland.¹⁵ This can accelerate the flow of melted water into the liquid sea. The floating ice is also thinning rapidly and such melting can speed up the seaward movement of ice. There is a need to control the discharge of icebergs into the sea. There are scientists who believe that global warming is already pushing the North Atlantic toward instability. In less than 50 years, waters deep in the North Atlantic and Arctic have become significantly fresher, matched by increasing salinity in the tropical Atlantic. Worldwide seas have absorbed enormous amounts of heat from the warming atmosphere. A big outflow of water from Greenland could take the system to a tipping point.¹⁶ The result will be deep chills and abrupt and random precipitations. There could be monumental floods from collapsing ice age glaciers. There is quite an intellectual uncertainty in defining the future since model preparations are too complicated with variables that cannot be easily ascertained.

Far in the ocean, the coral reefs are facing the brunt of both nature with the mysterious El Niño and humans who damage them by unregulated practices. Fishing using explosives, pollution, recreation and physical damages have dwindled the coral reefs of the world that were breathtaking ecosystems by themselves. Corals are the barometers of climate change. Warm, ocean waters bleach them. In a worst case, 16 per cent of the world's reef building corals died in 1998. Oceans support an incredible array of life in various shapes and sizes—from microscopic plankton to the largest of the great whales. Each of these species plays a unique role in the complex marine ecosystems. But many species are being (or have been) driven towards extinction due to devastating human impacts: over-fishing, pollution and commercial whaling among others.

Each region in the world is specific for its diversity in ecosystems. The region of Asia and South Pacific is a very diverse world in itself. Indonesia is thought to support more species than any other country, closely followed by Australia, China and others around the area. Many island nations in the area are highly susceptible to species extinction. While island geography means that species can develop in isolation, it also means that if they are threatened somehow, they could be wiped out. Nearly a third of the region has no access to safe water. Central Asia is already using 85 per cent of available water, and South Asia nearly half. Per capita availability of water has dropped by 70 per cent in Central and South Asia since 1950. In China, water use is expected to rise by half by 2025. In Australia, water use increased by 25 per cent in the mid-1990s, compared with the mid-1980s. At the same time, the water supply has been degraded, particularly in the Murray–Darling Basin in the southeast. Within 30 years, humans are expected to alter some 75 per cent of the land. Indonesia is experiencing one of the highest rates of deforestation in the world; so also have Malaysia, Myanmar and Thailand. If current trends continue, all of Indonesia's lowland forests in Sumatra will be destroyed by 2005 and in Kalimantan by 2010.

Central and Eastern Europe still have rare wildlife. Many wild lives have already become extinct in Western Europe under pressures of development. Intensive farming and encroachment on natural habitats and run-off from farms are polluting the ecosystems. Western Europe is pricing water at levels that allow for reinvestment and management of an adequate water supply. Eastern Europe and the former Soviet Union are still using more water per capita than Western Europe. In Eastern Europe, water use is estimated to nearly double by 2025. Overall, water issues have more to do with quality and ecosystems than with quantity, which appears to be sufficient. In Europe, due to dense population and centuries of development only five per cent of the land area is designated as protected area. Finland, Germany, Norway, Poland and Sweden are regional leaders in logging practices aimed at keeping forest ecosystems healthy.

Canada and the United States are doing more to protect wetlands that are critical habitats for many species, but these are still being lost to agriculture and construction. In North America, the United States and Canada are the largest per capita consumers of freshwater. Supply has been abundant in the past. That might change. The High Plains aquifer, which waters a fifth of US farmland, is expected to decline dramatically. Pollution, invasive species and cheap water add to the stress in the region. In North America, some 14 per cent of the region's land is protected. Only northern Canada has vast unspoiled areas, but Canada and the United States are adopting practices that aim to selectively harvest forests while sustaining them for the long-term.

In Africa, more than half the population has no access to safe water, fewer today than in 1990, and almost half suffer from water-related diseases. In West Africa, pollution and falling water levels threaten millions dependent on the Niger and Volta rivers. In southern Africa, water use is expected to rise by half by 2025.

Another key area of threat is the invasion by non-native species that overtake an ecosystem. In Africa, half of the endangered or threatened species are at risk from non-native species. The numbers of species have declined as their land range is reduced by forest clearing, civil war and draining of wetlands for farming and urban development. Consumption of wildlife is also reducing numbers to unsustainable levels. In Central Africa, it is estimated that more than a million tonnes of wildlife—mainly antelope, wild pigs and primates—are killed for food each year. An estimated eight per cent of the continent's forestland was lost during the 1990s. Some seven per cent of the continent is designated as protected, but most countries do not have the resources to protect wildlife from poachers, the ravages of civil war and forest clearing.

Latin America and the Caribbean hold some of the world's biologically richest land areas. Brazil, Colombia, Mexico and Peru are home to 75 per cent of the threatened bird species in the Americas. Due to fast population growth, the region's major environmental problem of the next decade is expected to be a shortage of drinking water. In Mexico City, shortages are magnified by poor drainage, which allows sewage and rainwater to mix. In Latin America, the United Nations expects the region to be the hardest hit, with more than 80 per cent of its land surface altered by humans within 30 years. Currently, around 10 per cent of the land is designated as protected area.

In a global scenario, a 2002 UN report warned that nearly a quarter of all known mammal species and 12 per cent of all known bird species are threatened. The biggest factors in species decline are forest clearing, climate change, pollution, over-hunting and fishing and the introduction of non-native species. Global population has altered nearly half of Earth's landmass over the past 150 years and the amount could rise to 70 per cent within 30 years. That is probably the biggest factor in the decline of species. Alterations include farming, logging and urban development.

In the Middle East, coastal and marine wildlife are threatened by oil spills and other pollution, dredging and non-native species brought in accidentally by shipping traffic. Land species have declined due to over-hunting, due in part to a loss of traditional management practices and the use of four-wheel drive vehicles. This area is likely to be the worst affected worldwide, with well over 90 per cent of the population expected to be living in areas with "severe water stress" within three decades. Increasing populations are adding to the problem, leading to regional tensions. Syria and Iraq, for example, accuse Turkey of depriving them of water by building dams along the Euphrates and Tigris rivers. Habitat destruction has increased dramatically since the 1970s due to population growth. Water use, pollution and refugee camps have shrunk the Azraq wetlands natural reserve. In the eastern Arabian Peninsula, many of the date palm oases and freshwater springs have been lost. The United Nations estimates that if the trend continues, by 2025 five billion people—half of the world's estimated population—will live in areas

where there will be little or no access to drinking water. Key factors are population growth, changing weather patterns and how water is managed.¹⁷

ENVIRONMENTAL INITIATIVES

Throughout history, national governments have passed occasional laws to protect the environment. In about 80 AD, the Senate of Rome passed legislation to protect the city's supply of clean water for drinking and bathing. In 14th century England both the burning of coal in London and the disposal of waste into waterways was prohibited. In 1681 the Quaker leader of the English colony of Pennsylvania, William Penn (1644–1718), ordered that one acre of forest be preserved for every five acres cleared for settlement and in the following century, Benjamin Franklin¹⁸ (1706–1790) led various campaigns to curtail the dumping of waste. In the 19th century, in the midst of the Industrial Revolution, the British government passed regulations to reduce the deleterious effects of coal burning and chemical manufacture on public health and the environment. Yet, despite this long history of environmental legislation, the field of environmental law is relatively new. Its rise to prominence began in the late 20th century.

Prior to the 20th century, there were few multilateral or bilateral international environmental agreements. The accords that were reached focused primarily on boundary waters, navigation and fishing rights along shared waterways, and ignored pollution and other ecological issues. In the early 20th century, conventions to protect commercially valuable species were reached, including the Convention for the Protection of Birds Useful to Agriculture (1902), signed by 12 European governments; the Convention for the Preservation and Protection of Fur Seals (1911), concluded by Japan, Russia, the United Kingdom and the United States; and the Convention for the Protection of Migratory Birds (1916), adopted by the United Kingdom (on behalf of Canada) and the United States and later extended to Mexico in 1936.

Beginning in the 1960s, environmentalism became an important political and intellectual movement in the West. In the United States, the well-known biologist and writer Rachel Carson's (1907–1964) *Silent Spring* (1962), passionate and persuasive examination of chlorinated hydrocarbon pesticides and the environmental damage caused by their use, led to a reconsideration of a much broader range of actual and potential environmental hazards. In subsequent decades, the US government passed an extraordinary number of environmental laws—including acts addressing solid-waste disposal, air and water pollution and the protection of endangered species—and created an Environmental Protection Agency (EPA) to monitor compliance with the laws. These new environmental laws dramatically increased the national government's role in an area previously left primarily to state and local regulation.

In Japan, rapid post-World War II re-industrialisation was accompanied by the indiscriminate release of industrial chemicals into the human food chain in

certain areas. In the city of Minamata for example, large number of people suffered mercury poisoning after eating fish that had been contaminated with industrial wastes. By the early 1960s, the Japanese government had begun to consider a comprehensive pollution control policy and in 1967 Japan enacted the world's first such overarching law, the Basic Law for Environmental Pollution Control. Not until the end of the 20th century was Minamata declared mercury-free.

Following the United Nations Conference on the Human Environment, held in Stockholm in 1972, the UN established the United Nations Environment Programme (UNEP) as the world's principal international environmental organisation. Although UNEP oversees many modern-day agreements, it has little power to impose or enforce sanctions on non-complying parties. Nevertheless, a series of important conventions arose directly from the conference, including the London Convention on the Prevention of Pollution by Dumping of Wastes or Other Matter (1972) and the Convention on International Trade in Endangered Species (1973).

Until the Stockholm conference, European countries generally had been slow to enact legal standards for environmental protection—though there had been some exceptions, such as the passage of the conservationist Countryside Act in the United Kingdom in 1968. In October 1972, only a few months after the UN conference, the leaders of the European Community (EC) declared that the goal of economic expansion had to be balanced with the need to protect the environment. In the following year the European Commission, the EC's executive branch, produced its first Environmental Action Programme. Since then the European countries have been at the forefront of environmental policy making. In Germany, for example, public attitudes toward environmental protection changed dramatically in the early 1980s when it became known that many German forests were being destroyed by acid rain. The environmentalist German Green Party founded in 1980 won representation in the Bundestag (national parliament) for the first time in 1983 and since then has campaigned for stricter environmental regulations. By the end of the 20th century, the party had joined a coalition government and was responsible for developing and implementing Germany's extensive environmental policies. As a group, Germany, The Netherlands, and Denmark—the so-called “green troika”—established themselves as leading innovators in environmental law.

During the 1980s, the “trans-boundary effects” of environmental pollution in individual countries spurred negotiations on several international environmental conventions. The effects of the 1986 accident at the nuclear power plant at Chernobyl in Ukraine (then part of the Soviet Union) were especially significant. European countries in the pollution's downwind path were forced to adopt measures to restrict their populations' consumption of water, milk, meat and vegetables. In Austria, traces of radiation were found in cow's milk as well as in human breast milk. As a direct result of the Chernobyl accident, two international agreements—the Convention on Early Notification of a Nuclear Accident and the Convention

on Assistance in the Case of Nuclear Accident or Radiological Emergency, both adopted in 1986—were rapidly drafted to ensure notification and assistance in the event of a nuclear accident. In the following decade, a Convention on Nuclear Safety (1994) established incentives for countries to adopt basic standards for the safe operation of land-based nuclear power plants.

There are often conflicting data about the environmental impact of human activities, and scientific uncertainty often has complicated the drafting and implementation of environmental laws and regulations, particularly for international conferences attempting to develop universal standards. Consequently, such laws and regulations usually are designed to be flexible enough to accommodate changes in scientific understanding and technological capacity. The Vienna Convention for the Protection of the Ozone Layer (1985) for example, did not specify the measures that signatory states were required to adopt to protect human health and environment from the effects of ozone depletion, or mention any of the substances that were thought to damage the ozone layer. Similarly, the Framework Convention on Climate Change, or Global Warming Convention, adopted by 178 countries meeting in Rio de Janeiro at the 1992 United Nations Conference on Environment and Development (popularly known as the Earth Summit), did not set binding targets for reducing emission of the greenhouse gases thought to cause global warming.

In 1995, the Intergovernmental Panel on Climate Change (IPCC), which was established by the WMO and the UNEP to study changes in the Earth's temperature, concluded that, "the balance of evidence suggests a discernible human influence on global climate." Although cited by environmentalists as final proof of the reality of global warming, the report was faulted by some critics for relying on insufficient data, for overstating the environmental impact of global warming, and for using unrealistic models of climate change. Two years later in Kyoto, Japan, a conference of signatories to the Framework Convention on Climate Change adopted the Kyoto Protocol, which featured binding emission targets for developed countries. This was a system whereby developed countries could obtain credit toward their emission targets by financing energy-efficient projects in less developed countries (known as joint implementation), clean development mechanisms, and emissions trading. The protocol encountered stiff opposition from some countries, particularly the United States, which has failed to ratify it. The protocol came into force on 15 February 2005.

CONCLUSION

Though many life forms have become extinct, the environment inherited by humans and other life forms is still vast and miraculous. The new threat to the environment is the human developmental activities. A solution has to come from the people-oriented grass-root and community actions under national security governance. The following are the most important and pressing environmental problems.

- *Food chain collapse*
- *Changing currents*
- *Acidification*—The lowering of soil and water pH due to acid precipitation and deposition usually through precipitation; this process disrupts ecosystem nutrient flows and may kill freshwater fish and plants dependent on more neutral or alkaline conditions.
- *Aerosol*—A collection of airborne particles dispersed in gas, smoke or fog.
- *Deforestation*—Clearing away trees from forests.
- *Asbestos*—Increased use of this carcinogenic mineral for domestic and industrial use.
- *Destruction to bio-diversity*—Loss of bio-diversity reduces an ecosystem's ability to recover from natural or human-induced disruption.
- *Reduction in bio-indicators*—Bio-indicators show the general health of a habitat. It is also indicative of biomass—the total weight or volume of living matter in a given area.
- *Increased use of chemicals*—As fertilisers, industrial chemicals, defoliates and toxic waste, presence of harmful chemicals damage environment.
- *Desertification*—The spread of desert-like conditions in arid or semi-arid areas, due to overgrazing, loss of agriculturally productive soils or climate change.
- *Dredging*—The practice of deepening an existing waterway; also, a technique used for collecting bottom-dwelling marine organisms (e.g. shellfish) or harvesting coral, often causing significant destruction of reef and ocean-floor ecosystems. Such practices are increasing causing harm to close shore habitats.
- *Drift net fishing*—Drift nets extent to miles at sea and results in over fishing and waste of large populations of non-commercial marine species (by-catch). Drift nets sweep the oceans clean.
- *Effluents*—Effluents are waste materials, such as smoke, sewage or industrial waste which when released into the environment become harmful pollutants.
- *Endangered species*—The list of endangered species in the world is alarmingly lengthening.
- *Fresh water depletion*—Serious water stress is felt and being predicted in future.
- *Mineral depletion in fresh water*—Available water in most part of the world is with very low soluble mineral content.
- *Greenhouse gas*—The greenhouse gas traps infrared radiation in the lower atmosphere causing surface warming. Primary greenhouse gases in the atmosphere are water vapour, carbon dioxide, nitrous oxide, methane, hydrofluorocarbons and ozone.

- *Overgrazing*—The grazing of animals on plant material faster than it can naturally re-grow leading to the permanent loss of plant cover, a common effect of too many animals grazing on limited land.
- *Ozone shield*—The shield is a layer of the atmosphere composed of ozone gas (O₃) that resides approximately 25 miles above the Earth's surface and absorbs solar ultraviolet radiation that can be harmful to living organisms.
- *Poaching*—Illegal killing of living organisms, especially threatened species, for food, trade and games to their extinction.
- *Pollution*—General pollution of environment by waste generated by human activities.
- *Salination*—The concern is on potable water. Salination makes it undrinkable. Such water will also damage crops.
- *Siltation*—This occurs when water channels and reservoirs become clogged with silt and mud, a side effect of deforestation and soil erosion.
- *Slash-and-burn agriculture*—A rotating cultivation technique in which trees are cut down and burned in order to clear land for temporary agriculture; the land is used until its productivity declines at which point a new plot is selected and the process repeats; this practice is sustainable while population levels are low and time is permitted for the renewed growth of natural vegetation; conversely, where these conditions do not exist, the practice can have disastrous consequences for the environment.
- *Soil degradation*—Damage to the land's productive capacity because of poor agricultural practices such as excessive use of pesticides or fertilisers, soil compaction from heavy equipment, or erosion of topsoil, eventually resulting in reduced agricultural productivity.
- *Soil erosion*—The removal of soil by the action of water or wind, compounded by poor agricultural practices, deforestation, overgrazing and desertification.
- *Ultraviolet (UV) radiation*—A portion of the electromagnetic energy emitted by the sun and naturally filtered in the upper atmosphere by the ozone layer; UV radiation has been linked to increasing rates of skin cancer in humans.
- *Water-borne diseases*—A serious threat in areas with untreated water supply.

Notes

¹ Drubajyoti Pati, "Environmental Protection," *Employment News*, New Delhi, 9–15 December 2000, p. 1.

² Joseph J. Romm, *Defining National Security—Non-military Aspects*, Council of Foreign Relations Press, New York, 1993, p. 62.

³ *Encyclopaedia Britannica, Ultimate Reference Suite*, DVD, 2004.

⁴ It is an interesting paradox of existence that what is meant to support a system, in turn and sometimes in the long run, uproots it. The consequential changes are to blame for

this turnaround in any effort or activity. This is an interesting subject and is the basis of chaos theory.

⁵ The outcome of environmental war in Vietnam was the Environmental Modification Convention (ENMOD) and Protocol I to the Geneva Convention. ENMOD was drafted in 1976 (and came into force in 1978) to prevent deliberate manipulation of natural forces during times of war.

⁶ Prabhakaran Paleri, *Environment as a Weapon of War, Point Paper*, (Unpublished), National Defence University, Washington DC, 1994. However it is not clear whether the intention of the Iraqi forces was to deny oil to the enemy or to pollute the environment as a weapon of war. Probably the reason would have been the former as subsequent events show that the targeted objective could be causing an energy crunch, not environmental chaos. Or it could simply be an act of denying booty to the aggressor.

⁷ Paul Brown, *Global Warming: Can Civilization Survive?* University Press (India) Ltd., Hyderabad, 1998, p. 3–4.

⁸ Editorial, “Greenhouse Effect: Baking the Earth,” *The Hindu*, Chennai, 23 February 2001, p. 8.

⁹ *PTI News Scan*, New Delhi, 23 September 2004.

¹⁰ Steve Connor, “The Polluted Planet: Alarm as Global Study Finds One-Third of Amphibians Face Extinction,” *www.news.independent.co.uk*, 16 October 2004.

¹¹ Ed Cropley, “Global warming Hits Species All Over World, says Study,” *The Times of India*, Mumbai, 30 March 2002, p. 12.

¹² Puja Berry, “Panda, Event: WWF-India Releases Book on Marine Mammals of India,” Report by Kumaran Sathasivam, 12 March 2004, April, 2004, p. 7.

¹³ Surojit Mahalanobis, “Poisoned Waters,” Interview with Dipanakar Chakraborti, *The Times of India*, New Delhi, 21 October 2004, p. 16.

¹⁴ “Campaigning in Defence of the Earth,” *Greenpeace Leaflet*, 2004.

¹⁵ Andrew C. Revkin, “Grappling with an Icy Riddle as Big as Greenland,” *The New York Times* articles selected for *The Asian Age*, New Delhi, 19 June 2004, p. 6.

¹⁶ *Ibid.*

¹⁷ *www.msnbc.msn.com*, 10 June 2004.

¹⁸ American public official, writer and scientist.

20

Cyber Security

*One fine day, if artificial intelligence replicates intelligent intelligence,
there is danger writ within.*

Cyber security as an element of national security stands alone in cyber space, an identified terrain of national security that was waiting to happen. Human intellect, in its evolutionary movement forward, could not have stopped short of it anyway. The future of the cyber world and its development are hidden in this statement. Appearance of a new and different terrain in the realms of national security is only the beginning and perhaps, comes with a message that more will follow in the course of time. Though the cyber terrain supports just one element currently—cyber security—there could be more of the genre when human intellect takes unexpected turns, or the element of cyber security partitions further into separate elements. Sun Tzu, Machiavelli or any of the early strategists would have never imagined that such terrains could exist one day. But the strategic principles propounded by the wise people of the past will continue as long as humans remain as modified primates with primitive instincts.

CYBER SECURITY: THE FOURTEENTH ELEMENT

The cyber world became a terrain specific conglomeration when Internet—a wonder that breathed life into the whole system of cyber space, upgraded connectivity in usage. The Internet was born on 19 September 1969,¹ when Berners-Lee conceived the idea of the worldwide web (www) around 1989. He did not patent it for his own reasons. Perhaps the security concern today would not have been so big if he had done that. It would have brought certain restrictions *ab initio* on cyber freedom leading to higher security. On the other hand however, it would have blocked the freedom of operation that has brought such a revolution in information flow. Bernes-Lee called it a “mesh” before changing the terminology to “web.”² This term sounds more appropriate to the problems it can also pose. A web can disorient. That is the real problem with cyber security and where the threat hides. Along with the web, came the browsers, the address—www, interoperable hypertext, e-mail, mark-up language, uniform resource locators (URL), hackers, spams, viruses, bugs, pop-ups, illegal franchises and everything else. The worldwide

web is stand-alone today, which could be because it is licence free. If there were insistence of royalties, there would have been more webs in the world today. But such assumptions are not called for in strategic thinking where reality matters and not opportune realities.³ The single point web system that landscapes the cyber space, therefore, is the underpinning base of cyber security. Cyber space is debasing itself according to cyber watchers. It is used for fraud, sex and swindling—so much technology for lowbrow interests of mass appeal. It has become a graphic haven for abominably written prose, horrific images such as beheading of hostages and the sweaty sensibility of perverts. Hate is sown, bred and harvested in cyber space.⁴ There are other points of concern too. Pornography, news, e-commerce and gambling sites are among the most popular online destinations. People access the cyber world for personal and official reasons.⁵ This is indicative of the wide usage of cyber terrain in every human endeavour. The trend is expected to continue more vigorously in the future. Cyber security, in the sense of national security is not just the security of systems and data from external or internal unauthorised access on data disaster. It is ahead of that and highly futuristic with the evolution of artificial intelligence (AI). With all these goings-on, the element “cyber security” cannot be discounted. It has to be seen in its clear perspective for assimilating with other elements of national security. However, there is a caveat. Cyber security as an element of national security is special, because it was the first element to break out of established terrains into its own. The next terrain exclusive element is genomic security.

VULNERABILITY AND SECURITY REQUIREMENT OF CYBER SPACE

Cyber space is like a bank vault and more. It needs to be access controlled. The access is not physical. That is the difference. There are too many possibilities for vulnerability in computer systems that can make the system accessible to unauthorised people to subvert security for malicious purposes. More and more vulnerabilities are being identified daily. What is important about system vulnerability in cyber space is that the vulnerability changes continuously with advancement of information technology. Unlike a physical situation, vulnerability of a cyber system cannot be identified once and for all and protected, since it changes every moment. Therefore, vulnerability analysis and preventive measures have to be integrated within the system itself as an ongoing process, thereby cataloguing for incidence response. Assessing the security posture of a system includes characterising the system and its operation. In vulnerability analysis, the system means the facility or network as a whole along with an integrated cyber system within it. Computer networks have grown over the years and today there are total connectivity environments with the Internet and a large number of captive networks and information systems in place in any domain. This is going to stay and further advance at a breathtaking pace, more due to business competition than by urgent necessity. Cyber security demands state of the art infrastructure within each

organisation with gateways between interactive organisational networks that need to be managed with proper architecture and interfaces.

The number of computer users is increasing. Among them, more and more users are dependent on computers for online transactions—business, banking, mail, trading stock, managing personal accounts, etc. This means more and more time spent online, an ideal situation for fraudsters, data thieves and pranksters to enter into the private world of the computer user and cause havoc in the personal cyber world. Scammers are at the edge to take advantage of the rush for cyber demand for services. Online fraud is just one of the growing problems of cyber security. The prime targets are banks, financial institutions, individual customers associated with personal transaction and security networks. The term used for breaking into personal information in a computer is called phishing.⁶ The phishing scammers send fraudulent e-mails connected to a URL that appears to be genuine. The unsuspecting customer gives away personal data including passwords that could be manipulated to online fraud thereafter. The websites will be faked or imitated. The number of phishing e-mails is considered to be 3.1 billion worldwide (2004).⁷ The problem of such information drain will only escalate in the future.

TECHNOLOGY AND MANAGEMENT OF CYBER SECURITY PROVIDERS

Integration of cyber networks with security infrastructure requires a technology profile that will depend upon specific requirements based on *in situ* vulnerability analysis. In general, the profiling of a cyber system security provider technology will include:

- Network topology
- Open systems interconnect⁸ (OSI) reference models
- Transmission media options
- Various types of networks
- Network administration
- Security of cyber information
- Standards for IT products
- Integration of sensitive networks

Network topology defines connectivity of computers in a network system. It could be in a ring fashion where each machine is connected to a select few in the system, a star topology where the connectivity is to a central hub, or parallel on a busbar. All these topologies have limitations. The OSI model is a conceptual framework developed by International Standards Organisation (ISO)⁹ to categorise the process of communication between computers in terms of seven layers. The layers comprise application, presentation, session, transport, network, physical layer and data link with specific functions of data generation and flow in a continuous chain. Transmission media provides many options, from various types of cables to satellites. The choice depends upon considerations of cost, efficiency

of transmission, noise signature, installation and maintenance aspects, volume of data that decides bandwidth, etc. While cables transmit data electronically, satellite transmission is through radio waves. Networks are for centralised connectivity of the systems. Those in application are local area network (LAN), metropolitan area network (MAN) and wide area network (WAN) functioning as the name implies. A network is a collection of individual components working in harmony. These networks need to be managed efficiently and continuously by monitoring, control and trouble shooting by experts in the field through various models. The International Standards Organisation (ISO) guides the policy for the security of cyber information. The security policy for cyber information may broadly include:

- (a) Security practices
- (b) Cyber ethics
- (c) Password policy
- (d) Software policy
- (e) Network policy
- (f) Internet policy
- (g) E-mail policy
- (h) Website (organisational) policy
- (i) Policy on laptops and portable computers
- (j) Security policy for desktops
- (k) Help desk support to security

The computer and network policy will widely cover the system administration policy including physical security, access control, network policy, disaster recovery mechanism, application of the security policy, audit, software development policy and documentation procedures. Over and above a minimum-security criterion, important components of security overlay that could typically be used by the organisations in their networks are firewalls, perimeter defence and intrusion detection systems, security audit systems and encryption mechanisms. The exact specifications for the overlays will need to be evolved after undertaking vulnerability analyses. Other methods are antivirus protection, critical data backup, access control, user classification, multilevel secure systems, biometric and other methods of authentication, encryption and decryption of data, spyware protection, etc. A cyber system that needs to be protected should undergo serious risk analysis for identifying the assets to be protected and the potential threats against them. Performing an accurate risk analysis is a vital step in securing an information environment. An audit team, and response emergency team for disaster recovery and assessment follow the security system. The security policy should articulate the gateway protocols and the security overlay for the integrated networks. IT products are to be standardised for data security. The organisation should draw out the standards that should have evolved by expert consultation, and maintain the repository. Integration of sensitive networks may wait till the importance is established. Integration can dilute sensitivity since the sensitivity factor of two

organisations may not be exactly identical. In such cases, one has to raise the level of the lower one to equalise with the higher one or integrate only equal level sensitivity factors of each organisation and that too, only if essential. The network obviously shall undergo vulnerability analysis once the decision is taken to integrate. Integration can enhance vulnerability. The security grading of the networks should be assessed and formally promulgated.

VULNERABILITY ANALYSIS

Vulnerability analysis examines in depth the security posture of the organisation's system profile. It will include characterising the system, defining the threat, identifying security targets, determining security system objectives, identifying existing physical protection system elements, and analysing the effectiveness of the security system including identifying any deficiencies. The vulnerability of an electronic system is embedded in the property of the system, its attendant software and hardware, or its administrative procedures. The system is vulnerable when a user can access it without authorisation. An unauthorised entrant can access and modify the system and steal or alter data at will. The risk involved is the possibility of loss applied to the information system of the organisation. It is generally defined as "the possibility of loss." In risk assessment, the likelihood of occurrence of exploiting vulnerability is measured in terms of loss to assets: buildings, computer hardware, laptops, e-mail, software, databases, etc. Assets are all items that have value to an organisation. The effectiveness of any risk assessment process relies on the accuracy and completeness of the inputs. Data is vital. Unfortunately, almost all risk assessment methods used today do not provide a method to accurately assess the threats facing a large networked environment. In cyber security, identification and evaluation of threats is a complicated, multi-dimensional process. This process involves analysis of multiple technologies and how they inter-operate. It involves the analysis of methods, access, skill levels and costs required to exploit a given weakness. Threats to information assets are not limited to technological weakness. Physical controls, business and operational processes, telecommunications, employee awareness, etc. play vital roles. Not all threats are malicious. Accidents, errors of omission and natural disasters are equally likely threats that require consideration in cyber security.

Vulnerabilities exist throughout information system processes and in software, hardware and information management. There are many types of vulnerabilities:

- Physical—sabotage, theft, vandalism, etc.
- Natural disasters and environmental threats—fire, flood, power loss, etc.
- Hardware and software—misuse, compromise of integrity, fraud, etc.
- Media (storage devices)—theft, damage, etc.
- Emanation—radiation interception
- Communication—interception of message, re-routing, etc.

- Human—system damage due to greed, blackmail, etc.
- Unauthorised entry—hacking, phishing, etc.

A cyber system is a threat attractor. The targets within the system are:

- *Information*—The ultimate target in most computer security incidents is the electronic information stored in and being processed by the system
- *Software*—Software targets include the operating system and the application programs including those related to security mechanisms
- *Communications*—The networks themselves are targets; they are vulnerable to tapping and disconnection
- *Equipment*—Equipment such as host computers, input–output devices and data storage media are prime targets

There are cyber professionals who indulge in spamming. They conceal their identity, but market the products to customers by intruding into cyber space freely. They are the billboard encroachers. Most of the countries that have advanced network systems but comparatively less security regulations, attract spammers en masse and specialise in spam exports. That perhaps, is the height of globalisation! Cyber security is not constrained by national boundaries. Spam is a commodity that nobody wants to import. The free riding spammers seriously affect many big net companies. More than 25 per cent of the junk mail sent across the world in cyber space, originates from one or two countries. This problem is best tackled internationally unless the national cyber authorities cooperate under stringent laws. Spam can endanger the security of the global net. It is a matter of concern for net executives. There are possibilities that spammers team up with hackers and virus writers—a deadly combination. Governments have been slow in reacting to spamming. Spam conveyers rent servers in host countries who allow them for economic considerations. They have the advantage that the advertisements are cheap. They move like other criminals shifting bases when there is a crackdown in one place. Any country with a good IT base and culture can be a host country for the spam migrants. Spammers hijack the PCs without the owner's knowledge to serve as vehicles for transmitting billions of e-mails. Unless there is strong anti-spam legislation, countries with advanced broadband infrastructure connection at high speed will be the destination of spammers. Otherwise spam will continue as the cheapest advertising strategy at very heavy cost to the networks, by becoming a global blight.¹⁰

CYBER SECURITY AND JURISDICTION

How does one react to information in the web that is libel or incorrect? Internet users and supporters may find a lot of libel material and hate mail in the system, besides incorrect information. Such distortion of communication does not happen in any other media. Internet by its absence of national boundaries has become a forum to damage human values. Australia's Supreme Court gave a verdict in 2002

concerning Internet defamation jurisdiction. In a case, *Dow Jones vs. Joseph Gutnick*, it was held that a defamation arising out of a story on a United States website can be heard in Australia. Dow Jones operates a website called www.wsj.com, a subscription news site operated on a password given by the Dow Jones. The edition of Barron's on Line for 28 October 2001 contained an article entitled "Unholy Gains" in which several references were made to the respondent, Joseph Gutnik. Gutnik brought an action in the Supreme Court of Victoria, Australia against Dow Jones claiming damages for defamation. He claimed that the article defamed him by portraying him as a schemer given to stock scams, money laundering and fraud. Dow Jones argued on jurisdiction. The court held that the law of defamation seeks to strike a balance between, on the one hand, society's interest in freedom of speech and the free exchange of information of ideas (whether or not these ideas or information find favour with any particular parts of society) and on the other hand an individual's interest in maintaining his or her reputation in society, free from unwarranted slur or damage. The judgment further held that the Internet is no more ubiquitous than some television services. It was held that those who post information on the web do it knowing that the information they provide will be available to all and sundry, without any geographical restrictions.¹¹ There are issues, though. One is enforcement; another is conflict with the emerging jurisprudence with jurisdiction, because of different laws in different countries. The judgment can affect not only freedom of speech of media organisations, but also expose publishers all over the world to legal actions. Some publishers may undermine the global nature of the Internet by masking the readership in other countries for articles and news. Again, there could be localised decisions where a law court may not agree to the enforcement of the verdict of a court in another country.

TRANSGRESSIONS IN CYBER TERRAIN

The cyber terrain is prone to scouting by interested parties. On 20 April 2004, the information minister of India made a short mention about an alleged alien business attempt to spy on the security apparatus of India. The Indian intelligence agencies, found evidence to suggest that an Internet start-up drive circulated among some Indian agencies by a business house with the alien links, contained an embedded programme capable of penetrating computer hard disks and diverting cyber traffic to an unknown server. Such methods are common and not restricted to a country alone. According to statistics, 300 viruses are released daily into the Internet (2004).¹² According to a Carnegie Mellon study, there has been an increase of 52,000 to 82,000 hacking incidents worldwide.¹³ Companies and organisations pay good amounts of money for cyber security and it is therefore, a critical business enabler and an expert industry. The dangerous and illusory saga of virtual reality in crime is emphasised by the story of a fourteen-year old who lured his Internet buddy into murdering him. It was brought to the attention of a court in Manchester, UK and left web people horrified. He masterminded a spy spook with characters

interchanging roles under false identification. The spies instructed his buddy to murder the originator by stabbing. For that, he would be rewarded as a full-fledged British secret service spy; get to meet the prime minister and receive half million pounds in cash. It was a plot that was extremely bizarre and unheard of in mind control. That is the pace for surreal story-telling in cyber space. The community believes that unmonitored Internet chat is at fault. But that is only one of many such things in the cyber world where flights of fancy can become reality crimes, including live and virtual pornography where unsuspecting victims could be partners. Pornography is a major contributor for the sustenance of Internet. Cyber terrorism is a new word that will find a place in cyber security. The number of security incidents today are increasing multifold, to an alarming 137,529 in 2003 compared to 82,094 in the previous year. It was 1,334 a decade earlier.¹⁴ Hackers play a serious role in cyber crimes and cyber warfare. They are not criminals, just as anyone who shoots is not an assassin. Hackers are brilliant cyber scholars who have all the time to spend intelligently in front of a computer that others may find boring and squinty. This is a preferred definition just to drive home the difference, because a hacker is a useful warrior in cyber warfare. Hackers are respected for their wide array of knowledge in computers. They get into a bad phase when they want to gain publicity and “do something big and difficult” at high speed. They crack into systems and cause havoc, normally just for the thrill of it. But hackers can be used well in cyber warfare. In national security, the hackers who use their capabilities and knowledge against a country need to be countered the way an enemy is to be placed under defensive tactics. It is only natural that the world of the free web has become a space for racist propaganda and hate campaigns. Paint smeared worship places, abusive languages against different ethnicity, inciting hate attacks, are all there. Purveyors of hate can find a potent tool in the Internet. They can spread fear by showing horrendous acts against humanity. Online games allow children to shoot under racist propaganda. There are recruitment sites for terrorists and mercenaries. There are political party sites that promote racism. The dilemma is that the Internet is global, easy to use and tough to regulate. Intellectual property rights can be violated and terrorist attacks can be plotted through the Internet. There are no easy solutions in cyber security. Better coordination between governments and Internet service providers may provide a chance. It was reported that there were 4,000 racist sites in the world in 2002 and more than 50 per cent of them were based in the United States.¹⁵

ARTIFICIAL INTELLIGENCE AND SYSTEMS

Artificial intelligence and associated systems allow computers to perform in a variety of ways without human interface and also pave ways to robotics and nanos to perform complicated and difficult jobs. Artificial intelligence or AI opens up innovative outlooks in cyber systems. Human intelligence and cognition is one among them that will be of immense value to robotics. AI forks into creating

intelligence to take on more without human intervention. But while AI is electronic, human intelligence is a biochemical mechanism. Humans are yet to enter the world of biochemical energy engines and machines seriously. It is not known whether there will be computers with biochemical chips or a car that perspires and pulls up on its own or parks itself on the roadside under duress. AI today is relatively advanced. Its commercial world comprises many avenues that include robotics, human languages, design and development of better human interfaces, developing larger applications and more widely applicable algorithms and system architectures. Robotics perhaps, is the finest species of electronic intelligence designed to help humans in astonishing ways and in situations and locations beyond human capabilities and reach. Robots carry electronic “intelligence” in their “brains.” The AI research permits computers to interact with people on their own natural language domain. There will be more cultural compatibility in human–computer interaction by interfacing neural language with natural language. Developing larger applications by using AI techniques is a commercial possibility that may include even new programming languages. This will also lead to automatic programming in which an AI computer will develop programmes. The ideas from the AI are expanding. The process of evolution of the robot humans and domesticated robots are on the roll. The renaissance in robot creation will come when biochip designs peak. It deals with representing new knowledge, heuristic (rule of thumb) search and separation of knowledge from inference and control. These ideas have a place in the knowledge world today. It may also lead to a non-programmer programming a reality. There are also hidden and speculative dangers. Decision-making under uncertainty and other situations is what the support AI can give to organisations in a heuristic manner.

CYBER SECURITY POLICY

Confidentiality, integrity and availability of information are integral to cyber security, which requires access control, authentication and non-repudiation to prevent breach. Networks with their generative computer array are critical to administrative and operational activities of the system. Security could be compromised when the flexibility factor is imperative for information flow. Flexibility in operation means probable security risks. Protection means flexibility sacrifice and information blockade. Both ways it is a question of balancing the system between flexibility and security. That is the core of cyber security. Developing security packages continuously is therefore necessary, in order to meet fresh challenges to security. Cyber security is thus a constantly evolving field and runs concurrently with system development and advancement. It is integral to its evolution, though caught up lately. Still, the cyber world is at great risk. A cyber security policy statement calls for effective system administration by experts in the field with high-powered access control at all stages of information flow. It can be achieved in many ways appropriate to the system devised by the administrator.

At national level, the policy statement should include access control modalities and legislative measures appropriate to the sensitivity factors of different information. To that extent cyber security is closely linked with informational security.

The Internet is an open disclosure of information even at the highest security level today. While it is the longest penstock for information flow that can provide power to decision-making, it could also pulverise the national security elements that depend on it for information. One, the information may not be credible; two, the types of attacks on Internet vary and new methods are evolving. It is a question of cyber personnel against cyber induced technology algorithms that calls for constant upgradation of information verification, personnel protocol, network security, user awareness, server security and database management. The cyber domain is a boon to transnational and national criminal syndicates and militant operators besides those involved in information trafficking, insurgency, espionage, sabotage and subversive activities. It is easy for critical information to fall in their domain and seriously compromise national security. The cyber medium is the fastest and an inexpensive facility. Therefore, an effective and compatible security policy is the basic need for any cyber system administration.

CYBER ADVANCEMENT

Has the world seen it all in cyber technology and development? Not exactly. The cyber world perhaps, has not yet offered even its lowest potential package to the world. It is only a matter of time that the inventions and pathways that support development today, are viewed as primitive tools by generations in the future. Human advancement is on the fast lane and of course, parallel to it is its decline. But development in every field may have to be a process that will extinguish only when it reaches its peak value. The cyber world perhaps has not even seen its introductory heights, least of all its peak value. Biochips from the simple garden spinach to the most resolute robots are in the offing. Nano-technology is poised to revolutionise the cyber world. Nano-technology deals with the “small by miniature design” and is a fast developing field. It is through nano-technology scientists believe that spinach cells may one day power (a la Popeye)¹⁶ laptops, cell phones or bio-pacemakers. It may revolutionise the cyber world and associated fields of human life. Smart houses, offices, malls or anything where a tiny nano chip can make a difference will brighten up activities. Nano-technology will shrink machines. Doctors may have the entire laboratory for diagnosis inside their pockets in the shape of a chip made by molecular assembling, even by replication. The possibilities are amazing. The field is yet to see its greatest achievements in steering human life to dizzy heights demanding more from governments in terms of security requirements.

CONCLUSION

Cyber security is an element of national security in its exclusive terrain. There should be stringent national and international policies in cyber security matters. While cyber space is a gold mine for knowledge, it is a dangerous place for national security initiatives. One such danger comes from anti-dote writers and diagnostic companies who need hackers, virus writers, worm creators and spammers to flourish, because it indirectly supports the business. This makes cyber security a special field in a special terrain where surveillance and monitoring have to go together with appropriate control measures. The problems faced are data mining, aggressive advertising parasites, scumware, keyloggers, viruses, worms, bugs, dialers, malwares, browser hijacks, tacking components, etc. This means privacy protection in cyber security. Such privacy can be maintained only under strict international and national cyber jurisdiction and laws to enforce them, besides arming with tools to prevent damage. Designer viruses are the order of the day. There are specialised ones that can steal just what they require—for example, financial or military data. In June 2004, an outbreak called “scob” was designed to steal financial data from computers and passwords worldwide. It exploited certain vulnerability in servers using a version of particular software. It was a potentially dangerous virus. The infected servers in turn exploited the vulnerability in the browser to install a Trojan horse virus on the PCs of web surfers who visited the infected websites. All these happen when one is viewing the same page. Without the surfer’s knowledge, parts of the browser were already re-directed to another website. Even the most trusted website may contain potentially malicious codes. According to an Internet security technologist, the only secure computer is one that is turned off, locked in a safe and buried 20 feet down under in a secret location. He also adds that he still is not confident about that either.¹⁷ Well, another safe computer may be the one that is smashed under an armoured vehicle. But the message is loud—a computer is insecure if it is on and connected. And the primary pathway or the worm tunnel is the Internet. Cyber terrain is modern and seemingly unlimited unlike geophysical terrains. Cyber laws are at a nascent stage and there are no serious cyber cops to enforce them. Cyber crooks and gangland people are having a field day. In cyber crime, the criminals are anonymous, freewheeling with unlimited freedom and capabilities. The way to contain them absolutely is not yet in sight. Till then the choice, other than smashing the computer, is to follow the trusted path of cyber security:

- Only legal soft wares
- Update anti-virus software
- Firewall the system
- Do not open unknown e-mails and attachments
- Select the hardest password and keep changing it
- Do not run programmes of unknown origin

- Disable hidden file name extension
- Be wary of business promotion software and those dolled out free
- Be careful during joint military exercise with other countries where exchange of software is involved
- Be careful about business promotion software
- Do not believe blindly in any cyber lock
- Treat computers as an open window
- Turn off from network when not in use
- Disable scripting features in e-mail programme
- Make regular backup of critical data
- Encrypt sensitive files
- Make a boot disk for use in case intruders damage or compromise computer
- Do not give out e-mail to strangers
- Have a disaster recovery plan
- Understand that information on the Internet need not be credible
- Understand that the Internet is a highly opened up free passage way where everything is exposed
- Know that information on the Internet need not be authoritative
- Be aware that every time one copies, security is diluted

Notes

¹ Narendra Nag, "The New Effect," *Hindustan Times*, New Delhi, 19 September 2004, p. 17.

² Victoria Shannon, "Father of 'www' Gets \$1.2 m Prize," *Hindustan Times*, New Delhi, 19 September 2004, p. 17. The Finnish Technology Award Foundation awarded Berners-Lee US\$1.2 million as a prize for outstanding technological achievement that raised the quality of life. The Finnish government and private contractors supported the foundation. He was the first recipient of the prize. There were 78 nominations decided by eight judges.

³ The future of cyber security has a lot to do with geostrategic security measures. Can the world create another worldwide web in a different name? Say, universal web—<http://uw.whatever...>, or in an entirely different format that could shift the monopoly of information traffic from a select country to the world in general? Today the Internet access code (IACN) is with the US, with obvious advantage to it. A universal code could limit this monopoly access to the United Nations, if the world agrees. Or rather each nation could have its own web, which could be interlinked to form a universal web wherever it felt comfortable. The sites could be regulated and interconnected at will. These are issues to ponder on when thinking about cyber security at a macro level.

⁴ John Schwartz, "Porn, Spams Thrive on Ailing Internet," *The Asian Age*, New Delhi, 28 August 2002, p. 6.

⁵ Ibid.

⁶ Umesh Deshmukh, "Arm against Online Fraud," *The Economic Times*, New Delhi, 30 September 2004, p. 9.

⁷ Ibid.

⁸ A model designed by the ISO (International Organisation for Standardisation) to categorise the process of communication between computers in terms of seven layers.

⁹ Also known as International Organisation for Standardisation.

¹⁰ “Spam Jam,” *The Economic Times, Corporate Dossier*, Mumbai, 17 September 2004, p. 4.

¹¹ Pavan Duggal, “E-slur Here, be Sued There,” *Hindustan Times*, New Delhi, 15 December 2002, p. 12.

¹² Rumu Banerjee, “Under the Scanner,” *Hindustan Times*, New Delhi, 19 May 2004, p. 10.

¹³ Ibid.

¹⁴ Varadharajan Sridhar, “Info Security Blanket Has People Holes,” *The Economic Times*, New Delhi, 31 May 2004, p. 5.

¹⁵ Jamey Keaten, “Will US Join Europe to Fight Web Racism?” *The Economic Times*, New Delhi, 18 June 2004, p. 20.

¹⁶ The famous cartoon character who derives strength from a can of spinach.

¹⁷ Dennis Marcus Mathew, “Cyber Crooks on the Loose,” *The Hindu*, Hyderabad, 3 March 2003, p. 2.

21

Genomic Security

In the genetic code, the future was written yesterday.

Genetics is the newest frontier element of national security. In a terrain of its own today, the genome has the potential to expand to a much wider terrain—an exclusive bio-terrain—in the distant future. At the beginning of the 21st century, human beings are at an unusual fork in their greatest ever intellectually creative moment. Whether it will lead them to solve the mysteries of creation for the benefit of future generations or whether their own intellect will destroy them once and for all will depend upon the road they follow from now on. The psychology of invention and dexterously heraldic creations can at times resonate with notes of destruction. The future is always packed with surprises.

GENOMIC SECURITY: THE FIFTEENTH ELEMENT

Genomic security is about the building blocks of life in the mysterious genomic terrain of genetics—the study of genes. Genes are the biochemical instructions written inside the cells of every living organism. Genetics is the study and research of how information encoded in genes is used and controlled by cells and transmitted from one generation to the next. Geneticists also study how tiny variations in genes can disrupt an organism's development or cause disease. Engineering the genes has the potential for serious abuse and this concern has presented society with many ethical and legal controversies. Hence, the term “genomic security.” Genomic security deals with the branch of genetics and its possible impact on national security. It is an element that is very futuristic. Genetic information is encoded and transmitted from generation to generation in DNA (deoxyribonucleic acid), a coiled molecule organised within chromosomes that lie in the cells. Segments along the length of a DNA molecule form genes. Genes direct the synthesis of proteins that carry out all life-supporting activities in the cell. Although each life form shares the same set of genes, individual life forms can inherit different forms of a given gene, making each one genetically unique. A genome is the complete set of genes that makes a particular life form. In each genome, the chromosomes are numbered from the largest to the smallest in a descending order. The genes contain signatures of life. They lie in the chromosomes within the cell. The study of genomic

security deals more with chromosomes as they are numbered, than with genes. Scientists have their favourite chromosomes depending on their studies. The genome is the perfectly recorded autobiography of the species that it belongs to. The threat associated with genomic security is related to the manipulation of genes by scientists and practitioners, unethical practices using gene therapy, and gene researches going haywire resulting in serious problems to life. There is much to learn. The site for the genes is the cell. Some organisms are made up of a single cell; others are made of many kinds of cells, each having a different function. The function of a cell within an organism is determined by the genetic information encoded in DNA. In animals, plants and other eukaryotes (organisms whose cells contain a nucleus), DNA resides within membrane-bound structures in the cell. These structures include the nucleus, the energy-producing mitochondria and in plants, the chloroplasts (structures where photosynthesis takes place). In prokaryotes, one-celled organisms (unicellular) and bacteria that lack internal membrane-bound structures, DNA floats freely within the cell body. Perhaps it feels good that way.

ABOUT HUMAN GENOME

The life on earth is made up of cells—some unicellular and others multicellular. They are the basic functional units of a living system. The human body has about a hundred trillion of them. They are less than a tenth of a millimetre across in size, but there is a world within each one of them. The instructions to manage this world are written in DNA, a chemical inside the nucleus of the cell. The nucleus carries two sets of genomes that contain the complete set of DNA,¹ a chemical that contains all the instructions needed to direct the activities of a cell when it is alive. Of the two sets, one is inherited from the father and the other from the mother. Each of these sets contains thousands of genes and is within a carrier called chromosomes that lie inside the nucleus. In fact, a chromosome is actually a composite form of DNA. There are 23 pairs of chromosomes in a human genome, which is the complete set of human genes.² Wow!

To reiterate a rather complicated subject to the uninitiated—that includes the author too—who has neither the intention nor the capability to rearrange an unsuspecting and home-loving DNA of a human into that of a werewolf or a pet dinosaur, a genome is an organism's complete set of DNA. A typical gene contains a few thousand nucleotides. These are the fundamental units of the DNA. The DNA has the same chemical and physical compositions in all organisms. The sequences of arrangement of DNA decide the type of organism with its own traits. It is written by arranging just four words called the bases. The scientists call them A (adenine), C (cytosine), G (guanine) and T (thymine).³ While the bases of DNA are just four, explaining and appreciating the arrangement may be very complicated. To recapitulate the array of genomic conversation about the humans (the subject of national security deals with humans) one can break it into a nursery (style) rhyme

for the uninitiated big kids who read this for an academic purpose (there is no other specific reason for introducing a non-rhyming rhyme here). Look at it this way:

*About a 100 trillion cells, amen,
Maketh a body human,
Take or leave a few,
And stir a whimsy stew.*

*The cells die replicating,
While the age add on complicating,
Cells are less, when death comes old,
Lucky are those who live that old.
Oh, ho, ho... (Chorus in the background like a belly grind after a heavy meal)*

*The cell that contains a nucleus,
Carries a pair of chromosomes,
23 pairs in humans to be precise,
(Read endnotes 2 to 4 to concise).*

*All numbered in size descending,
Except the last, though not condescending.*

*23 carries a X in female,
While holding a Y in male,
When they join together,
The life is set for humans to gather,
Mom gives one and dad another,
None from a frailty tick-a-dick stranger.
Whether they wed,
Or dive into bed,
Egg and spermo,
Make it to chromo.*

Oh, ho, ho... (Same exasperatingly discordant chorus in the background)

*The chromos(omes) carry a complete set,
Of genes, those carry generation next.
Genes in the chromo power the throttle
Of life, like a genie in the bottle.*

*Genes are not in tens or scores,
In thousands you can clearly address.
Each of the gene is built by exons,
Left in sets that broke by introns,
Strong they are that made of codons,
Written in bases, even for morons.*

*Four bases tally for all,
 A, Cee, Gee, Tee, ready on call.
 That makes the genome for all,
 With billion bases to count in all.
 Oh, ho, ho... (Chorus... The same belly grind)
 A symphony of life,
 They jointly vie,
 In tune with rhapsody
 In perfect medley.
 And, to make it all in a tray,
 Ye know it all; the scientists have their way.
 If they slip a notch on fine,
 Ye, be sure to meet, the Fran-ken-stein."*

Got it? No? Doesn't matter. It is in the genes.

HUMAN GENOME PROJECT

World awareness about genomics goes back to the human genome project (HGP) in the last decade of the 20th century. It was not something new and sudden. Human interest in genetics has a long past. The human genome project has its roots in an initiative of the Department of Energy (DOE) of the United States Government taken as far back as 1947⁴ when the department was tasked to develop new energy resources and technologies. In 1986, the department announced the Human Genome Initiative. It was followed by the announcement of HGP and officially began in 1990. But much before all this, Erasmus Darwin (1731–1802), a poet cum polymath and the grandfather of Charles Darwin, who revolutionised the theory of origin sixty years later, had thought about the living filaments of life as the cause of all organic life on earth quite loudly in 1794.⁵ It might have been a startling guess at that time. But certainly the guess of the intuitive is more constructive than that of the speculative or a gambler. The idea of something like this does not rest with Erasmus Darwin alone. Even Aristotle is attributed with the idea of the recipe of life for identifying it as a technique for replicating and creating order. Aristotle said that the concept of a chicken is implicit in an egg. The discovery of DNA structure by James Watson and Francis Crick in 1953 heralded a new era in molecular biology. The filament of DNA is information written in a chemical with one chemical for each letter in a code. It is written in a linear language that can be read. The basic purpose of the genome project was to generate a reference DNA sequence for the three billion base pairs and to identify all human genes. The HGP is expected to pave ways for a number of researches that will yield high quality disease combating medicines and methods. It will have indefinite practical applications including identifying genes associated with human diseases. Hundreds of other genome projects on other organisms—plants,

microbes, animals, etc.—will follow. The genome projects are not just sequencing alone. There is a lot to know. There are surprises too. Anybody will agree that humans look different from fruit flies. But they are very modest relatively when compared with the simple fruit flies in the number of genes, as if it is more economical to assemble a human than a fruit fly from all points. While a human may have about 25,000 to 30,000 genes, a fruit fly is not very distant; it has around 13,000. The estimate of genes in select organisms is given in Table 21.1.

TABLE 21.1 Estimate of Genes—Select Organisms

Organism	Genre	Genome Size (Number of Bases)	Genes (Estimated)
Human	<i>Homo sapiens</i>	3 billion	25,000
Mustard weed	<i>A. thaliana</i>	100 million	25,000
Roundworm	<i>C. elegans</i>	97 million	19,000
Fruit fly	<i>D. melanogaster</i>	137 million	13,000
Yeast	<i>S. cerevisiae</i>	12.1 million	6,000
Bacterium	<i>E. coli</i>	4.6 million	3,200
Human immunodeficiency virus	HIV	9,700	9

The number is not what actually determines the complexity of a system, but the way the genes are used by nature to run the system.⁶ The number of human genes, as understood today, is much lower than what was previously thought. Scientists believe that number is not the criteria compared to the process used for building different products. The process is called alternative splicing. Another complexity in understanding the building process of human genome is in the protein modifications and their regulatory mechanisms. Proteins perform most life functions and even make up majority cell structures. They are complex molecules made up of amino acids, the smaller sub-units of protein. The constellation of all proteins in a cell is called a proteome. It changes according to the demands of the external and internal signals of the environment dynamically, to respond favourably as decided by the relatively unchanging genome. The gene sequence decides the behaviour and chemistry of the protein.⁷ About two per cent of the genome encodes instructions for the synthesis of proteins. The human genome is an ocean of information. The sizes of genes vary. The largest is dystrophin with 2.4 million bases. Functions of more than 50 per cent of discovered genes are yet to be identified. Sequencing is exactly identical to almost 100 per cent in all the people. Research in the genome is expected to provide high yield in the 21st century, especially in the field of life sciences. These include molecular medicine, microbial genomics and health risk assessment; anthropology and human

migration; DNA identification in forensic medicine and criminology; agriculture; live stock breeding and bio-processing towards maximising food security; etc. The dimensions of genome research are expansive. And so are the criminal and anti-national security aspects. Bio-terrorism and biological warfare can take an entirely new turn when genetics turn around in wrong hands.

GENETICS AND HUMAN HEALTH

Almost every aspect of human health is associated with DNA sequencing. The secret pathways towards human health may lie within DNA. Its impact will be on diagnosing and treatment of diseases. This fact therefore, will be vital for genomic security because of competition and regulatory measures violation. The transformative methods associated with health include many processes. Gene testing, pharmacogenomics, gene therapy and stem cell research are developing fields.

Gene Testing

Gene testing can help in diagnosing a disease, provide prognostic information about the course of a disease, confirm the diseases in non-symptomatic conditions and also predict its likely chances in a human being in the future. Gene testing is expected to replace most other tests now carried out in health assessment. But, predicting a disease could have significant emotional and psychological impact on people. There are chances of identifying a particular group of people to be high risk and thereby causing a stigma on the group. It could cause problems.

Pharmacogenomics

Pharmacogenomics will deal with customising treatment for a particular group of people. That will be a major shift from today's singular medicine therapy for all. Custom medicines are on the way for groups if not for individuals. Pharmacogenomics mix pharmacology with genomics to study drug metabolisms. The patient's genotype will hold the key for application of medicines. It is expected to drastically reduce the adverse effects of medicine. Drug development is expected to undergo major change through pharmacogenomics. Faster, cheaper and more effective drugs will be the result.

Gene Therapy

Gene therapy also known as gene transfer is the better-known aspect of genomic applicability in health. Here genes are the therapists. A section of biomedical scientists believe the cure for treatment for terminal diseases like cancer and muscular dystrophy lies in gene therapy that largely includes replacing defective genes with healthy ones. Gene therapy has already gained acclaim through stem cell research.

Stem Cell Research

Stem cells are versatile cells that have the ability to grow into any kind of tissue. The cells can be procured from an adult patient's own body (from bone marrow, blood, etc.) or from embryos—more potent than adult stem cells—or from umbilical cord blood. They are injected into the body directly intravenously, endocardially or straight into the heart. Stem cells repair the damaged cells of the body. The types of stem cells are:

- *Totipotent*—They can turn into any type of a cell in the body, including placenta
- *Pluripotent*—They can turn into any type of a cell except placenta
- *Multipotent*—They can turn into only some types of cells; hence of limited use
- *Unipotent*—They turn into a single type of cell

Stem cells can treat muscular dystrophy, a group of genetic disorders that cause progressive wasting of the muscles, and provide hope for millions of paraplegics in the world finding a way to rebuild the nervous system. Embryonic stem cells are master cells that have the potential to develop into virtually every type of cell in the body. It involves many medical, ethical and legal issues. “*There are many critics but for whom the research would have been much advanced,*” state the supporters of stem cell research.⁸ Issue of stem cell research and controversies are not complete without a reference to Hollywood actor Christopher Reeves (1952–2004). An actor by profession since childhood, he injured his spinal cord in an accident while partaking in an equestrian event in 1995. He was paralysed for life. He motivated researchers and neuroscientists all over the world to conquer such disease till his end on 10 October 2004. He firmly believed in the prospects of stem cell research in curing many of the diseases that takes away effective life from humans and leads them to their end slowly and painfully, and helped in bringing awareness, funding and law-making. It is for the world to follow such powerful and intuitive suggestions from strong people with conviction.

GENOME AND THE TRAVELLING HUMAN

Among living things, the most spread out in the world are the human beings. Their evolution has been different from that of other life forms and has been read backwards through genomic research. According to a study, somewhere in the past about 80 million years ago, there was a tiny shrew-like mammal who was considered to be the common ancestor of humans and all other living mammals.⁹ The best estimate of ancestral DNA was a test case through many mock sequences in the computer reconstruction by scientists. Reconstructing the extinct genomes of ancestors of living things has become a part of serious genomic studies. Emigrations can be tracked by train of errors that slowly accumulate in certain regions of DNA. After a population splits, the people who go one way will clock

up a different train of errors from those who go the other way. Geneticists can reconstruct family trees of different lineages in the great genealogy of humankind and even assign rough dates to the branch points. Y chromosome tracks the movement of men; mitochondrial DNA inherited only from the egg tracks the migration of women. There are twenty mitochondrial lineages. Geneticists use the term “drift” to explain random change that occurs between generations as some genetic variants become more common and others become rare or disappear altogether.¹⁰ The drift is what made people different. But DNA does not hide the drift. Perhaps the only history that is ever written correctly without distortion whatsoever is that on the pages of DNA.

KNOWLEDGE REVOLUTION AND GENOMIC SECURITY

The forerunner in genome advancement is bacterial biotechnology. The subject has made the highest advances ranging from gene mediated vaccine production to gene modified pesticides and several other products as well. Genetic advances to make agriculture productive faced a setback because of the Frankenstein factor in the minds of consumers. Insufficient information in the public domain and secrecy surrounding tests and trials were the major reasons for creating suspicion in the public mind regarding the side effects of genetically modified agricultural products. The more contemporary interest after microbial and agricultural biotech concerns the human genome project. Unfortunately, here again, the hype and promises are running well ahead of facts emerging from laboratories around the world. The basic promise is that the information contained in the genes of each human being represents a template related to health, well-being as well as predisposition to diseases such as cancer, coronary ailments, Alzheimer's, schizophrenia, and many other common, and not so common, inherited and acquired ailments. The knowledge revolution in genomic security is spread over areas of gene fragmentation, cloning, plant genomics, consumer products, etc. All have strong critics and antagonists.

THE PERIODIC TABLE OF LIFE

In a world that is divided at any point in time on opinion and essentials of life itself, the well-being of people cannot be seen in isolation or as insular to an individual human being. It is for the group and comes within the genre of well-being of an individual within a group, in this instance, the nation-state. Life has to be seen that way and to this extent the latest in the elements of national security, genomic security, can play an important role if the governments understand its importance to human life by deflecting the mirror of prudence in the best possible way according to changing times. Genomic studies have opened up life for the world to see. Each cell in a life form is a living entity. A virtual table of life can be prepared by deciphering chromosomes. Genes control the formation of proteins that make cells tick deciding how it will repair, defend or divide itself, packaged in

the chromosomes in the nucleus of cells. After the first draft of the entire human genome, the complete set of instructions (that are packaged in human genome) that needed to make a human being was unveiled in 2002. Now, researchers are unscrambling the chromosomes one by one. Decoding chromosomes lead geneticists to disease-causing genes and immune system codes. This information will help scientists to understand why some people are more prone to certain diseases (Alzheimer's, Usher syndromes, etc). It can help doctors to screen patients for their genetic conditions such as cancers and cardiac diseases. People can be warned early and advised to change lifestyles. Someday, it will be possible for abnormal genes to be identified and corrected in the sperms and eggs so as to edit the very DNA inheritance that one generation leaves behind for the next.

Surprises are galore. The study of life's periodic (gene) table shows a cannibal gene. Does this mean that the humans have depressed forbidden craving for human flesh? The signature found by London scientists, points to a history of cannibalism worldwide. The signature is the one that protects one from prions, i.e. proteins that can be transmitted by infected meat and attack the nerve cells of the brain. It is in mad cow disease (1996) widespread in England. They spread more easily through human flesh.¹¹

SOCIETY AND GENOMIC SECURITY

With increased activism in the genomic terrain, concern about its use and capabilities are also expanding. There are too many ethical, societal and legal issues in genome research and in its applicability. Privacy and confidentiality of genetic information is one of them. The issues are who owns and controls them, and how the state and anti-state parties will use the information against the individual. The issues are not exactly similar to medical privacy as practised today. Genetic information will be used in almost all activities like insurance, schools, employment, etc. How fair these users will be with one's genetic information is another issue. Psychological impact, stigmatisation, etc. in case a disease or the probability of a disease is revealed, can be far too serious. Even superstitious belief systems that predict a negative future have not only made people feel depressed, but also caused them to ostracise those in the family for wrong predictions from soothsayers, etc. It is only natural that such predictions by a scientifically approved method can cause more serious issues of stigma and unwantedness that may lead to family and social neglect. Besides, there will be reproductive, clinical, environmental, conceptual, philosophical and serious economic issues that may end up in commercial aspects of genome research. But the fact remains that knowledge has the right to spread, and when it spreads many systems based on lack of knowledge will crumble.

Ethicality is the overwhelming question. It could be voiced from all angles. What about the modified super tomato that could withstand extreme cold and last longer than other tomatoes without rotting and provide a bit more nutrition?

Does it taste fishy? Will religious vegetarians discard it? Perhaps not, even if it contains a piece of gene from a cod from the northern Atlantic waters. Ethicality of cultural variation can cause serious problems and bring the world back to the period of World War I when people were identified by race. Hitler's *Mein Kampf* is full of praise for the pure Aryan race and the real blood people who only have the authority to rule and even exist in the world. There is also another view in history that the very concept of Aryans is a myth.¹² That is where distortion in history makes history. All these can one day come back to haunt human beings with scientific sanction in the background. The genomic security issues are to be seen from these viewpoints.

CHALLENGES TO GENOMIC FINDINGS—BEYOND DNA?

In spite of the euphoria and the hoopla-braced controversies, it is not clear whether the genome-induced perspectives will end up in a whimper at the end of the century. There are many unexpected findings in store for the expected. Geneticists from Purdue University have claimed that they had found genes in certain plants that are corrected for defects inherited from an earlier generation.¹³ That is against the DNA theory. The conclusion of such a find is that some organisms may hold a cryptic backup version of a corrected copy of their genome that bypasses the usual mechanisms of heredity discovered by Gregor Mendel (1822–1884).¹⁴ What is important here is that the new substance, the cryptic genome, does not seem to be made of DNA. If it is true, our friendly and hopeful DNA will lose a couple of points in the first set. The result has been found in a single plant, called *arabidopsis*, a mustard-like plant favoured by plant geneticists. In the research, scientists found that a mutated gene has changed. The change in the gene occurred by change in DNA units back into the normal form. It was a shock. Such a change is possible in many ways, but not without a correct copy of the gene as a template. The scientists who were shocked by this find, were of the opinion that RNA (ribonucleic acid), the unstable but close cousin of DNA, must be responsible. RNA performs many hereditary functions in the cell and it is the building material for many viruses. The RNA would have been responsible when the plant was under stress to change the code to correct the gene. The hypothesis is about the RNA backup genome, lying undetected. In this case the cryptic template, if it exists should be more resistant to mutation than the DNA it helps to correct. But normally RNA accumulates more errors when copied by the cell.¹⁵ This report brings up a new question, “is stress the kiln that bakes DNA?” This finding, if proved right, will cause an exception to Mendel's laws of inheritance. The DNA sequence itself has changed. This will also undercut the theory of sex to prevent mutation. But the self-correcting backup system poses a serious question in the journey towards making a life in a way humans are not used to.

CONCLUSION

The biggest surprise does not come from the fact that today humans know exactly who their original parents were; that one can read oneself like a book; that they may not have a disease that cannot be cured; or that they can replicate and perhaps transfer memories into another like transferring into a micro vault in a computer. Considering the potential of genomics, the surprise is still an unpredictable distance away. Genomics is about the parts that contain instructions about how an organism builds, operates, maintains and replicates itself by responding to environmental demands externally and internally. But there is a long way to go. The knowledge that humans have today may perhaps take more than two centuries to mature into a serious genomic world. In the meantime, the therapeutic potential of genomics has achieved an early phase in the commercial sector. For more, in the name of ethics, governments may give genomics a chance.

Notes

¹ Except in a sperm and an egg cell that carries only one set. Matured red blood cell has no genome.

² Matt Ridley, *Genome: The Autobiography of a Species in 23 Chapters*, HarperCollins Publishers India, New Delhi, 2000, p. 3. If each pair is taken into account as one chromosome, then there are 24 chromosomes because X and Y are counted separately and not as a pair.

³ They are nucleotide bases.

⁴ US Department of Energy, 'The Human Genomes Project, 1990–2003: A Brief Overview,' *www.ornl.gov*, 20 January 2004.

⁵ Ridley, n. 2, p. 12.

⁶ "How Many Genes Make a Man?" *Hindustan Times*, New Delhi, 22 October 2004, p. 23.

⁷ US Department of Energy, n. 4.

⁸ Editorial, "Superman's Sadness," *The Hindustan Times*, New Delhi, 19 September 2002, p. 10.

⁹ Carl Zimmer, "There was a Time when Bats and Humans were One," *The Deccan Herald*, Bangalore, 13 December 2004, p. III.

¹⁰ Nicholas Wade, "Genetics Helps Decode Early Human Travels," *The Asian Age*, New Delhi, 14 November 2002, p. 17.

¹¹ *The New York Times*, "Humans have a Cannibal Gene," *Hindustan Times*, New Delhi, 12 April 2003, p. 12.

¹² Michael Danino, and Sujata Nahar, *The Invasion that Never Was*, The Mother's Institute of Research, Delhi, 1996. The book explains the noting in history about the Aryan invasion of India as a myth.

¹³ Nicholas Wade, "New Gene Find Challenges Theory of Why We Need Sex," *The Asian Age*, New Delhi, 24 March 2005, p. 4.

¹⁴ Austrian botanist and plant scientist who was the first to lay the mathematical foundation for genetics. It was called Mendelism.

¹⁵ Wade, n. 10.

Part Three

Perspectives of National Security

In the turbulent mirror of chaos, national security reflects in the efforts of the governments to understand the effect before the cause is applied.

As stated in the preface, this book is an attempt to create an intellectual infrastructure for governance inducing a shift in thinking. This part examines the need to understand the concept of national security through the trends, the importance of examining them by methods available, and experimenting with the subject through research and scholarly studies before concluding the topic. The concluding chapter slides the eyepiece back into the stretched telescope of a subject viewed from a different shade. These are perspective visualisations with a clear understanding that there is nothing mysterious about the future and how the world will behave in time. It has already been established in history from the famous maxim—history repeats. The law of invariance is hidden in this statement. The changes in human behaviour are phenomenally so slow that humans cannot easily perceive them. What they see as changes are those associated with day-to-day lives and situations besides technological changes, and not in behavioural patterns. Humans can easily adapt to such changes.

The future perspective has to be decided on a timeframe—immediate, like an election campaign; short-term such as a planned period; medium long-term as in a perspective vision; long-term as if in a century or so; or extra long-term into generations ahead. Whatever may be the considered span of time, arriving at it correctly is important in national security planning for decision-making, a subject that is examined in this part. National security in a people centric ideology is a macro subject, because it is about human beings who will be there presumably till the end of the planet, and perhaps even beyond. If that is so, the concept slides beyond even global security. The ability to survive, of a species that is managed by the most wonderful equipment ever designed by the forces of creation—the evolving brain—could be endless.

The effectiveness of it all, perhaps lies in the future. But there could be a moment when a drop beyond the critical mass can trigger a massive shift and wobble the otherwise balanced system. But in all possibility, the human species should survive all odds and evolve; they could feel better and more comfortable through added well-being in that process.

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Trends in the Concept of National Security

In the never ending odyssey to NS_{max} , the excitement comes from the voyage.

Being a measurable entity, national security of a country can be expressed at any point in time as an index (NSI) once the parameters are identified and accepted. The NSI is a variable and a relative expression in the world of nations.

CHANGE AND ADAPTABILITY—THE CHANCE THEORY PARADIGM

Change is a constant companion of evolution. It is a function of time. The changes are large enough for the humans to experience, but never to perceive directly because of the inherent familiarity of adaptation to the environment. Without this capability, they would not have been able to survive in a changing world. But the counterpoint is that within this adaptability, the capacity to perceive the rate of change in its minutest form, dissolves without being noticed. Humans will find it extremely difficult to adapt to the change-induced environment if they have the ability to perceive the rate of change in its minutest form. That is why they wake up to the reality of life at odd times, often far later than the time when the change was first induced—ageing, for example. Just as one does not perceive the daily growth of a small sapling in the backyard, changes in the quantum of national security is observable only after a lapse of good time. Reversals are more visible than advances. That is because humans have an uncanny knack to perceive disorder in a better way than order. Besides, changes in an orderly system lean more heavily towards its degradation than its upgradation. The more the adaptability to life and environment, the less will be the perception of change. It is a paradigm of chance theory in which increased attention on a particular system element makes one lose sight of a corresponding element in a particular fraction of the same system. That is why when everything is seemingly going right disorder suddenly creeps into it from nowhere. Actually, the disorder that so appears, is not external but internal to the system.

NATIONAL SECURITY—AN EVOLVING CONCEPT

National security is one such concept at macro level. It is discussed widely in varying shades. In national security, where and how far one can reach can never be estimated,

at least for now. Hypothetically, even if the final limit is reached, it will never be known because that is where apparent security merges with perceived security. The difference cannot be made out. Craving for perceived security will make people feel under. Those who govern should be aware of this vital aspect of human existence. While apparent security is the level of national security that is hypothetically limited by governance, the oft-inflated perceived security is what human beings will aspire for because of the overarching influence of individual needs. The level of apparent national security should ideally remain constant. It is the effort of governance to achieve apparent national security that will vary with human advancement. Perceived security will undergo major upliftment with the increase in efforts for apparent security. In other words, the government may find it more and more difficult to satisfy people with advancement. The power of governments will erode as nations advance. The reasons could be many. This means that the people may have to look elsewhere for their well-being. But, where? Is it spiritual security and its alternations? That is a critical question, because spiritual security is not apparent security, but a balancing force.

Today, many nations have internally conceptualised national security apparatus in place for country specific needs. Most of them vary in their understanding of the principles of national security and its conceptualisation. The concept of national security, as perceived earlier, found its origin in the United States. The reasons were obvious and natural. It was the foremost model of a nation specific national security organisation. Each nation has different norms and approaches in national security matters based on perception. The national security organisations and their performances are not identical. There is no consistency since the idea of national security has certain specificity with national requirement. Most of the national security designs are exclusively engaged in military security matters and diplomatic affairs in international relations. But in its pervading form, national security is the ultimate in human well-being by need satisfaction that leads to self-actualisation.

National security is an expression conjured in duality—two words amalgamated into one. Once separated, the individual meanings of the words will be different from the combined term. This is the primary principle on which this finding is based. Nation and security, if taken apart, singularly stand for entirely different meanings. National security is a conceptual entity; it is different from the security of nations as can be seen from the variation in the statements, “*I see what I eat*” and “*what I see I eat*.” A practitioner or student of national security should be clear about this conceptual difference. National security is a measurable entity that is a function of time. It has certain constituent elements that together in a complex network can prepare for national security maximisation (NS_{\max}) by appropriate governance. The accountability rests with the government whatever form the government may take. The people cooperate as members of the formal group in a nation-state. The concept is limited to the nation-state and when it goes beyond, it transmutes into a single principle called global security. National security is a very recent concept. In case it settles down and is accepted in its totality

by the governments and the people, perhaps many years from now—that cannot be perceived today—the concept of global security may prop up in the minds of the people. However, its entry will be at a time when the demands are different and most probably external to it. The concept will originate when the demand for survival comes under extreme pressure that may turn the attention of the world towards global security. The concept of global security and its governance are not wishful thinking, but practical appreciations of what the world may perhaps witness after many generations. The concept as depicted in a compound word, deals with the will of the people related to their needs—physical, mental and emotional. It is beyond mere physical security. It started with that; the remnants of it can be seen with strategic fixation of nations with the military and war—two totally outdated terms in human existence that can be seen as a major change and are still surprisingly unnoticeable. The world today is abhorrent about war and considers it as a primitive engagement by uncivilised people even if it happens to be a superpower unless it is for the purpose of killing the brutal instincts of the emotionally uncivilised. War is not the instrument of national security. It is achieved through the interactive matrix of its elements. The end objective is to maximise national security—depicted by the alphabetical symbol of NS_{\max} . The mathematical symbol delta (δ) to show an increment in the system is avoided since the attempt is not to express the concept mathematically. It may be appropriate while researching and modelling the subject.

Humans perceive more than what they actually need. It is perhaps necessary by default, for survival. Discontentment in the face of plenty is part of human personality. Contentment in most cases is a state of rationalisation rather than acceptance. The case of national security, being the case of well-being, therefore shifts towards the realm of human behavioural psychology throughout their lives. The responsibility for the well-being of a human settlement is with the “big chief”—the king. In national security, the government is the big chief, in whatever form it may be. The type of government is immaterial. It is a myth that only a democratically elected government will be interested in the well-being of its people. While governance is aimed at apparent security, perceived security is what people will contemplate. The yield of governance normally will be much short of apparent security, and it is from where perceived security will be visualised by people, by the “I want more than I have” syndrome. Governance towards perceived national security will be futile and quixotic. The danger is that national planning will ricochet. Unfortunately, the governments more or less on a daily basis, promise the unachievable to people only in order to woo them. Under these arguments and perceptions, analysing the trend in national security will involve assessment of the:

- (a) Evolution of the concept over the period of time, even before it was scholastically mentioned or discussed and the continuing changes
- (b) Governance and governing forces
- (c) Changes within the elements
- (d) Changes in the interplay of elements

- (e) Change of elements
- (f) Area of operation of elements—terrain specificity
- (g) Changes in the environment of national security—internal and external
- (h) Global system
- (i) Informal hierarchy of nations
- (j) Power factor of the superpower

Evolution and Changes

The concept of national security is of fairly recent origin. It was defined and appreciated in many different ways as it evolved. In this book, effort has been made to enlarge it towards total apparent well-being of the people of a country. Perceived security, which is beyond apparent security, is not a national security objective. Physical security preceded the concept of well-being in the early days. Human beings were weaker in their physical survival capabilities compared to other life forms. It was the intellect that paved way for human existence and survival. From the days of physical fear, humans today live comfortably in nation-states within a system that supports their needs including aspirations. There is an informal hierarchy of nations with a superstate at the top and others lined up dynamically below it in a world crawling towards a better life every day. In this statement, the important reasoning is that “the world today is better than it was yesterday.”¹ The world has been progressing irrespective of the confusion and pandemonium around. If this progress is a sign of advancement in national security, then it could end up in a system that is global. The ultimate concept is therefore, global security. If nothing, the concept of national security will be an early reactant to the beginning of global security. It is already there in a world that is growing more and more responsible. The United Nations in spite of its harrowing weakness to command, in addition to the inherent problems of alleged corruption and conflicts within, is the only torchbearer in an uncertain world. Chances are that this institution may transmogrify into a more relevant establishment in course of time by sheer leadership and demand of survival. The process is natural. It is impossible to say whether it can be accelerated without serious research. It is unavoidable. Globalisation will wear down the powers of governments including that of the superstate. The status of the superstate cannot be permanent. The world is a roulette machine and the governing laws are chancy. The wheel may stop one day declaring another in this position. The current superstate has been there since the Christmas of 1991 after being in a neck-to-neck race for more than two centuries with another in a bicentric world. When the wheel stops, it may even re-establish the same superstate for another long term. But it has to work out now to avoid a burnout later. That is what it is seemingly doing, though it seriously slips at times.

Governance and Governing Forces

The core efficiency of national security depends on its governance. The idea of governance originated from the concept of governmental system. It means

administering the public system including controlling and regulating it. Governance is a term used even in managing formal corporate groups. It is not just politicking or bureaucracy as many may believe, but administering policies and affairs under regulations and control in a state by a government with an objective to maximise national security. It is the duty of the government irrespective of the form it is in. Administration is not governance; it is adjunct to it. Governance includes all the constitutional elements of a nation. There is no standard form of governance. The idea of a state is distinctly different from that of a government. The state is the supreme public power within a political entity. Governments will change but the state and its people will not. For example, the oft-used term “failed state” is more appropriate to a failed government. Another government or another form of governance by the same government if willing, could revamp the situation. The government will exist only if a state exists whereas a state can exist irrespective of the government that is in, and even without it. But only a government can provide national security. Governance governs the index. The common minimum programme for any government will be that of the state’s primary objective—governing towards NS_{max} . People-centric national security governance is not even at the experimental stage today, though at global level the United Nations may be concerned about it without power and funds. People-centric national security governance is the only way to superstate status and to accumulate staying power. Power centred national security may be an attractive proposition in governance, but it could be short-lived as history beckons in every page of time.

Governance encounters conflicting forces. Authorities and the public may consider them as opposing forces. It need not be. Governance towards NS_{max} can effectively turn around many such forces. These forces are collectively termed as ante-force. If governed well, ante-force will be a contributor to national security. The concept of ante-force is universal. It cannot be wished away. The ante-force to governance is well embedded in the global mainstream as part of the national security nucleus. The effect of ante-force on national security can only be considered as an acceptable roadblock in a system process. Such roadblocks have to be overcome either by eliminating the causes or handling the obstacles that are affected. There are additional gains in such a process that are beyond the mere satisfaction of overcoming the obstacle. The intention is to call all such forces that ostensibly conflict with governance towards NS_{max} as ante-force.

Ante-force is a serious concept that needs elaborate research. What is important at this stage is to understand that the constituents of the ante-force are not exclusively those at loggerheads with national security governance, but also those that a government will have to bear as “ante” to governance—as a requirement similar to a stake, a price to be paid. There is a conditional advantage to the government and the state here.

Ante-force is a mechanism. It cannot be eliminated, but could be contained, overcome and turned around to advantage. Ante-force will be strong arbiter of national security maximisation in which order is brought by disorder. Human life

within its environment is a closed system in which disorder maximises with respect to time. This time is very much longer than an average human life. The increase in disorder in a closed human system should not affect the apparent well-being of an individual in it. That is why governance in national security should ideally be an effortless process; it is like pushing a moving object. Generally, there is no static inertia to overcome for a government—that is the good news in national security governance, unless the nation is without a government. This principle is also applicable for any formal group governance, though this book does not peep into corporate, social or family governance. In mathematical terms, the dynamic inertia of a system can be effectively manipulated in governing that system just like a navigator uses the forces of nature to handle a ship at sea. Every state, corporate house, society or the smallest of a formal group, the family, has this inertia within it. If not, it had been dead and desolated since the entropy² would have maximised at an unprecedented rate. There lies the proof that professional governance can be done effortlessly using the inertia within the system.

Is globalisation an ante-force? People argue from both sides of globalisation. There is resonance in rhapsody when it is stated that globalisation kills growth, and that too comes from none other than the ILO. The ILO does not say there is retardation. It only emphasises the fact that the growth advocated is not exactly true.³ The ILO stated that globalisation has slowed down growth in many countries including India and China. More crucially, globalisation has been associated with an increase in economic instability rather than the much-touted economic progress. The ILO found that there were rising economic crises subsequent to globalisation and the gap between the poor and the rich was widening.⁴ The middle remained in the middle, like on a stretched elastic ribbon.⁵ While the progress of the middle class was rather slow, the poor suffered more by globalisation and the rich were accumulating more wealth. This is from the horse's mouth—with the teeth widely bared. The findings of the ILO are based on national income in many countries after the process of globalisation has taken off. The studies show that the trend towards civil liberties through political democracy significantly increases economic security and that government spending on social security policies also have a positive effect. But, measured on a long-term economic growth it has a weak impact on security. According to the ILO, 75 per cent of all labourers live under economic insecurity. One of the countries in the ILO list, India, where the impact has been slow has a different story to tell. According to its ministry of commerce estimate, global trade is flourishing to new heights. It is expected to increase from US\$6,363 billion in 2000 to US\$8,048 billion in 2007.⁶ It will be an annual compounded growth rate of 4.6 per cent. Export led economic growth is considered to be a sign of healthy economic growth for a nation. In that case, the exporting sector of India must be growing and there is no place for complacency and economic insecurity among those involved in it. That is the result of globalisation. Simply put, the pundits do not agree that the ILO prophecy has not happened in India subsequent to globalisation. Or if it is has, it is not clear. According to the report,

the policies of the WTO have met India's demands.⁷ Whatever it may be, the ante-force to national security will divert a lot of efforts that go into NS_{max} . In addition, there are many traumatic episodes in human life along with its pains and aberrations, both physical and psychological when humans become totally helpless. Everywhere there is negativism that consumes positive power and energy. Understanding the ante-force is not easy. Ante-force will be useful in steering national security or keeping the checks and balances in place. Ante-force comprises forces that damage the principles of the concept of national security, if not handled appropriately. Under the shadow of the ante-force, ideologies will be based on other objectives and not on national security. According to expert views, the state has not shrunk in most of the countries due to global changes and where it has, the retreat is not perceptible.⁸ If that is so, the state does not buckle under pressure of any kind of interference. Opinions may vary. The impact of globalisation on national security, even if the state has retreated from its proper place, cannot be serious because it provides the necessary economic support to people in a competitive engagement. That means the markets have taken over part of the role of the state in national security. Here again the government loses out seriously in its ability to influence. But, under the common minimum governance towards national security, the government has the global support in governance. Currently, it is economics and to some extent military matters, because the best way to prevent a war is to engage the opponent economically as war will induce economic loss for him. It does not have to be under a conflict situation; it can be done avoiding a conflict. It is only a matter of time before the world turns around, paving the way for economics to take over from the military in direct engagement. According to *The Economist*, advancement in technology and ideology has caused the state to retreat proving unequal to the challenge.⁹ Globalisation, called global capitalism in some parts has shrunk distances and eliminated sluggishness by advancement of technology. The bifurcations point out the trend towards enlarged global participation in the future world. Global security, in that case, cannot be a chimera.

Elements—Changes and Interplay

The concept of national security defined in this book is a compound string of 15 identified elements (that may increase or decrease in the course of time) similar to a network matrix in a configuration. The interplay of elements within this configuration is to be studied carefully to understand the complex process. A war (in the attempt of military security maximisation) may have corresponding negative impact on the other elements of national security whatever may be the outcome. The entropy of the entire system, to use the language of chaos, needs to be kept constant at all times for a stabilised approach to national security. A sudden increase in entropy will be disastrous. Entropy cannot be reversed. An identified element has certain characteristics that make it an individual contributor to the NS_{max} concept. At the same time, the elements are interdependent in such a way that a

change in one will have an impact on the other. There are chances that the elements may enlarge in their functions and intensity. While national security maximisation is the ultimate objective, taking into consideration its impact of such maximisation on other interdependent elements and optimising such maximisation towards NS_{max} will achieve maximisation of a particular element. In the case of elements, maximisation is actually optimisation relative to the interactive elements on each issue. For example, defence build-up should be done with due consideration to economic security, or environmental security should be taken into consideration while economic security matters are discussed. There are cases where an increase in one element may give a corresponding increase in another. Even in such cases it is only in a limited way. In the interplay of elements, the factor of governance is to see optimum management to maximise national security. Simply put, if every element tries to maximise by itself, the net result could be a reduction in the national security index.

Elements and Terrain Specificity

More than 3,000 years ago, the Trojan War even if it was an epic mythology, had the interplay of sea and land. The first major war of the 21st century fought in Iraq was netcentric with three more terrains added—the air space, and the outer space (in a limited way) with cyber space supporting it. That makes the three thousand years, or around 80 generations of human life actually static without appreciable change in terrain specificity at a macro level. It may take a long time for wars to spread out to more terrains and terrain shift in activities may be gradual. The chances are that almost all available terrains will be included. There will be neo-physical terrains beyond outer space on a linear estimate as today's ambitious space projects indicate.

Changes in the Environment of National Security

Dangerous and unexpected changes in national security come up when bad deals of the past catch up. It is also not practical to benchmark national security against the variables. Instead, it is better left to a process of maximisation. Almost anything can bother people and take away their sense of well-being.

Global System

Domination will not yield favourable results in the future world. It may have a temporary advantage by overcoming a situation challenge, but efforts to dominate can meet with fatal results in the long-term geostrategy of a nation. It will speed up the slide down in the hierarchical scale because specifically, domination takes the party that dominates to the opposite side—the ante-force in global governance (the terms force and ante-force used in this book are related to governance). The human system that becomes or contributes to the ante-force is not counted in the game plan for national security. When a human system succumbs to the

ante-force, it transmutes into the killer variety. It cannot be the protector of whatever the system may stand for. Turning them around is the responsibility of the superpower, which will also be the superstate in the hierarchy of nations, since the United Nations will not be in a position to exert the necessary dynamism collectively. Collective security is the hymn, a *mantra* that the United Nations chant to keep the members in a sombre state, but is not practical as has been proved in over half a century of its existence. There is no *nirvana* in sight. If anything, it is deviating away from it. Its practicality depends on the time that is yet to be spent in the future. Votes in the General Assembly only give numbers, not the ability to influence beyond limit. This shows that it requires a bond between the superstate of the day and the United Nations that also includes the former as a member. So far there is no viable attempt in this direction either by the superstate or the United Nations. If at all any attempt is made, it is only efforts to suppress the ante-force by brutal physical power, that too in disagreement between the superpower and most others in the UN forum. There are methods that could be tried to convert even the converts in the ante-force to national security process. Such measures have to be applied with the knowledge that the ante-force is part of the system growth towards a much more secure set up—global security. Converting the converts from the ante-force by non-military methods is a much cheaper, though long drawn out process that could very well be undertaken by the superstate under the United Nations support globally and at national level. Individual nations cannot engage themselves in this process of dismantling the ante-force because of external connections or sometimes the character itself may be totally external to the nation. A superpower that declines this process will erode its own geostrategic security at a much higher cost than that of other nations. The world is substantially advanced but in spite of that people feel greatly insecure. The problem is that with advancement, the perceived security level also increases, whereas apparent security based on human needs does not undergo much variation. It is negligible and therefore can be treated as constant. It gets fulfilled ideally with lesser effort. Many in the world and even in advanced nations are not getting the benefits of advancement. Such benefits should even out to people nationally and globally without which even the span of perceived security margin would be distant. For example, while the apparent security level requirement of a person in Burundi is more or less the same as that of a person in the United States, there will be a deficit in the levels of their perceived security in an ideal situation. The threat perceived will also be high when perceived security increases. The threat perception causes a major change in the national security outlook. It is coupled with the forward motion of a nation. Even though the world is advancing, the changes are not appreciable on a daily basis. It will be clear only when one looks back seriously beyond time. The changes in technology cause advancement. These changes are not strictly indicators of human well-being from the national security point of view, but that of development. It is also difficult to accept as human development indicators of a nation unless as mentioned before, the development is evened out

among people. Often it is not. Development adds to comfort, which may have a bearing on apparent well-being, thereby paving the way to NS_{\max} .

Hierarchy of Nations

The hierarchy of nations based on their power is an informal one, with the superstate at the apex and others according to their global status, lining up in succession. In this informal structure, the nation-states align in specific configuration dynamically and not authoritatively. It is only a social perception convenient to understanding the human system taking nations as the basis with respect to their bargaining power in the world. In such a system, there is dynamism at all times not only by development but also by demographic movements. This gives the citizens of a nation the opportunity to simply climb up the steps by migration before their own nation reaches there. This system will remain for a considerable period in future until such time as ideally, every nation is on an equal pedestal. Since such a state is not perceivable, it could be concluded that the informal hierarchy will continue in the world. The hierarchy is not expected to be a hindrance to national security management nor make a nation inferior to another by hierarchy if governed well. The aim however, is to attain global appreciation so that the baseline of the hierarchy is continuously evaluated and upgraded to higher levels of living standards for the people of such nations.

Power Factor of the Superpower

The world has to accept the fact that in a hierarchy of nations, even if it is informal, there will be a small room at the top, which will have a very powerful occupant or two, or more outside it competing for occupancy. The world is already a witness to this occupation on the Christmas day of 1991 by the United States of America. In this case, the competition was direct and geostrategic. The military was involved on many occasions. The world remained relatively stagnant with respect to the principles of national security. It took more than half a century after the Second World War. But a peep beyond this span of time shows that in early 1917, the latter first carved the combat between the Soviet Union and the United States to get into this niche. That was when the United States broke away from its isolationist cocoon in the Great War often referred to as the First World War.¹⁰ What brought the United States into this position? The answers are not seriously relevant to the topic of this book. Since then, the United States has been riding the world projecting itself as the only saviour on many occasions—a positive dictum that a superpower and prospective superpowers of the world are expected to follow in the hierarchy of nations. The activities were too many for the United States—facing the fascists and neutralising the Nazis in the 1940s and thereafter, containing communism, though not successfully. It turned out to be containing the Soviet Union rather than communism, which slipped out from the mesh of containment. The strength of communism has not dwindled in the world. In fact it is gaining more legitimacy

in different garbs that are strictly external to the subject of this book. The core is intact. Communism today is very much a recognisable ideology and a powerful political dogma in many parts of the world and in the mindsets of people. Communists are also democratically elected under constitutional systems. It is the only ideology that is truly international and one fine morning it could pose a great challenge to other ideologies of the world. Here is where objective deviation undermines the power of the superpower; it contained the Soviet Union, but slipped-up in its main objective of containing communism. There are other instances too in the (short) history of the United States where its authority and power as the top gun got diluted by objective deviation. The superpower (as well as a prospective one) has to understand this and identify such power leaks. Objective deviation could be costly in the long run for any nation, more so for the superpower. The turn around came in 1991 when the United States became the sole superpower of the world. But there was a certain method inertia¹¹ based on disbelief among others. Objective deviation was visible by the absence of firm objectives in the modern “new world.” Attitudinal change came to the fore a decade later when the fundamentalists under the Al Qaeda principle committed a blunder in underestimating the power of the superpower. Only fundamentalists will be strategically imprudent to take on a superpower, that too at a time when everything was going well for them—in Pakistan, Afghanistan, Iraq, etc. That brought the nemesis of the terrorist regime in Afghanistan (temporarily?). For the fundamentalists, the reign in Afghanistan was the pinnacle they could reach so far. It was a reign the world watched helplessly and in disbelief—the destruction of the tallest and ancient Bamian Buddha in the caves, hijacking an Indian Airlines aircraft from Kathmandu with the ease of buying popcorn at a Cineplex counter and making the external affairs minister of the country slated to be a runner for superpower to take passage with a released prisoner, enforcing *Talibanism* at every micro inch of the land, among other such acts. They were unique achievements in the world of terror. There were no such accomplishments by any terrorist groups in the past, that too at such speed. And at the end of it all, they let everything go up in holy smoke by sheer miscalculation of over-enthusiasm and foolhardiness. The militant became a comic in an orgasmic climax of cultural vendetta. Terrorists too commit costly blunders like everyone else.

The terror attack on the United States in 2001 made it view its position as the superstate in the mirror of reality. Exceptionally, they acknowledged terror and defined terrorism properly—*one person's terrorist could also be another person's...* The resultant rampage by sheer confidence not only uprooted the Taliban regime in Afghanistan, but also annihilated Saddam's Iraq that was not even involved in sharing a stinking saliva laced hubble-bubble hookah with the terror group. It was a clever manoeuvre of opportunity diversion. There was no objective deviation here. For external observers, it may be a superpower going berserk throwing caution and concerns of the rest of the world to wind, because the national security in its perception is based on monochronic power maximisation, without concern for

others. Besides, it was the first time that the United States had come under attack on home turf after the shocking Pearl Harbour attack on the fateful day of 7 December 1941. It became a question of self-esteem for the United States. Under such circumstances, it is self-interest in the image of the superpower that guides decision-making. It was clear to President Bush Jr. and the people of the United States who had just one objective—take on the ante-force to the United States and its principles now, for profit. Power also meant wealth generation and accumulation. The power of the superpower should never be underestimated. But how can this power be channelised towards the global well-being of those in the lower levels of the informal hierarchy? The US, the most powerful and not so benevolent, will face threats. It may not face a barrage of missiles with precision weapons that can hit a select corn on a cob. The fundamentalist may challenge everything dancing on the pinheads that the powerful knows how to make slippery. Well, an odd attack even with a dirty bomb has some limitations and the fury that it will fan will be fathomless. A prudent terrorist (“if prudent, why terrorist?” is a hypothetical overstatement) may certainly know that it will not be wise to take on the superstate at any cost, at least not directly. Toppling the superpower to pave an easy way for the next one in line will be the best bet. That needs good time; but patience is what the terrorists lack. They are short-lived. They are very knowledgeable and advanced but lack time and patience to become prudent. “Act first and think later” is the motto of the common human brain carried forward from primitivism; for the terrorist it seems to be “act first and think never.” That is worse. Within this imbroglio, the superpower and the hopefuls will have many reincarnations without dying.

Contrary to popular belief, a superpower is not a superiorly powerful entity. It has the power to influence and bargain on the world stage, but taking the vulnerability factor in the power equation of states, the superpower is virtually helpless. Geostrategically, it will be the most vulnerable nation in the world because it has the most to lose. This can be seen from the criticisms the superpower goes through—internal as well as external. Criticising the US is a (billion dollar) business by itself. Every nation and a majority of people view the superpower with suspicion. The UN is strictly not comfortable with the Orwellian way in which the US meddles in its affairs. The projections speak loud and clear. Whether it will be an isolated case with the United States or apply equally to the next superpower is yet to be studied. Indicators are that the next superpower may also face criticism. At least this could be a lesson for the aspiring superpowers that are likely to contest for the top post. It is yet to be seen whether a nation has to struggle to hold on to the top more than the struggle to reach there. Does it mean that the United States is in a quandary by its own status? If so, it is only natural. It is for the superpower to understand and experiment and for the prospective superpowers to observe and learn. The United States reached its position as a superpower towards the end of the 20th century and its effect will be felt more in the 21st century. It received a jolt in September 2001 just when it had got out of the euphoria of receiving the crown a decade before. How does it feel? Ask the US.

The danger of a major global war is not receded, according to British historian Eric Hobsbawm.¹² He feels the US is a megalomaniac without a rational foreign policy. The government in Washington therefore, becomes dangerous to world peace (in the name of peace!). The US has insecurities about its economic dominance since the centre of gravity is shifting away from it, towards Asia.¹³ Today, unlike in the past, states including the superstate do not have complete control over economic parameters. The growing reach of transnational corporations is curtailing state power even in matters of physical security. States are abandoning almost all aspects of physical security including running prisons. According to Hobsbawm, the US has seized the 11 September 2001 opportunity to expand its hegemonic interests in the world by disguising it in an emollient cream of tact.¹⁴ Seizing opportunity is not only an act but also statesmanship for any government and the US the superstate, has to have its object very clear—to hold its position at the top. Seizing opportunities to face threats is one of the ways of strategy. It cannot be attributed as blame. The superpower, who ever it may be, will be able to win any war once it reaches that stage, but the irony is that it can never win peace—the feel of it—even after a war. Hence, peace for them will be war and it will remain that way till they withdraw. It is in this effort the superpower will drain off its power and money. Therefore, its ability to remain in its position to some part also depends on its ability to win a war without fighting, if it is not capable of brokering peace. The superstate could finally be ditched by all nations. No one will cry when it falls. The problem with a superpower, whose power lies in its preoccupation with force, is identifying an enemy. For the US, fighting shadow windmills beyond borders started with the invasion of Iraq in 2003. Such options may be limited in the future. The next move for the US to exert its position and make a statement to the world will be a more difficult one. It should also not waste its energy against quixotic regimes.

The ante-force to the power of the superpower in its natural position is expected to be the combination of those forces that may attempt to destabilise its position. Most of these forces will not be aimed at it directly. They will be in the process of evolution as a national or regional power. The power is primarily derived from technology and economics. Technologically, the superpower is expected to be the leader. But technology could shift elsewhere. Similarly, the economic centre of gravity of the world in a global environment could shift out of the superpower state. These shifts can bring serious decision conflicts within the superpower and the flaws in decision-making associated with such changes will decide the actual ante-force to its stability. If the superpower does not appreciate these changes in their correct perspective, it is likely to make serious mistakes. One of them could be over-dependence on military power. Another interesting phenomenon in such cases will be the criticism it will encounter in the home base, which is internal to the nation. The business of criticising the United States will be bullish. In other words, the ante-force in the power of superpower will mainly be within the state rather than outside it. What are seen outside will be threats or resistances to its

ambitions towards national security, whereas those seen inside will be the destabilising forces to its status as superpower. The superpower will do well if it learns that it has a responsibility beyond the shores of homeland towards the well-being of the world in its passage to global security. There is a misperception in its thinking that its national security is within the limitations of the world and not contained within its state boundaries extended to its citizens, including those beyond. It should know that it has to support the UN in making the world a better place to live for all. The UN could very well be its agent of change for the well-being of the world. It should not keep aloof from the UN. That will trigger the end and may prove to be a grave mistake. It should not consider that the planet belongs to it alone and behave like a super cop and terminator rolled into one as the final arbiter on judgment day. The resources of the world are not at its exclusive disposal. It is not a bully in a crowded prison. The world belongs to many people and not to the superpower alone. Instead, if it remains on top with the aerial view of an eagle it may find itself firmly on the ground. An eagle is an elegant bird of power and grace. It should never aspire to become a vulture. That is the law of nature and what history has proven. It can also be proved more appropriately in a bio-model but unfortunately, that is not going to happen. The world has to witness many nations dynamically moving in both the directions in the hierarchy of nations and therefore, the superpower has to be replaced by another; otherwise the hierarchy will be static. It is a very unstable situation. It may cause serious problems. Therefore, such a state is not envisaged. Under such contributions the hierarchical systems have to be replaced. Therefore, the superpower is bound to make mistakes that will cause it to crumble when the entropy within maximises. What it can do is to prolong its stay and prepare for the fall gracefully and by choice, and learn to absorb the thundering forces that will be caused in the wake of the fall. The next superpowers will have a major task on their upward the climb. It did not happen when the first superpower rose to the pedestal. The changes that followed such as disintegrations, *en bloc* conversion of states into different alliances, etc., were disastrous to human kind, if not to the world in totality. So, the United States of America needs to prepare and be ready; the good news is that it understands this. That is a sign of survival. It will not slip easily, especially, if it unravels the ante-force to its advantage.

NATION CENTRIC APPLICATION OF NATIONAL SECURITY

National security governance will be under the policy based perception of the governments—political power maximisation; holding the position; succession issues, dynastic agenda; political existence and survival; dominance; annexing territories; military power; national power maximisation, etc. whereas, the concept is people-centric, aimed at their benefit individually and socially. The agent beneficiary is the people; therefore, they should partake in governance towards NS_{max}. There are too many variables. The future has to be perceived and examined

pragmatically. There can be many diverting opinions and predictions without analysis. Clarity of vision is essential in national security management as a people centric concept. It will call for:

- (a) Strategic assessment of the future of a country
- (b) Strategic assessment of the future of the world
- (c) Incorporation of assessments in national security management
- (d) Implementation of national security policy
- (e) Continuous review of national security policy
- (f) Steering the process through future

Most of the problems the world faced would not have been there if such policies have been adopted in the beginning of a nation-state. Almost every nation changed course on various occasions of their governance. Those who had to change fewer times are more powerful and developed today. A change through a serious review to adapt with the new is acceptable, but a total deviation from the original policy shows that the entire process in the past has been discarded as being destructive to national policy and objectives. It is a testimony for absence of vision in governance *ab initio*. A strategic plan, whether military or non-military, has to be consistent. Frequent changes will be disastrous in its race against time. It will lag behind. Mere existence is not an indicator of progress towards well-being. A nation needs considerable intellectual guidance from professional strategists for this purpose. Each nation, depending upon its position in the hierarchy of nations has to appreciate its national security requirement to draw a policy. It has to understand clearly where it stands at a particular moment in time to estimate the distance it has to traverse or change course. The key trends in the world in general have to be watched like a hawk. Such trends may have many things common in history. For example, terrorism, the much talked about subject today is not something new. Terrorism cannot (easily) be eliminated but can only be contained. As long as the containment is in force, whatever may be the method, terrorism will stand out looking for an entry. The trend in terror and violence is that they are presumably on their way out, in one argument, with its peak stage already over. This is an untested hypothesis made with a weird feeling that something more serious than any attack witnessed so far may strike one day. The assessment is based on the psychology of the dead-ender perpetrators. Every terrorist attack leaves the terrorist with a sense of defeat against the power of the state. It is a situation where there are no winners. It is based on a dictum that terrorists will strike till they win. And terrorists will never win; so they will always strike. The mind of the terrorist will remain venturesome for vindictive strikes. The trauma to the victims is permanent. This statement is based on heuristic inputs that indicate terrorism and associated activities are not individual creations, but well planned state and non-state promotions with ample money and training facilities available in select places that will remain intact at anytime without any dent on their capabilities. The merchandise of terrorism will spread from fear for life and hostage situations to

economic centres and brain banks of the victim nations, globally. Considering that the ante-force related to terrorism will never die, it is not killing terror that matters, but caging it. The world could inform its inmates with a billboard, “heaps of fireworks ahead” on the highways of time.

The superstate and the United Nations have the power to influence the world. While the superstate will have a stake in the pie, the United Nations belongs to the world. It may not have the kind of bargaining power that the superstate will have. But still the influence of the United Nations may prevail in the long run. The gap between the UN and the superpower is significantly wide with the latter having a definite advantage over the former at all times. The position of the UN is weak though paramount by its well-prepared Charter poised for further changes. Currently, there are situations in the world that can only be handled by midway solutions—between chapters in the Charter. There were situations when the UN would have felt the need for a few more exclusive pages between chapters 6 and 7 in its Charter to overcome its handicap in intervention. The superstate’s vicarious disobedience of the UN is clear and visible to the world though the former makes efforts to show consensus through allies. Coalition is the name of the game that the superstate uses to show that it has the consent of the United Nations. It is fine, and that is the way the world is going to be in the (UN)certain scenario at every dawn of the day. It is important to add here that, after all is said and done, the right place for the UN headquarters is in the country of the reigning superstate, not outside.

The world certainly is not heading towards chaos or disorder. In some quarters, there is talk about integrative and disintegrative dynamics. This is also not clear. What is obvious is that situations, whatever they may be, will be exploited. War, economic crisis, energy crisis, disasters, environmental crisis, transnational crimes and corruption, changing mode of technology, formation of governments, integration and disintegration of nation-states, border disputes, upward and downward movement of nations in the informal chain of hierarchy, increasing gap between the rich and the poor, globalisation and control of the world by corporates and individuals, ethnic conflicts, and the restless ante-force determined to destroy the left over peace and tranquillity in the midst of chaos—that is the world: past, present, and future. It sums up in one word—unchangeable. Changes will be on the surface; at the core, the world will remain without much appreciable change with respect to its human inhabitants about their physiological, mental and emotional needs. In fact, without change it will remain a boring place for strategists who have to look into relatively “smaller” issues like “terrorism and nuclear proliferation” without an answer. The UN will be watching, and over its shoulder, the superstate will survey constantly for its own survival. These two global entities have a responsible job to do, to prevent the world from plunging into turmoil. This, the world expects them to do very well. They are capable.

The intent in national security trend analysis is to ignite the thought process among the mentally agile and independent to diagnose the future trends in national

security. A running hypothesis is that the world will be different tomorrow with respect to threat perception. In a bio-model, one can see that the threat perception will remain unchanged except for form and shape. Therefore, in future too, it may continue in a different form. But the resilience of human beings will certainly surpass the surprises that are in store. The concept of national security will not get erased in spite of problems in its implementation. What is needed is total acceptance of the concept under the doctrine of apparent well-being. The role of the government is to provide this. It is imperative for a government to understand its accountability when it is a matter of protecting its citizens and providing them an anxiety free life by simple steps to the level that they apparently need it and not the level at which they perceive or want it. There are children who commit suicide under stress of competitive education. There are also children, who under extreme pressure, shoot down their classmates in the schools. Governments have a role here and where they cannot reach out, there is the global community under the United Nations. The international community has to rise to this occasion with all their might in whatever capacity they are—rich, powerful, scholarly or just ordinary with no titles to go by. All have equal responsibility to steer the governments towards NS_{max} .

TRENDS—SUMMING UP

A summary of probable trends in national security in the future can be seen as follows.

- Nations may falter in their perception of national security and will steer different courses towards governance.
- National security, largely, will continue to be a politically driven concept with military security at its centre.
- Where governance is by force, force will be at the centre of national security decisions.
- Nations will change tack, and policies may change abruptly.
- Many nations will default in settling their internal and external disputes.
- The superpower becomes the superstate in expression in a monocentric world at the apex of the informal hierarchy of states. The title superstate signifies that the superpower is a responsible state. It need not be. Other nations in a race to the top will also be referred to as superpowers; one among them may even be called the prospective superstate.
- The United States as the first ever superstate, is expected to remain in that position for a very long time. The time of its decline and the power that will replace it can be predicted by research.
- There are possibilities of “ethnic” shift in the governance of the United States—the current superstate. It also means gender difference in holding the office of the president for the first time in history.

- There will be various types of ethnic power shifts in many nations in the long run.
- Under the concept of superstate, the stable situation is monocentricity. Polycentric situation is when the superstate declines and is challenged under close competition.
- The race for the title of superpower will be persistent and can be seen clearly on the track where the nations stand at least as front-runners giving an indication of who will forge ahead and who will slip back.
- The superstate will be continuously engaged in retaining its title under a flurry of competition that it will attempt to suppress, contain or pre-empt.
- Terrorism will continue and cause extreme damage to life and property. The world will accept its presence in strategic balancing. Terrorists will change their tactics and targets but will never establish permanently. People will develop terror immunity—absence of fear. Predictions based on terror will be an industry.¹⁵
- Countries are more likely to split than merge.
- The issue for the superstate will be survival at the top. The more it has to struggle for the title, the shorter will it remain there. A major policy shift will be necessary.
- The concern of the world towards national security will be based on contemporary issues. The countries will be embroiled in political, economic and geostrategic detractors of governance. The world will be preoccupied with conditional aspects of national security rather than the elements.
- A majority of nations will not even have a national security strategy in place.
- Many nations will be under external support in governing their nations.
- The race to be the superpower will induce identity crises in many super developed states.
- Ethnic security debates will not only continue but may also seek to correct past mistakes that may face objections from supporting quarters.
- Acceptance and implementation of global security as a concept will be suspended.
- The world will evolve into a better place but total national security for the people will remain a pipe dream.

CONCLUSION

The major trend in national security is the inability or rather reluctance to accept the concept directly as a people centric subject. It is not likely in the near future because the world has not understood a common policy for achieving the total well-being of the people. The trends are that the nations will practice national security the way they have perceived it. Most such perceptions will be military based diplomacy. Governments will try to accumulate power under misguided

judgments. There are chances that a handful of countries may practice national security at higher levels attending to its various elements scientifically. The nation-states will remain under an informal hierarchical system based on their geostrategic bargaining power. While every nation will move forward, a few may climb over others and slip ahead. The gap in hierarchy between nations may also widen in course of time.

Notes

¹ It is important to mention that the reasoning stops here. It does not provide an assurance that the world will be better tomorrow than it is today.

² A term that the physicists identify with disorder. Increase in entropy means an increase in disorder in a system. More on this is given in Chapter 6.

³ "Globalisation has Slowed Growth," *The Hindu*, Kolkata, 2 October 2004, p. 4.

⁴ Ibid.

⁵ Gap between the points in an elastic ribbon increases proportionate to their original spacing and gradually decreases towards the middle. The middle remains where it was. It is an interesting aspect in economics and in any social reform that an elastic approach of governance will only give the feel of development whereas the sum total of development will be zero. The situation becomes dangerous when the elastic limit yields to the stretching forces. That will result in a system breakaway and thereby disorder. Increasing gap between the haves and have-nots (in any aspect—money, knowledge, etc.) is a warning sign of impending yield point. Governance should avoid the elastic approach.

⁶ "Global Trade will Rise to \$8,048 bn by 2007," *The Asian Age Feature*, New Delhi, 2 October 2004, p. iv.

⁷ "WTO Policies Meet India's Demands," *The Asian Age Feature*, New Delhi, 2 October 2004, p. ii.

⁸ *The Economist, Economics: Making Sense of the Modern Economy*, Profile Books, London, 2001, p. 143.

⁹ Ibid. p. 144.

¹⁰ In fact it was even earlier that the United States has been on to global policing. It first took on the pirates in the Caribbean in 1817. But for all practical purposes, its entry into the First World War as an individual force to regulate it, is considered as the gaining of the ideology of the superpower status for a nation in the world. It is also important to consider it this way since it was the United States that itself worked towards this objective.

¹¹ The word method-inertia is used to explain the process of remaining stuck in the past instead of visible changes.

¹² Mini Kapoor, "With Irrational US, Global War Can't be Ruled Out," *The Indian Express*, New Delhi, 18 December 2004, p. 4.

¹³ Ibid.

¹⁴ Ibid.

¹⁵ R. Sukumaran, "Cryptology, Digital Assassination and the Terrorism Futures Markets," *Strategic Analysis*, Institute of Defence Studies and Analysis, New Delhi, Apr–Jun 2004, Vol. 28, No. 2, p. 219.

23

Modelling National Security

*The nucleus of an atom could be a model to understand
the vastness of the universe.*

National security being a variable and measurable quantity, is a function of time. The process is a vector, not a scalar (quantity). That means it has a direction into time. National security is under heavy static inertia in many nations of the world. Wherever thought about, it is breaking the inertia and moving into dynamic mode. Under this lemma, that the concept is a dynamic vector in motion, it is necessary to presume that the concept when integrated from zero to infinity will aim at maximisation of national security in a country. The ultimate objective is to maximise national security. This target could be depicted by a symbol. For the sake of convenience and to avoid complications in its comprehension, it is symbolised in a non-mathematical form from the very beginning as,

$$NS_{\max}$$

The objective of a nation is to achieve the ultimate in national security by governance, given by the symbol NS_{\max} . Under this objective, the purpose of governance mathematically takes the form:

$$\int_0^{\infty} NS d_{ns}$$

It is further equal to the sum total of the optimised interactive value of each of the fifteen identified elements of national security. It is necessary to know that the optimised value of an element is different from its maximal value. It has to be arrived at taking into consideration the gain in the interactive value of each element with another because an incremental increase in one can cause a decline in another. In other words, the fact that the efforts of maximisation of one element (say, military security) did not cause a change in another element (say, economic security) by a decline larger than the former means that the total contributory change in NS_{\max} is positive (incremental). It is the total make up of the national security factor that has to be prevented from decline by the interactive gains and losses of elements. In such a case the quantum of national security is equal to,

$$NS = \sum NS_{\text{elements}}$$

whereas,

$$NS_{\text{max}} \text{ need not be equal to } (\sum NS_{\text{elements}})_{\text{max}},$$

unless all the elements are positively changed by an incremental change in their interactive element. Therefore, the change in the quantum of national security will be the result of changes in the interactive elemental matrix. This will require valuation of elements at a given time to prepare the national security matrix of a country at that stage. The elements need to be symbolised for this purpose. A symbolic assessment of currently identified national security elements is given in Table 23.1. Symbols are allocated to the elements for identity while assessing their quantum in mathematical modelling and calculation of national security index at any given time. They are variables. Values can be assigned to them according to situation appraisal.

TABLE 23.1 Symbolising National Security Elements

<i>Elements of National Security</i>	<i>Symbol</i>
1. Military security	m_s
2. Economic security	e_{s1}
3. Environmental security	e_{s2}
4. Resource security	r_s
5. Demographic security	d_{s1}
6. Health security	h_s
7. Disaster security	d_{s2}
8. Border security	b_s
9. Energy security	e_{s3}
10. Ethnic security	e_{s4}
11. Food security	f_s
12. Geostrategic security	g_{s1}
13. Informational security	i_s
14. Cyber security	c_s
15. Genomic security	g_{s2}

The “quantum” value of elements will be the prime parameter in decision-making in national security matters. The national security of a nation can be enhanced effectively by managing its elements with due consideration to collateral

effects on other elements. These elements can be brought under a matrix to project the national security matrix for decision-making:

$$NS = \begin{pmatrix} m_s & e_{s1} & e_{s2} & r_s & d_{s1} \\ h_s & d_{s2} & b_s & e_{s3} & e_{s4} \\ f_s & g_{s1} & i_s & c_s & g_{s2} \end{pmatrix}$$

Symbols representing the 15 elements of national security are arranged in a rectangular 3×5 matrix (three rows and five columns), which could be compared with other matrices in a finer assessment of interactive dynamics. Such matrices could be either that of terrain based security matrices or elemental matrices as required. For example, a holistic view of maritime security matrix, a constituent part of national security, could be analysed with respect to the national security strategy in a model exercise. This concept can lead to models based on mathematical design that can support the calculation of the NSI, the national security index. The elements can be a set of natural numbers (N), integers (Z), real numbers (R) or complex numbers (C) according to calculation for the purpose of modelling. This needs further research. The matrix of 15 elements could also be arranged in five rows and three columns but unless equal, an array with fewer rows is preferred. When there are additions or deletions—whenever a new element comes up, an existing one disintegrates or does not have subsequent value any more—the number may change. For example, if one day the world decides that the concept of military campaigns is outdated (that will be a day of earnest promise!), there will be no more wars. The military security element may either disappear or disintegrate into more than one, making it difficult to make a geometric array. If the element fades away, the number of elements will be reduced to 14. In such a case, the matrix could still incorporate the element of military security as in the past, but its value will be null for calculations. The problem will arise when the increment in elements reaches 17. There will be at least one null element as a dummy to make an array of 18. Such arrangements provide excellent flexibility. The rows and columns may have extra elemental space(s) filled by null elements that are dummies. It will be advisable to place minimum dummy elements for a comfortable matrix for calculations. The matrix set up with 15 elements for national security is not expected to change in the near future. An array of the 15 identified elements and their accepted symbols are given in Figure 23.1. The interactive arrangement of the identified elements of national security has been made in arrays (horizontally in rows) in sequence of their assumed hierarchy. It is only for the sake of convenience of model building.

The hierarchical qualities with respect to the presumed time of introduction of these elements have no (serious) significance in NS_{\max} . It is the interactive geometry that is important. The elements can therefore, be arranged in arrays as convenient. It will be better if the null element in such a case is positioned in the space occupied by the replaced element in the table. In case a new element is

introduced, the null element or elements could be placed at the end of the table after it. The table of elements provides the background for the national security matrix as well as explaining its interactive geometry.

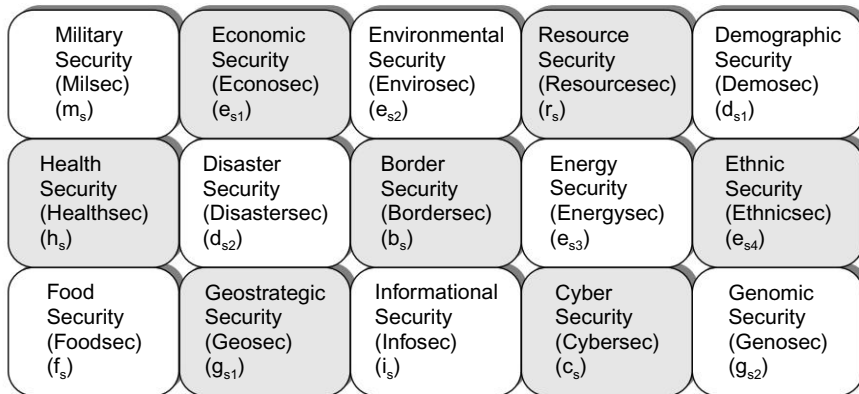


FIGURE 23.1 Array of Elements of National Security

Are the elements really in the form of a table, a matrix, an array or a cluster? No, not exactly. It is an interactive congregation of a set of elements of a concept of human well-being that is to be achieved by governance. How could one shape the congregation? The universality of the elements lies in a model that could be seen vividly. The best approach could be to view them in a never-ending chain of a matrix expanding against a vast continuum of terrain specificity. Pictorially it could be as illustrated in Figure 23.2. Such depiction indicates the never-ending nature of the elemental approach in national security within the vastness of the terrains. Some elements may disappear and new elements may join in the inter-elemental space—all in the course of time.

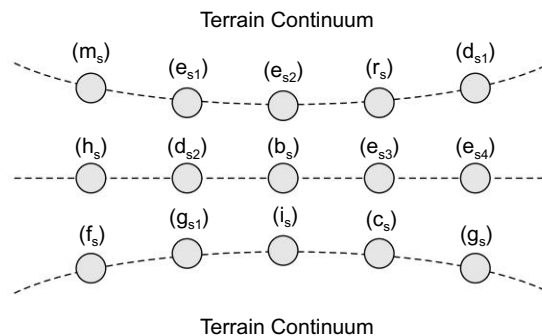


FIGURE 23.2 National Security Elements in the Expanding Terrain Continuum

INTERACTIVE MATRIX OF ELEMENTS

The objective in national security is achieving NS_{\max} . Hypothetically, this means maximising each of its elements. But there will be situations when maximising one can bring a reduction in another. In such cases, the objective will be optimising both. It is very intricate especially when more than one element is involved in the combination game. It is the most difficult part of managing national security and often riddled with political and bureaucratic conflicts in governance. In a hypothetical situation statement say, an incremental change in milsec may induce four strategic application points:

- Either increase or decrease econosec, energysec, ethnicsec
- Decrease envirosec, resourcesec, demosec, healthsec, disastersec, foodsec, geosec
- Increase bordersec, infosec, cybersec
- Have null¹ effect in genosec

The first step in understanding the interactive matrix of elements is to appreciate that an increment in one element may produce one of the four strategic application points in another inclusive element as per situation.

- (a) A duality situation in which there is a probability either for improvement or decline in another.
- (b) A singular situation where the probability is only for a decline.
- (c) A singular situation where the probability is only for improvement.
- (d) A null situation where seemingly, there is no effect.

In the hypothetical case above, milsec is the primary element whose incremental change is compared with the corresponding effect in another element—the secondary element. The reaction can be in four different ways. This process need not be reciprocal; the reciprocity may not be there when the role is reversed. When the secondary element becomes the primary element and an incremental change in it is considered and examined with the corresponding change in others, the result need not be exactly the same as it had been when the elements were reversed. For example, when an incremental change in milsec brings a corresponding proportional decline in econosec, in the opposite case, an incremental change in econosec may have an effect on milsec that may be progressive. Therefore, each element has to be seen as primary as well as secondary at different times for different applications of strategy. In this way, each element will have 14 different interactions in their primary roles with other elements for every task in strategic application. There could be thousands of tasks in strategic application that have an impact on each element in its primary capacity and a corresponding four way change in each other element in a secondary capacity. This means that there will be 210 possible interactions (14 times 15) among elements at the minimum for each task. It is considered as minimum since there are more interactions of primary elements with secondary elements in more than one combination. For example, an

incremental change in milsec can affect econosec and geosec together, negatively. An example is a nuclear intention by an underdeveloped country. The decision has to be weighed accordingly. It is important to understand here that it is the incremental change that matters in NS_{max} and not decline since the objective is the process of maximisation and not minimisation.

The interactive matrix of national security elements is a complex and highly competitive game. It is too professional and not yet researched seriously. It is also for this reason that those who govern do not generally favour such an approach. It needs the highest degree of coordination and understanding which often is not easy to come by under bureaucratic conflicts. The usual way in which national security governance is carried out is by following the path of least effort. There are many such paths—politically oriented (as per political party manifest), bureaucratic (based on bureaucratic comfort following the political path), terrain based (e.g. ocean policy), doctrine of the agency based (e.g. naval doctrine), internationally oriented (law and treaties), directive (e.g. superpower dictum), global (e.g. UN mandates), integrated (e.g. joint doctrine), etc. Managing national security governance by elemental interactive matrix is complicated and needs the highest degree of professional competence. Once mastered and implemented, it could be the easy way to NS_{max} .

The net result in the process of maximisation of national security will be the sum of increments and decline in each of the elements in its primary and secondary role for every task of strategic application. The case that an incremental change in milsec brings an incremental change in econosec is different from an incremental change in econosec brings an incremental change in milsec. These combinations therefore, have to be examined very carefully by the planners of national security. And such planning has to be done before the application of a particular task for maximising the element. Often, this is difficult and hence, the planners will have to depend upon national security strategists who in turn, have to depend upon model-based calculations. Fortunately, the most cost-effective and live modelling can be done by professionally analysing the bio-models as and when they unfold in many parts of the world. Bio-models could also be created under nurtured conditions. But the bad news is that, in national security, many insomniacs believe in somnambulism. They sleepwalk while awake.

Defining the problem related to national security involves identifying the concerned elements and the associated deficiency in them. Initially, problems will appear in an imprecise manner. Refining the problems to arrive at the actual issues is the process of diagnostics that separates the symptoms from the disease. Otherwise, the planners and strategists will end up with mistaken solutions.

DOCTRINAL APPROACH: NATIONAL SECURITY

A holistic doctrine for strategic appreciation will comprise domains, objectives and goals. Each element of national security needs to be assessed with respect to its

doctrine or doctrines to identify the domains, objectives and goals. It leads to a realistic assessment of ends, ways and means for achieving the goal thus identified. A doctrine in national security strategy is a body of principles accepted or identified officially and presented thereby. A doctrine can transform with respect to changes in the system and system environment. It is not constant. Accordingly, the domains too change. The domain is the area of doctrinal function. It has boundaries that are implied in the statement. Objectives are the intermediary targets on the way to achieving the final goal. Usually, the goal remains committed unless radical changes are imposed. In the national security context, the goal is maximisation of national security through optimisation of ways and means with due allowance to the interactive elemental geometry. It is not a definite entity.

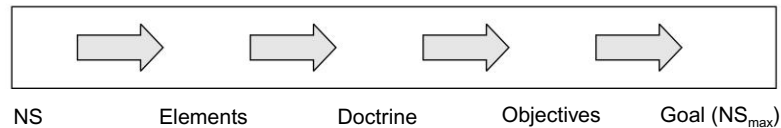




FIGURE 23.3 The Doctrinal Approach—National Security

The basic doctrinal approach is illustrated in Figure 23.3. The ultimate goal in national security strategy is NS_{max} . All efforts in governance are aimed at achieving this goal through maximising the elements of national security with due concern for their interactive geometry, evolving appropriate doctrines, identifying the objectives and getting there. Within each of these elements there will be a domain, objectives and goals. The goals in subordinate elements can be the objective of the macro subject next in superiority to it. The chain of strategy is very long and has to be extended patiently and carefully. Any mistake in choosing the doctrine will be reflected in the final outcome. That will result in a throw off from the final goal and therefore, the doctrine must befit the final objective, i.e. the goal. Often, a government will initiate a doctrine with a goal at the end. Successive governments may change the doctrine with respect to their political environment and ideologies rather than changes induced by time, keeping the goal intact. But the result will be a major throw off from the original goal. This is interrupted strategy. It will be ineffective. This can happen to every organisation when there is a change in leadership. The change takes place at the doctrinal level and the goal gets distorted at the end. It may not be so in corporate governance, because the change and ideologies are not going to be interrupted much. This stability in doctrinal approach is what makes people opt for privatisation. A government organisation will be much cheaper and more competitive for ordinary people if it is free from malice of interrupted doctrines and disoriented goals. Unfortunately, that is not the way governance functions in governments and governmental organisations, including the forces. Table 23.2 illustrates the doctrinal approach.² The goal is the ultimate end result, which is not shown in the diagram because national security is seen as a process here. The doctrine may have more than one domain or a different domain



from that of another state. For example, the political doctrine of a state could have political as well as military systems as its domains. In another case, the domain of a nation-state based on religion could be different from that of a nation based on secular democracy. The domains may also shift with respect to scenario. A nation under civil war when hit by a monstrous natural disaster may find a shift in its doctrinal domain in a flash. It may shift from the military to the disaster domain in its NS_{max} process. The diagram therefore, has to be seen only as a hypothetical example. Similarly, there could be multiple objectives for each of the doctrines in the same domain. The strategists when identifying the probable domains may have to see them as nation and scenario specific.

TABLE 23.2 Doctrines, Domains and Objectives: National Security—Examples

Doctrine	 Domain	 Objective (could be)
Political doctrine	Political systems	Avoid war
Military doctrine	Armed forces—military and non-military Military systems	Wage war to win Support war for alliance Sustain war
Economic doctrine	Economic systems	Increase purchasing power Increase reserves Decrease deficit (specific value)
Intelligence doctrine	Political systems Intelligence agencies	Information usage for decision-making Real-time information and analysis
Nuclear doctrine	Political systems Nuclear policy	Deterrence Energy Second strike
Biological and chemical doctrine	Political systems Military systems	Deal with the enemy biological and chemical weapons. Asymmetrical counter balance
Space doctrine	Space policy and plans Communication policy and plans	Resource exploration Environmental security Intelligence gathering
Maritime doctrine	Ocean policy and plans	Maritime zone development and exploitation

(Contd)

Table 23.2 Contd

Doctrine	 Domain	 Objective (could be)
Information doctrine	Political systems Media	Public awareness and participation in governance Public information
Environmental doctrine	Terrain specific environment Resource based environment Energy policy	Ecosystem balance Resource sustenance Energy balance
Resource doctrine	Environment Foreign policy	Resource sustenance Energy and strategic mineral availability
Demographic doctrine	Political system	Secular attributes Employment to all
Health doctrine	Demographic system	Physical health for all
Disaster doctrine	Political system Foreign policy	Disaster management council Preparedness to support international aid in case of a disaster
Border doctrine	Entry points	Biometric examination
Energy doctrine	Political systems	Develop alternate source of energy
Ethnic doctrine	Social system	Empowerment of women
Food doctrine	Agriculture	Increase production to a pre-determined target Export
Geostrategic doctrine	Diplomacy	Agreement on cross border confidence building measures Dual citizenship to non-resident nationals
Cyber doctrine	Internet protocol	National legislation on copyright violations on net protocol
Genome doctrine.	Agriculture Medical	Selective modification of food products Gene therapy

While nations may have identical doctrines, the objectives and at times, the domains too could be different. This is an important attribute in geostrategic

interactions. A state engaged in a prolonged war with a neighbour with a destabilised economy may have a military doctrine in a particular scenario in which it may think of attacking an affluent, but militarily weak neighbour. In this case, the domain of the doctrine could be the military as well as economic systems. Under the domains, the state finds that attacking the weak but affluent neighbour and seizing its rich resources is an acceptable and critical objective. In such a case, the objective will emanate from the doctrine and domain as, “attack the neighbour and capture its resources.” The consequences however may vary, but will not be in the original strategic mapping of the incident. An example is given in Table 23.3.

TABLE 23.3 Differing Domains and Objectives

Country	Doctrine	Domain (s)	Objective (could be)
A	Political	Political systems	Avoid war against B
B	Political	Intelligence	
		Military	Wage proxy war against A

The case of countries A and B are of identical doctrines, but different objectives that will be brewed in different domains. Handling such cases will be difficult for both the countries by the normally attempted missionary position of negotiation. Basic techniques of negotiations are suitable for situations where the doctrine, domain and objectives are identical for the participants. Mostly they are not.

STRATEGIC MAPPING FOR NATIONAL SECURITY

Preparing a strategic assessment of the situation with respect to a particular time or period in a nation's life is essential for planning the national security strategy. It is a guidance tool to those in governance. The conduit of strategic mapping comprises the following.

- (a) *Policy Statement Mapping (PSM)*—Most of the nations may not have an exclusive national security policy statement. What was going on in the minds of the national security agents of Iraq, say a month before the United States attacked them in 2003, or the Indian and Sri Lankan authorities before the 2004 tsunami? They were unaware of the impending calamities. In the absence of a national security policy statement mapping, a strategic approach to national security will not yield the desired result. Governance will be stressful fire-fighting based on situational priorities.
- (b) *Strategic Area Mapping (SAM)*—SAM supports median planning to maximise returns from certain specific aspects and minimise damage to them. A sample of strategic objective identification by SAM is given in Table 23.4.

TABLE 23.4 Strategic Area Mapping

Area	Strategic Goal
Oceans	Maximise ocean property returns
Resource	Maximise returns
Education	100 per cent literacy
Environment	Maximise returns, minimise damages
Islands	Maximise strategic advantage and returns

- (c) *Strategic Location Mapping (SLM)*—SLM follows PSM. It provides for a fixed long-term planning for operations management in every elemental aspect of national security to the concerned action agencies. It is based on terrain specificity, threat perception, problem dimension and the geopolitical situation against the background of the national security statement. Table 23.5 gives an example of locations for mapping against terrains specificity.

TABLE 23.5 Examples of Locations for Strategic Assessment

Terrain	Examples of Locations
Land	A village likely to be under drought A coastal area or island likely to be hit by a tsunami A road that could be buried under landslide or avalanche A specific border area that could be infiltrated A mountain range that could be attacked An army outpost A city that is within a disaster zone A nuclear facility More...
Ocean	A creek where aliens could land An island in the ocean, which could be targeted by militants A coral reef that could be affected by El Niño A fisheries area meant for spawning A sea border where infiltration can take place An offshore area where there are vulnerable oil rigs More...
Air space	Area within, around and above a particular building A specific border area Air space over offshore vulnerable areas Air space over a military unit Border air space where environmental disaster can migrate Air space close to outer space for missile defence Airport flight approach areas More...

(Contd)

Table 23.5 Contd

Terrain	Examples of Locations
Outer space	Border area for space tourism Neo-orbital area Space laboratories Probable spy satellite migration areas Earth surveillance satellite locations Navigational and communication satellite locations More...
Cyber space	Personnel computers including laptops Servers Data base centres Local are network Classified databases Internet domains More...
Genome space	Stem cell research locations Likely illegal cloning locations Genomic research laboratories Genomic data base centres Genetic warfare research centres Bio-energy research centres More...

- (d) *Threat Perception Mapping (TPM)*—Mapping with respect to threat perception of the state is for tactical designs and short-term strategic appreciation under varying situations. Threat may vary or shift the location in certain cases. The threat matrix cube explained earlier is an application tool for this purpose.

FOLLOW-ON ORGANOGRAPH

The identified model that flows from strategic assessment mapping for national security is given in Figure 23.4. The national security policy statement forms the basis for decision-making. Planners may use various tools including modelling for converting the decisions into action. Here, SAM, SLM and TPM feedbacks related to the topics are vital. Actionable decisions are executed through the concerned agencies. Such a model is very essential not only to make national security strategy operationally effective and cost-efficient, but also to prevent the people involved from deviating from the desired track in the process because a deviation from the normal by lack of understanding can disorient the national objectives.³ Another advantage is that, in a conscious governmental system, irrespective of the political attributes of the government, the national security strategy will not shift towards political objectives.

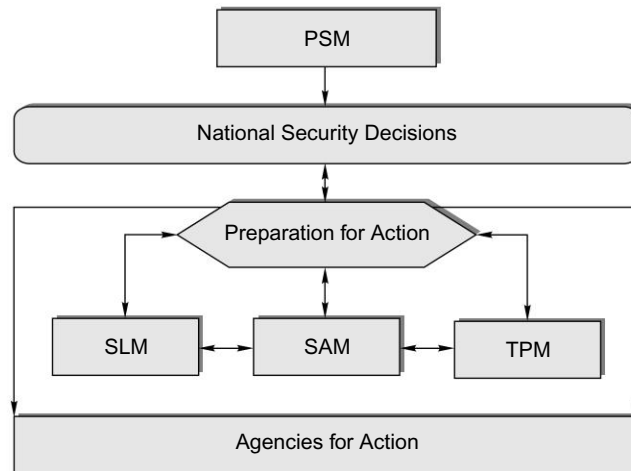


FIGURE 23.4 Follow on Model—National Security Strategy

MODELS AND MODELLING

Almost every discipline that merits serious study uses models to facilitate discernment in decision-making. Models can only be designed once the problem is defined and governing parameters are identified. A model can give indications if there are errors in defining the problem. In that case, the structure of the model will be flawed. That is another advantage of model building. Difficulty in making the model may be an indicator that the problem was not diagnosed properly. Models comprise constants and variables relative to the system entity. For example, geostrategic location today is a constant for India. It was a variable for Colonial India when the borders kept changing and governance of the country was based on policies that originated in the country of its colonial rulers. They were not just one, but many, whereas Colonial India was a unitary entity all the time. Theoretically, the geostrategic location tends to become a constant when all other parameters are stabilised. The process of the geostrategic location moving from a variable to a fixed entity and then vanishing by disintegration or fragmentation, and transforming into another form or being totally absent, is an interesting study. Models are widely used. Some are prepared; some are natural. Preparing a model is based on fixed and variable boundaries. There are different types of models depending upon their purposes and functions. The models can be mathematical or non-mathematical. Mathematical models are represented in mathematical terms—in symbols and expressions. In this book, the objective of national security is expressed in a non-mathematical symbol NS_{\max} . Here the model is a symbol. Such modelling is simple and serves to guide the decision-makers to converge on to the problem. The symbol unifies the thought process at the basic level. There are models beyond symbols for further elaboration of problems with respect to their decision aspects, objective functions, constraints, parameters, sensitivity

analysis, etc. Deriving a solution from a model is based on the procedure developed to test the model. The procedures could be based on computer estimates or on a relatively long process of observation, especially in the case of non-mathematical models. In many cases, the models are to be tested as in mathematical models. Natural models are those that are readily available in nature and can be used for knowledge generation, e.g. an archaeological site, a flower, etc. Testing a model is highly important for furthering studies. There are various types of models such as:

- (a) *Generic Model*—A static model that facilitates planning, arriving at the appropriate options and re-moulding with respect to changes
- (b) *Application Model*—A model that is dynamic and meant for implementation, based on selected option
- (c) *Driving Model*—A driving model serves as a prime mover to the generic and application models
- (d) *Simulation Model*—A simulation model is a tool for experimenting with a real system to determine how it will behave in relation to changes in its structure, environment or underlying assumptions

In addition, a discerning strategist could identify bio-models.

BIO-MODEL

Bio-model relates to natural life systems. History for example, if correctly interpreted, could be an excellent bio-model. But, often history is terribly distorted and hence, not advisable to follow. An identified bio-model could be used cost-effectively in its natural habitats without the need for a laboratory, especially by a government that has control over human habitats. The principle behind it is observation of a scenario unfolding in a human system without intervening, but studying closely. This will not be easily understood without examples. A simple example in bio-modelling is market research, except for the fact that there is an element of inducement in it. It has a certain artificiality when questionnaires or similar factors external to it are induced. Another example is the behavioural study of people around disputed borders in an inaccessible area for experiment. How does one understand it? The situation can be introduced in a known and accessible system, which with suitable applications can be studied closely, say for example, in a slum or a ghetto where life is equally under pressure. If the next-door neighbour is influencing the border people of a country, the situation of what the neighbour does to them can be simulated within a chosen section of the slum or ghetto, where the attractions can be introduced externally. Thereafter, it is a matter of just watching the unfolding behaviour to appreciate the situation. Such bio-models already exist in the daily life of every nation. Depending upon the result, counter measures can be tried out to test the effectiveness. Often, a situation does not have to be created to understand the behaviour of people. The reaction of the residents of New York, USA and also the behaviour of associated political, military and social systems to

the terrorist attacks of 11 September 2001 if carefully studied, will give clear indications of how a superpower commune will react. In the bio-model that reflected the shock and awe on the face of every commuter to Washington DC (who stopped their cars on the highway and paused at the sight of the damaged Pentagon everyday in silence for months after the attack), the grit and determination of the majority of American people to get at the attackers with a thud, were unmistakably apparent. The tacit affirmation of the people of America to their government, that they didn't care for the body bags in a war that they considered righteous was hidden in the symbol expressed by the national flag on every car that drove into the capital city. However, such studies of instant bio-modelling are never carried out seriously. Bio-modelling is the study to understand how an appreciated system will unfold by watching the way a natural identical system unfolds. The effort required is in making the natural system identical with the appreciated system and analysing the results. It can be natural—what really happens; or artificial, where a situation is induced deliberately, though certain ethical issues may come up in the latter.

MODELS AND COMMUNITY

Every citizen, being the member of a nation-state, a formal group, is an active or passive player in national security. The degree of contribution, whether positive or negative, has a bearing on NS_{\max} . Community sampling for national security decisions therefore, is important. The following is a sampling of community:

- (a) Policy makers at all levels
- (b) Researchers, scholars and students of strategy
- (c) Enforcers and executors
- (d) Information media personnel
- (e) Support community: the common people

The support community build-up in national security participation is an important process that may get entangled with individual, political and administrative ambitions. But it is a process very vital to NS_{\max} with many advantages. It is totally disorganised today all over the world with the majority community sectors mentioned earlier, taking individual standpoints. Perhaps many governmental organisations and the government itself may know that the common individual has an inherent urge to support the nation building process of the government. It is this urge that can be capitalised proactively and productively in community build-up. The gains are plenty. This finding evolves from the principle that the population is the greatest strength of a country in maximising its national security.

DECISION-MAKING

Decision-making is the key process at every moment in time in any kind of individual and organised human endeavour. A decision will always be

consequential. The consequences are therefore, weighed and compared at the time of professional decision-making. Decisions are to be made in different types of environments. Basically, uncertainty prevails over a decision in varying degrees. Even in a known situation, there is uncertainty for the purpose of decision-making. Hypotheses, belief systems, conditioning and various other pressures on the individual, and formal and informal group existence often overrule decision parameters including uncertainty. The uncertainty factor in such non-professional decision-making is always masked invisible, not calculated and eliminated mathematically or by any other methods of reason. Professional decision-making follows different styles. Effectiveness of decision-making lies in its timing. The span of time from the commencement to the end of the problem, whichever way its application turns out to be, is significant because it is within this span of time that the right moment for analysis, decision-making and application hide. This moment is “the critical moment” of decision for action. The critical moment is vital because any decision taken before or after it may not meet with the objective optimally, even if the decision chosen is the best alternative. The effectiveness of a decision therefore lies on two parameters: (1) the best alternative to solve the problem (the decision), (2) the moment when it is most optimal to apply (the critical moment for application). Decisions taken in the individual and group capacity can be examined by those interested, for their effectiveness with respect to the critical moment to understand this statement. It is not elaborated here. The time available for concluding a decision is the time from the identification of the problem to the critical moment of decision, and not the entire time span that may seemingly be available. Therefore, in decision-making the critical time span is what gives the decision analyst the time to test, experiment and change. Beyond the critical time, even a positive decision could become not only unavailing, but also counter-productive.

There are many tools for professional decision-making, mathematical and non-mathematical. The tool should be compatible with the problem and familiar to the decision-maker. National security decisions may have rely on the theories of operations research and statistical analysis coupled with computer models extensively. Bio-modelling could be an effective method for non-mathematical applications at macro level decisions, especially since those involved in national security decision-making are not professional decision analysts but political, bureaucratic, corporate, administrative and military executives besides individuals and leaders of various formal and informal groups in a society. Bio-modelling however, is a find of the author and has not yet developed professionally but is surprisingly being used regularly without being aware of it, in many decision-making processes historically. Bio-modelling could be developed effectively for serious decision-making. According to psychologists, decision-making involves both a conscious and unconscious thinking process. Thinking style evolves in a multi-approach mode—category thinking based on past experience and preoccupation, shared thinking through group active consensus thinking or

accepted thinking, and intuitive thinking by sheer “gut feeling” though it is much more than that. Management by intuition⁴ is an accepted norm. Clausewitz in his famous treatise *On War* has mentioned intuitive thinking as the quality of a commander as *coup d’oeil*.⁵ It is equally applicable to the chief executives and heads of states. Author Edward de Bono mentions three routes to reaching a decision: the logical process, perceptual process and the intuitive process.⁶ According to him, logical thinking alone may not be enough for decision-making; it is often substituted with perceptual and intuitive thinking. In perceptual thinking the uncertainties are formed as a map and examined carefully, also using lateral (creative) thinking. Intuitive thinking is complex and is often based on past experience and consciousness of human nature. All these processes are involved in every decision process in varying degrees. Decisions in national security matters are taken by people at the helm of affairs at various levels of hierarchy of governance in a nation-state. These decisions are very consequential with respect to the objective of NS_{max} . The outcome of the decisions may turn out to be a great success or totally disastrous at the extremes. John Fitzgerald Kennedy (1917–1963)⁷ in the middle of one of the crucial international events of the 20th century, the Cuban Missile Crisis, had remarked, *The essence of ultimate decision remains impenetrable to the observer—often indeed to the decider himself... There will always be the dark and tangled stretches in the decision making process—mysterious even to those who may be most intimately involved*.⁸ Decisions are made under various circumstances. Though all of them prevail upon uncertainty since decisions are for a consequential event of the future, the process can still be classified under trying situations that could be isolated from each other. In the management of decision-making, the simplest of all is decision-making under certainty. Here, the only flaw that the decision-maker can make (and many are capable of it) is transmuting a certainty into an uncertainty. However, decision-making under certainty is more an ideal baseline situation to explain the process since every problem has certain element of uncertainty within it. That naturally means that decision-making under uncertainty is the most common, and a variable situation because the uncertainty prevailing will keep changing as and when the process unfolds. This is where the critical moment in time shows its optimality. The state of uncertainty at the critical moment is important in the decision paradigm, because beyond this the decision process cannot prolong without major reversals. There are other decision situations too. Each has the uncertainty factor predominant in it. Decision-making under competition, risk, conflict and crisis are other different situations that could be visualised. Every situation has its determinant factor for success or failure guided by the human nature of aggressiveness with the underlying fear of insecurity. Every process of thinking is involved in each of these situations and success comes by the more balanced and prepared process sometimes supported by chance. The comfortable model for decision-making is braking down the problem to the level under uncertainty in every situation and thereafter converting the uncertainty into

certainty as far as possible within the critical moment in the time span and using the process of lateral and intuitive thinking to supplement the model.

CONCLUSION

Models support decision-making. Models could be mathematical or non-mathematical. In addition, there are bio-models. These could be availed from everyday life. Whatever may be the techniques used, modelling studies require correct definition of the problem, collection of data, formulation of the type(s) of model(s) for studies, developing the model for deriving solutions, testing the model, preparing for ongoing application of the model, making decisions based on application, implementation and continuous observation for feedback and reassessment. The entire system is a closed loop.

Notes

¹ Considering the characteristics of elements, a null effect is impossible. A change in one will have its impact on another. The nullity is from a hypothetical point of view as well as for reasons that a change that is negligible could be considered as null in mathematical application.

² This table is prepared in line with the model given by Navneet Bhushan in his paper, "Future of Warfare: Search for Military Doctrine," published in "Battle Scene in Year 2020", Defence Institute of Psychological Research, New Delhi, p. 207.

³ "Saddam Feared Iran, not US," *Hindustan Times*, New Delhi, 8 October 2004, p. 21. An example is the report from the weapons inspector that Saddam Hussein never expected the United States to attack it (Gulf War II, 2003). Throughout, Saddam felt that it would be Iran that would be dangerous to Iraq. Saddam never realised the fixation of the United States on him in its real sense. In fact, he was said to be on his way to improve relations with the United States. What happened in Iraq was not deception, but a shift from reality from the perspective of Saddam Hussein.

⁴ Prabhakaran Paleri, "Management by Institution," *Annual Brochure of the Indian Coast Guard*, Eastern Region, Chennai, 1991.

⁵ Michael Howard and Peter Paret (eds), *Carl Von Clausewitz On War*, Princeton University Press, Princeton, 1984, p. 102. Carl Von Clausewitz speaks about *Coup d'oeil* as the intellect that even in the darkest hour retains some glimmerings of the inner light, which leads to truth. It is one of the qualities required in decision-making to meet the challenges of uncertainty. *Coup d'oeil* deals with the "inner eye" which certainly is applicable not only in war during the days of Clausewitz, but very much in the modern age when every activity of humans undergoes scenarios similar to those of wars.

⁶ Edward de Bono, *Tactics*, Fontana/Collins, London, 1987, p. 168.

⁷ The 35th president of the United States who faced a number of international crises. A charismatic personality, he was assassinated while riding in a motorcade in Dallas, USA. The assassination was mired in controversies.

⁸ Graham T. Allison, *Essence of Decision: Explaining the Cuban Missile Crisis*, HarperCollins Publishers, Harvard, 1971, p. i.

24

Global Security—Chasing a Shadow in Darkness?

“Vasudeiva Kutumbakam”—the whole world is a family.

Is the world a family? The *Sanskrit* quote from the ancient Hindu scriptures proclaims so. Perhaps the strength of the original cultural traditions of the ancient Indian subcontinent as contained in the way of life and belief systems of generations, is portrayed in such scriptures. Atal Bihari Vajpayee, the prime minister of India ended his speech at the much-publicised UN Millennium Summit on 8 September 2000 with an invocation in *Sanskrit* from the ancient Indian scripts:¹

*“Sarve bhavanthu sukhinah;
Sarve santu niramayah;
Sarve bhadrani pasyanthu;
Ma kaschit dukha bhavet”*

“May all live happily; may all enjoy good health; may all see auspiciousness; may none experience distress; and may peace prevail everywhere.”

It was reported that leaders of 152 countries heard him in rapt attention.² Four years later, his successor, Manmohan Singh repeated India’s sustained belief in *vasudeiva kutumbakam* in his keynote speech in a leadership initiative. He stressed the need for cultural co-existence of the people of the world even if there were clashes between nations.³ It could be argued that the principle of global security, in its essence, is hidden in the statement projected by the two leaders with differing political ideologies. But does a closer look show that these words were merely projections of fantasy of ancient India? Were they part of wishful thinking in the face of undesirable realities? The idea was projected at a time when the family was an example of unity. Today, even in India where the idea was strong, families cease to be symbols of closeness in spite of their consanguine beginnings; they are riddled with conflicts based on honour and economics. Families are disintegrating and have problems of unequal cultural extensions. Molecular families have become a reality and soon, as is becoming more apparent, human lives could even become singular. The world is witnessing a new group of people—the asexual humans—never heard of before seriously. They are strictly speaking, individuals who like to

go it alone. In the time of the quoted scriptures, the world was visualised in a constrained space. Surroundings and their characteristics, guided by narrow vision and comprehension of the period, limit the perception of life. The example they could find would have been the most formative pattern of a group at that time—the family that was joint for reasons of security and personal needs. So, the idea would not have been scripted aimed at the entire world, but the perceived limited world or the community around them. They would also not have felt that the world should look like a paradise. Here, it is important to understand that the aim of national security or global security is neither creating a paradise on earth nor converting the world into a paradise. Fantasy projections and wishful thinking provide the base for building spiritual security as explained in this book—the filler that balances humans in their quest for apparent security and beyond. Even apparent security—the basic essential that the government can provide fall very short of the actual requirement. The gap between available apparent security and individually perceived security is filled by the essentials of spiritual security, in which individuals withdraw to themselves. In such statements, pragmatism if any, may yield to the strong forces of human conditioning of millions of years and will remain a wishful fantasy. Fear is the key for survival and also the effervescent medium of negativism. If global security has to become a reality, then it has to come from the inherent fear of humans in their own existence. It is a bargain based on the probability of a blend between the insecurity of a primate in the face of a threat and the wisdom that evolution has etched in its psyche.

The idea in the scriptures however, is not that of misanthropic falsifiers. There is wisdom in such words. When wise people gesticulate with concise words, the ignited minds should get ready for their usage and application. At least the idea of such scriptures should be viewed seriously for their practicality within limitations of the period and intellect. Such scriptures establish the possibility of global security when better sense prevails. Making a case for global security or at least acceptance of national security, as a worldwide concept for the well-being of people has to find roots somewhere, even if it is in a fantasy statement. The quoted statement provides a kind of refuge for it. That is not all; there are many supporting thought processes that are distinctly vivid and outside the barriers of fantasy. The very existence of the United Nations even when doubts are cast on its power to influence the nations in global decision-making; the manner in which the turmoil within and against it is managed under conflicting situations by the international community; the statements of the secretaries general and their acceptance by majority of the nations; the principles of collective security and global development; and attempts to review its structure and governing rules, are all indicators of the dynamic thought processes in the direction of global security. That is not all; the very process of globalisation and the slow and steady loss of power of national governments in key areas are also symptoms of developments that may set the appropriate trend. There could be more arguments both for and against it. The world was not as it is today, when the scriptures that proclaim its unified outlook

were written. It was small and limited to the knowledge that humans had about it. The world was not crowded; population density was low. But did the people feel safer and more at ease in the past than they feel today? It is not known; it has to be deduced under controlled bias. The world of thousands of years back in history cannot be compared with the advanced world of the day. A bio-model deduced from Colin Wilson's *Criminal History of Mankind*⁶ indicates that the world was pretty bad in the past, and progressed or rather became civilised in the course of time. The world is better today than it was yesterday. The question is, "is the world chasing a chimera inadvertently even today, that was first felt in the minds of a few wise people thousands of years ago?" One has to ask the secretary general of the United Nations for an answer with a feeling. Undoubtedly, any feeling for considering humanity as a unified system for governance for the well-being of all has to come from the commitment to global security. Global security is not an overnight stopover. It is a process. It took thousands of years from the day the scriptures wrote about the whole world being seen as a family, before the first international organisation, the League of Nations, was formed. But the idea was born and became etched permanently in the psyche of new generations. Though the League of Nations gave up the ghost in the natural way, the idea persisted and took shape in the form of the United Nations. This does not mean that one has to believe in the theory of reincarnation or in recycling a smoker's pipe into a plumber's duct. In fact, the League of Nations was still there breathing its last when the UN was born. There are serious asymmetries in both the organisations. The symmetry lies in their basic dictum, based on the demand from the world community to cuddle and huddle together. That was how the ancient primates kept the fire, the most valuable of their resources, burning. From the behaviour patterns of the humans with respect to their needs, a close observer may see signs of global security becoming a gradual possibility. There is a caveat that the signs could also be deceptive. Global security has never figured in any nation's agenda. It may not come up for a considerable period of time, though there could be enhanced global cooperation on many issues. At the moment it is restricted to the oft-repeated terms of globalisation, de-regularisation, liberalisation, regional and global cooperation, collective security, joint defence, etc. The existence of the United Nations as the collective conscience keeper of the world is supported by the fact that there has not been a world war since the last one. But the term "United Nations" is an oxymoron. To expect nations to unite for the sole purpose of serving the common good of humankind is to chase a chimera. Nations cannot jettison their own issues—boundaries and sovereignties, egos and ambitions, ideologies and convictions, belief and meaning systems, freedom for self-expression, etc. People have divided ideologies. The United Nations could get isolated in a world divided by conflicts, choices, power games, etc. Nationalism is another force, though arguably dwindling. If the UN raises a great deal of cynicism, it is because nations are unable to rise above their national and other dividing interests. Global security therefore, has to be wrought within these dividing forces for a long time until the

national interests merge with global interests. That is when global security principles will emerge. The identity of the UN provides it an attitude to strive for global security. Its main task will be to control the dividing forces that create conflict and strife among people. Gradually and slowly, the world is becoming aware that there are threats to global security that can surpass all other efforts to contain them within a nation's boundary: natural disasters, ecological degradation, pandemics, ethnic divide, transnational crimes, terrorism, militant activism, etc. In addition, pressures of economics lug people away from nationalism. They have now experienced the economics of globalism, though there are many who are skeptical about it. Still it is not the time to predict whether globalism will replace nationalism in the better interests of humankind. Among the dividing forces, religious fanaticism and ethnic separatism are strong and deep-rooted emotions in human psyche that may frustrate the efforts of globalism from taking root for centuries to come.

Bio-modelling the concept of national security through the changing family concepts, existing world standards of nation-states and behaviours of other organisations including family businesses shows the trend towards disintegration. The number of nation-states is increasing, families are breaking down and family businesses are splitting apart. These are human systems. The average overall dimensions of human systems such as families, corporate houses, etc., are shrinking and their numbers are increasing. The tendency for nation-states is not to enlarge by integration or merger, but to disintegrate into smaller units. Keeping nations together and preventing them from breaking away has become a major task for governments. There seems to be a certain identity of mind with respect to international organisations, elimination of world wars, international support in calamities, international agreements, globalisation of economy, distrust in the intentions of the superstate, etc. Governmental powers are weakening under such pressures. While disintegration of human systems means that the world will never be united, integration beyond nation-states is an indicator that there could be a counter flow towards national security. What requires to be seen is the resultant trend but the time is not yet ripe for analysing this. Such trends are requirement-based and not exactly unity of acculturation towards a common share in life's capabilities. Added to this is the hierarchical order of nations in their economic behaviour. Even if the entire world unites, the tussle for superpower status and subsequently its dominance to keep the world at its feet for its own survival will continue. Though the concept of global security under these circumstances is highly improbable, chasing a chimera keeps the human process alive and active. Perhaps, Kofi Annan, the former secretary general of the United Nations, being what he was and aware of his obligations to the world, understood the system by necessity, when he called for the Millennium Summit. Leading personalities belonging to 12 prominent world religions gathered at the United Nations for the first time between 30 August and 2 September 2000, and discussed global peace and security. Their aim was to sign an ambitious document titled "Commitment to Global Peace," which emphatically stated that, "all religions were equal" and so were men

and women. This statement unequivocally condemned violence committed in the name of religion. Whether it had an impact on the conscience of the world or not was another matter. The issues discussed in the summit were not confined to religion alone; it covered issues related to conflict transformation, forgiveness and reconciliation, global challenges and local initiatives, and tolerance and poverty. Close observation of the religions of the world shows that they have various aspects: symbols, practices, rituals, rules, values and origin at a particular time of evolution of humankind. While the first and foremost religion in the Christian era of the world united a group of people with an underlying organised common faith 21 centuries ago, the last of the major religions, Sikhism originated in India in 500 AD.⁵ There were no major religions since then. It was only expansionism of the existing religions with their classic tenets in flux through stormy periods from age to age, through fragmented ideologies and divisions within by alternated faith. Every religion has turbulence from within. While religion loves diversity according to certain believers and leaders, it is the commonality of the religion that is important when one has to see the security aims through religion. The commonalties are the perception of god and values associated with the belief systems. Where there is no formal religion, the culture stands in. All religions preach the same is a starting point; you understand one, you understand all is another argument. Externally religions are clothed differently. Under such arguments, the oft-repeated advocacy of wise people in learning about other religions means understanding the reality that all religions preach the same—concern for humans. It is obvious by looking at the reasons and ways religions were formed in the world, that they all preach the same under different packages, even for those who do not commit to the existence of god. Travel agents function in the same way. They do not have destinations exclusive to each. The period of formation of religions was disorderly and turbulent for security and evolving human needs. Under such conditions there was the need for people to slip more into the intense spiritual security offered by religions. The purpose of the UN is to provide global collective (apparent) security by international governance, as defined in its Charter. Seeking the support of agents of spirituality (spiritual security related to religion) was a deviation. The impact of the Summit is yet to be seen in a world that continues to be riddled with problems. As subsequent events proved, positive results were never seen. The terrorist strike on the US a year later was evidence of this. It was direct power projection of the ante-force. Another issue about religion and global security is that it is not religion alone that keeps the world diversely disunited. There are other causes too; some of them are too intricate to dissect and examine. Perhaps, the world under fear has demonised religious beliefs so aggressively that more intricate problems to global security are able to manoeuvre freely and unnoticed. The world needs a vision to see the problems beyond the hype and hoopla of imagined abnormalities in the matters of religion. In the midst of the undecided world and the flowing anarchy, the United Nations stands alone as a sanguine metaphor of hope for the world community. A High-level Panel⁶ was constituted by the secretary general to assess the threats to

international peace and security since it was felt that there were deep divisions among member states on the nature of threats faced by the world. It called for appropriate use of forces to make the organisation more effective in handling them.⁷ The Panel, headed by Anand Panyarachun, former prime minister of Thailand, was also tasked to evaluate what the existing polices and institutions had done in addressing those threats, and to submit recommendations to make the UN more effective so that it could provide collective security for all in the 21st century. In the words of Kofi Annan, the report titled, *A More Secure World: Our Shared Responsibility* called for a broader, more comprehensive concept of collective security. The report suggested development as the indispensable foundation of collective security in the modern world. It mentioned about biological security and expressed concern over it. Basically, it meant health security and the need for prevention and control of pandemics like HIV and AIDS. The emerging threats and controlling them with the use of existing tools—mediation and sanctions—were examined, and criteria for use of force were recommended. The panel noted that the United Nations had failed in handling issues of health and terrorism. In the absence of an articulated strategy on terrorism, it was handicapped in stating a counter terrorism strategy. Another area of concern was the absence of a division for the nuclear proliferation regime. The Panel warned about the risk of proliferation in future. The recommendations included changes in the major organs of the UN as a vision for the 21st century and for revamping the human rights commission. Though the recommendations were much-appreciated, it has to be seen how the report affects the functioning of the UN towards collective security in the world certain to be uncertain.

It is often said that the world after many centuries of war and sufferings is a close-knit community—a global village. Those who argue its existence often quote that nationalism is on its way out and people want to be globally united in order to overcome the miseries of life. They even argue that in the past the world was torn apart by nationalistic leaders. Strong sentiments of nationalism lead to self-destructive thoughts and power maximisation attitudes among leaders and nations. The 21st century began with a war in Iraq (2003), which the invading United States and its allies preferred to call a pre-emptive war. The initial phase of the war ended with the humiliation and incarceration of the president of Iraq, Saddam Hussein. His family members were identified, trailed and assassinated as war casualties. The cost of occupation, according to reports, was US\$228 million per day to the US (2004).⁸ In the second phase, the world witnessed a democratic election in the still bleeding Iraq. Saddam Hussein was sentenced to death by hanging, by a court for war crimes. The sentence was executed amidst differing views that died a natural death soon thereafter. But the Republican United States failed to validate the attack, probably paving way for a change in governance. Iraqis stood divided as before, this time within a democracy and its forces, both internal and external. The attack was a relief for many Iraqis and victory for the United States on its power projection, while a blow to the United Nations and those who

opposed it. The idea of global security was temporarily snatched away by the United States leaving Iraq in shambles. For the US, the victorious, the turn towards the final decline and fall has perhaps, just begun.

Nationalism is integral to patriotism that often takes it to an ugly hue. Samuel Johnson (1709–1784), the British writer and lexicographer had said, “patriotism is the last refuge of scoundrels.”⁹ How valid is this 18th century statement in today’s contest? Certainly patriots are not scoundrels. Patriotism is a detour for a scoundrel stupid enough to take it. Those who argue for globalism advise that people should not identify themselves with a certain country, culture or religion. It is simple to state, but humans are just not made that way. The Declaration of Independence of the United States, established more than three centuries ago (4 July 1776) states, *We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable rights, that among these are life, liberty and the pursuit of happiness.*¹⁰ Well, these are ambiguously abstract statements, though in the most venerable way, in the most honourable document that a nation possesses—its Constitution. Pursuit of happiness within the combined needs of existence is chasing a condition that is very abstract. Why should one drag the Creator into a constitution? Is it to blame for the failures or share responsibility of the burden of governance? There are authors who say the world is torn apart from many points of view based on nationalism, religion, culture, ethnicity, selfishness, envy, anger and pride. The global village advocates of the ancient days recommend the whole world to be a family. It is a dream impossible. In reality, one dreams about something that one is not able to gather. The proof is embedded in this statement. If global security is a dream, then it does not exist. To fulfil a dream and to make it a reality is another subject. It is based on demand. There is a clear absence of demand for global security in the world of nations. The concept of global security remains engorged more or less on the same principles of national security, perhaps in a collective sense. The divisive forces that appear on scene are not induced, but imbibed in the human system, which is difficult to contain at the global level but could be managed within a nation-state by rule of law and effective governance. This means the importance of government. A global governing system under unified governance cannot be visualised at least at this stage of human development. The concept of global security will have to evolve in course of time and its definition as well as functions will remain with respect to the stages of human development in spite of the existing pandemonium in the name of belief systems. Currently and in the near visible future, the concept of global security will remain within the economic and market globalisation and international agreements to combat natural threats and cooperate for common causes, wherever identified. The original concept identified in the book, that it is the king (the government) who is accountable for national security will take an uncomfortable beating. Situations will change. Global security and national security will move along an inverse sliding scale. The more there is of the global, the less will be the national. National governments will lose power. The government has two choices—allow the powers to erode without losing

control, or find ways of retaining control even at the advent of global security and release it in a regulated manner. That is one of the reasons the superstate is in a dilemma in handling global security and prefers to take on the subject without the United Nations. The superstate also has the fixation of world domination for its survival. What the world will ultimately experience will be the resultant interplay of such conflicting governances. The role of the superstate in global security depends entirely on its choice. The superstate will influence the UN. Its policy has been domination. Soon, this belief system could become a vintage idea. Nation-states are averse to direct domination. The concept of global security, if it follows the pattern of national security as envisaged in this book, will have its constituent elements. It will be interesting to note that these elements may not undergo any serious change except that they will become ideologically “internalised”. The transformation can be visualised hypothetically. The element of military security in a global scenario will be internalised. The world military forces could be deployed to contain a rogue militancy or insurgency equivalent in a global set up. Agents of militancy will be ill-equipped from the point of view of weapon stockpiles, because serious regulations and enforcement will affect weapons being trafficked internally. This condition will be in the forefront of denial of global security principles, because in a world where arms sale is perhaps the largest business, such a situation is not likely to be accepted. The arms business thrives on war, militancy, internal feud and crimes; any control on it is not likely to succeed except under the concept of global security. Economic security has a serious stake in promoting global security as globalisation slowly erodes governmental control in states’ economic affairs. Environmental security will undergo major breakthrough, since nations will be responsible for it under a global regime. International control over climate change and global environmental aspects will be strengthened further. Resource and energy security will be a matter of sharing under global partnership. The gap between the haves and the have-nots will increase in all these gambits. Elements of health security, disaster security and food security will find better ways of management and more serious global partnership. Demographic security and ethnic security may find issues that will not be acceptable for a global regime raising objections from many states. It is even seen in the formation of a union of nations where membership is denied on demographic and ethnic basis, in some cases externally attributed to corruption or religious bias, as in the case of Romania and Bulgaria in 2004.¹¹ These elements therefore, do not support the global concept. Border security will remain as the way it is; internal to a state and under the current scenario where large number of nations have border disputes with their neighbours. The way the wind will blow cannot be determined without serious research and modelling. Geostrategic security will merge with internal cooperation and understanding as in the case of union of states. The remaining three elements—information, cyber and genome—are anyway international and may not undergo major transformation except that their interaction will be worldwide. These are strictly hypothetical

projections for understanding the interplay of forces at the elemental level in global transformation. Some favour it; some do not.

CONCLUSION

The world could never be expected to become a unified conglomeration of nation-states. There are more chances for disintegration than unification. But, nation-states may require an umbrella regime to huddle against common problems. There is already a redeeming parasol in the charter of the UN. The UN, unlike the League of Nations, is not in a hurry to give up. Another constructive sign is in the quality of leadership. Today's leaders are more than leaders and behave differently, which may give vent to a feeling among observers that those in the past were giants. The leaders today are better at governance, which is a more advanced stage of leadership. They are not individually identified beyond a certain limit, unlike those in the past. In a situational approach, leadership depends upon parameters that govern and modify each interaction. Positive examples of such leaderships are reflected in the decisions of George W. Bush, president of the United States, in taking on the terrorist power projection of 11 September 2001; that of Vladimir V. Putin, president of Russia, in exercising government control over energy security when national governments are losing it; and of Kofi Annan, the secretary general of the United Nations in keeping the world at the doorstep of the UN, in spite of the superstate's arrogance in the post-terrorist bang lead by the United States in Iraq. They may not be remembered like an Eisenhower,¹² a Khrushchev¹³ or a Dag Hammarskjöld¹⁴ who could project their charisma and situational leniency compared to the present-day world to achieve epitaphs in larger fonts in history. The leaders of the current-day world have to deal with situations in the glaring lights and booming mikes of the people of all sorts, where charisma alone cannot resolve issues. Their lives and deeds are much more transparent and are examined threadbare under today's information and knowledge world where individual privacy is at a premium. The demand today on a leader is more for executive acuity than charismatic traits. Today's leaders handle much more complicated issues with more discernment appropriate to an empowered generation. Tomorrow's leaders are expected to play further on the edge. Under the situation approach, is expected that futuristic leadership will be much more advanced than it is today. The need to understand the concept of global security originates from the fact that the world is moving ahead in a better way compared to the past. The concept of global security flows along with it.

Notes

¹ Chidanand Rajghatta, "PM Takes Pak Apart as World Leaders Listen," *The Indian Express*, Mumbai, 9 September 2000, p. 1.

² Ibid.

³ Saroj Nagi and Nandini R. Iyer, “Nations Clash, Cultures Coexist,” *Hindustan Times*, New Delhi, 6 November 2004, p. 1. The summit was held at New Delhi on 5–6 November 2004.

⁴ Collin Wilson, *Criminal History of Mankind*, Granada, London, 1984. According to the author, the public conscience in the human system of yesterday started waking up largely as a result of the works of authors like Charles Dickens and Victor Hugo. They touched people’s imagination. Till then, death, mayhem, sexual abuse, incest or any kind of amoral life (as it seems to be today) was either acceptable to society or not cared for. Life revolved around oneself within a group in a social system. This is in spite of the formation of nation-states and the concept of nationalism, which was meant for security of a group. Dickens and Hugo made their readers put themselves in the place of the unfortunates in society. It could not be a change in personalities, but an inducement of insecurity that the readers experienced by identifying themselves with the unfortunates. But, it brought social changes that continue today in different aspects. There is a caveat here. There were societies in the world from the very ancient times who believed in ethical ways of life and value systems of good social order. The example here is only to show that in the nation-state principle, collective empathy did not have a prominent place since people were engrossed in their own existence. It is still carried forward. Social empathy however, forms a background for understanding oneself in the position of the miserable victim and thereby prevents a harm being committed in the normal case.

⁵ In this work what is considered as a religion is the organisation of human systems under a perceiver in the name of a god or no god principle that started before Christianity with Zoroastrianism (7th century BC), Jainism (7th–5th century BC), and Buddhism (6th century BC). Christianity was followed by Islam (7th century AD) and Sikhism (15th century AD) (Dates from *Encyclopaedia Britannica, Ultimate Reference Suite*, CD-ROM, 2004). The rest of the people belong to cultural societies as unconverted natural (original) people according to this work where culture substitutes for religion with identified gods or no gods, the focus of perception in spirituality.

⁶ High-level Panel on Threats, Challenges and Change.

⁷ The United Nations, General Assembly, Fifty-ninth Session, Agenda item 55, Note from the Secretary General, A/59/565, 2 December 2004.

⁸ “Stingy Uncle Sam?” *The Times of India*, New Delhi, 31 December 2004, p. 1.

⁹ Akhil Chandra, “Look Far Beyond the Nation State,” *The Times of India*, Mumbai, 3 January 2005, p. 9.

¹⁰ Ibid.

¹¹ Radu Marinas, “Romania Can Join EU in 2007 if Reforms Go On,” *The Asian Age*, New Delhi, 22 June 2004, p. 7. The report states that Romania can join the European Union in 2007 provided corruption is stopped and judicial reforms are in place. The rule of law can be undermined by corruption. Bulgaria and Romania missed the first eastward expansion in May 2004. Both are now members of the European Union.

¹² Dwight D. Eisenhower (1890–1969). The 34th president of the United States of America. Twice elected.

¹³ Nikita S. Khrushchev (1894–1971). First secretary of the Communist Party of the Soviet Union and premier of the Soviet Union whose policy of de-Stalinisation had widespread repercussions throughout the communist world. He has been largely regarded as a historical bridge from Stalin to Gorbachev of the Soviet era.

¹⁴ Dag Hammarskjöld (1905–1961), Swedish economist and statesman who was very popular as the secretary general of the United Nations from 1953 to 1961. He died in an air crash on 18 September 1961, which some analysts consider mysterious. He was awarded the Nobel peace prize posthumously.

25

Research in National Security

Save humans—from evils born (with them).

Well-being of the citizens of a nation, though more or less a guarantee clause in the constitutional governance of nations, always remained beyond the practiced domain of governments. Success in governance is limited by inherent incompetence, multiplied by the vicissitudes of the laws of life including chance. None of the philosophies including the political ideologies of socio-political revolution could guarantee total apparent well-being to people. It can be achieved and that too at a faster pace, by simple governance under the principles of national security as defined in this book. It is a pragmatic objective. The world has never seriously experimented with the process of NS_{max} with a positive and pragmatic intent. It is obvious from the trauma, agony and fear that prevailed in the past and continue to linger on. The whine of agony that emanates from various corners of the world is audible to those who listen consciously. The people of the world are yet to get the care they rightfully deserve, from those who govern them. It can be provided to them in an uncertain world by sheer governance. Governments are meant for that. There is no hurry, though. The concept itself is in its opening stage. The world was never in haste. That is good news. A lot of research is needed to clarify the principles and elements of national security, and the approach towards its maximisation. This chapter examines these points and opens ways for willing scholars and students to explore and research further on the concept. Research is for knowledge accumulation, retention and implementation. The subject demands further examination by scholars through systematic and continuous research. This could run concurrently with its practice and be shared by all through a dedicated governmental, or a differently managed system (corporate or institutional).

TOPICS FOR RESEARCH

The objective of research is to enhance the practicality and viability of the concept in national governance. The findings of research should be value-based addition towards the efforts already on in enhancing national security. The identified areas are as follows.

The Concept of National Security

- National security is the apparent well-being of people. Since the perception of well-being varies from people to people, a standard achievable unit of apparent security for the purpose of governance is to be identified.
- The NSI is the outcome of national security assessment that also provides for a comparative analysis between nations at a particular time. Is the idea of NSI feasible? If so, what are the parameters and how does one measure them?
- Introduction of the idea of NSI will bring serious changes in governance. Public attention will become more focused on the subject because of clarity. The public, equipped with correct information will be able to place their demands on the government and also analyse the issues of governance. People participation in governance will be more associative and assertive than critical. Generally, the opinion of the people sways under propaganda and the grapevine and belief systems thus control responses from the public. The probable changes in governance subsequent to introduction of NSI will be based on knowledge empowerment to people. Introduction of NSI, after a serious research and examination for validation and acceptance, will give the much-needed fillip to national security governance and management.
- While in search of the idea of well-being, researchers may come across different terminologies like happiness, comfort, development, technology providers, etc., that have a serious bearing towards their perception of national security. These are to be examined and separated from the main topic of well-being to avoid misconstrued judgments. By doing so, the research will lead to associated fields of human concern.
- Changes are anticipated in the concept of national security in course of time. The core definition however, will remain unchanged. Predicting those changes and their impact on the concept thus becomes another area of significance.
- There will be a requirement to audit national security. The methods of audit are internal as well as external to the government for the purpose of governance. Audits external to the state by recognised international bodies for establishing the NSI of the state will be another requirement.
- The ideas of national security and spiritual security are mutually exclusive. However, it has extended interfaces at various levels and situations. The interplay of spiritual security with national security as a continuum will provide much scope for research, though it will face serious criticisms from established sources.

Threat Perception and Analysis

- Predicting threat perception under the threat matrix cube and intercepting threat to various elements of national security by pre-emption or in the

post active stage in the fly-box model will be an independent and extensive area of study.

- Threat perception studies will also include procedures for detailed research into the concept of the ante-force. The research will include the impact of ante-force on national security and handling such forces effectively to advantage in governance.

The Concept of Terrain and Terrain Specificity

- Six terrains are identified—land, ocean, air space, outer space, cyber and genome (genomic space) with a pointer on mindscape. The probability of the last is temporarily ruled out in this book for reasons that, (1) every effort to control the human mind at will and attempts to use the psychic powers presumably existing in the domain, such as telepathy, psycho kinesis, etc., had failed since long (Cold War and before) in spite of winding, costly and confusing experiments, (2) the human mind is the primary domain for acceptance of the national security concept—the well-being, actually measured—and the basic domain for finding ways out of non-existent existence by spiritual security, and (3) the domain has its own free-thinking powers that may react to any attempt to manoeuvre over it, unlike other terrains. The mindscape hypothetically, can never end up as a terrain for national security governance and management.¹ But the ever-paranoid world is still hopeful of influencing it as can be seen from psychological operations and attempts to develop psychotronic techniques, etc. Here the research proposed is to find the influence and interconnectivity of terrains in national security with respect to the elements of national security. It is a vast area. Research on the hypothesis about the limitations of the human mind as a terrain will be a welcome idea. That may show directions of approach to many countries that are engaged in mind control research activities primarily aimed at military and geostrategic security.

Elements of National Security

- An element of national security is a single paramount entity related to human well-being with an independent profile as a contributor to its maximisation, having strong compatibility with other identified elements in mutual interaction. In this case, the characteristics of an element that makes it distinct from other aspects of national security, such as conditions, threats, weapons, technology, education, etc., could still be researched for clarity so that non-elements are not treated as elements in national security management. This differentiation, between elements and non-elements is vital in the application of national security principles.
- Every aspect of an identified element of national security needs thorough investigation by research, to understand them better in their evolution

and status with respect to time. This will also include studying its transformation by evolution and time when it is likely to cease to be an element in the future. There are also chances that in the future, an element may split into more elements or merge with an existing element. The probability of such changes could be verified through research.

- Each element will have a centre of gravity, the point where it cannot afford to take a hit. Does the centre of gravity of an element of national security change with respect to each nation, as well as to time and the situation prevailing in a nation? There is also the collective centre of gravity of elements. The same questions arise here too. Thirdly, “will there be a principal element at any particular time for a nation that needs maximum attention?” If so, how is it identified? All these bring together the importance of national security assessment on a minute-to-minute evaluation process. There is no other subject in a nation’s governance that calls for 24×365 hrs a year scrutiny and preparedness. How many governments are aware of it? Banks, stock exchanges, war rooms and even computers can blink a second or much more, but the national security centre strategically has to develop a fish-eye view sans eyelids.
- The elements are interconnected. They are not mutually exclusive. The interaction of elements and the effect of an incremental change in one on the other or a combination of elements is a matter of serious study. It is the net impact that will ultimately reflect in NS_{\max} . The study may lead to identifying the corresponding interactive co-efficients between elements.

Military Activities and National Security

- Since the entire subject of national security is considered to be related to military matters even today, exclusive research will be required to identify the true nature of military security with respect to national security. This may raise many questions.
 - Is the world fixated with war besides being paranoid about it? War is expected to remain part of human life. The aspects of war may change, that too very slowly. War may have formal sanctions from the international community and may involve professionals other than the citizens of a country.
 - Is the military the ultimate arbiter of peace? If war is an instrument of national policy, then it can influence order through disorder (war) or projection of impending disorder (deterrence). In the original definition, peace is absence of war. War is present even in the definition of peace. It could be accepted only by accepting war as a reality in abetting peace.
 - Does war support, damage or complement economy? It is seen that it has an impact on economy. War could be waged to support as well as balance an economy but the results cannot be guaranteed.

- Is military might imperative for a nation? It depends on whether the objective is power projection from the military point of view or annexation of territories. A nation can project its power in any of the elements of national security or its terrain accessibility. Except economic power, no other elemental projections have been tried out. The military will be a part of economic power projection because increase in economic security could improve military might too, whereas in most of the cases, an increase in military power may damage economic security.
- What is the optimum military power status for a nation? It could be calculated for each nation, provided the policy is not tit-for-tat but deep-rooted in its strategy to achieve optimum bargaining power.
- Are there nations that may not need a military? Many nations could achieve strategic advantage as well as a higher NSI without even having a military. This could be achieved by non-alliance, strategic alliance or by induced geostrategic demand, which is a mix of both. It is a hypothesis for research.
- Can the military be outsourced? Mercenaries are outsourced inventory. In a way, the UN is the largest and permanent outsourcer of military personnel. Here, there could be a clashing concept: "Can geo-strategy be outsourced?" One hypothesis is that such outsourcing will be costly. The country will lose control by the snowballing effect and the uncertainties will swell the snowball.
- Who will fight the future wars as a soldier—children, men and women? Here, the question on child soldiers is, "why do some prefer children in uniform?" It is a serious subject for research since the common perception that adults are not available for conscription seems to be incorrect.
- How does one keep the military gainfully employed during situations other-than-war? The cost of using the military for non-military operations could be very high. If not cost-effectively employed, the military is best downsized. Otherwise, which unfortunately is not possible in countries where the governments do not have sufficient control over the military armed forces, the government has to find cost-effective and gainful employment for its military. This will be country specific. Another issue that may come up in such employment is whether all the military forces are equally involved in a nation's military security or are there some employed in underrated duties. Can involvement of a military in non-military operations blunt its cutting-edge? All these demand serious research.
- How is it possible to prevent military interference in national governance? The lesser the influence, the higher should be the position of the country in the informal hierarchy of nations. It is for the government to see and constitutionally engage the military, and not

the reverse. The military is the support provider for a government to govern national security more appropriately towards NS_{max} .

- Arriving at the EDS (economic military spending) is a challenging task. It is the optimum amount that a nation can afford to spend on military and could even be less than the actual spending, if carefully calculated. Detailed research on the subject is necessary.

Influencing Factors—Conditional Situations

- The influencing factors of national security will need serious study. Such conditional situations and threats will include:
 - Terrorism and militant activism
 - Insurgency
 - Narcotics
 - Arms trafficking
 - Other transnational crimes
 - Politicking
 - WMD—influence and proliferation
 - The superstate's involvement in the internal affairs of others
- Other areas that are not threats, but can influence national security are to be seen from their correct perspective. There will be questions such as the following.
 - Does education supplement national security efforts? If so, how? Ideally, education means knowledge accumulation. But it could also mean accumulation of distorted information and thereby knowledge corruption (dark knowledge). Religion, history and politics carry considerable dark knowledge in the education system. The core issue here is providing correct information to those who have the right to information—that means to every citizen of a country.
 - What is the influence of religious beliefs and cult behaviour in national security efforts? According to the findings of this book, religion is considered an essential element of spiritual security that keeps human societies in balance, but is outside the purview of national security studies. The complementary functions of religion will be of great interest in the studies.

Government and Governance

- A perfect system of government and governance is yet to be devised. Issues of governance may seem widely complicated depending upon the angle of perception. New and modern methodologies and systems of governance are very much in human capability. This could work out ambitiously in national security management. The areas that involve studies in this topic could be vast and will pose many questions.

- Who governs national security? Is it the government? Will it change? This book identifies the “king”—the government—as the national security provider. In a democracy, the government also means the people. The constitution provides the people with the power to govern their state of affairs in the way they want. Here is where the catch lies. The constitutions need not say how people should be governed; hence the saying that the people get the government they deserve. From the objective of national security, there is only one way to govern—by maximising national security. The practicality of such a statement needs to be evaluated seriously and reviewed periodically.
- If the government is the provider of national security, how should it govern? The answer to this question depends on the constitution and the will and expertise of the government. It needs to be tested for practicality.
- If the government is of the people, then it calls for people participation in NS_{\max} because they too form part of the government. The system of people participation in governance (through their representatives and public information rights) has been ancient and has many historic bio-models. Is the system practiced today in peoples’ rule similar to those of the past? Is the current democracy an act of balancing against opposite views? Is there a way in which people can participate beyond the capacity of their own elected representatives? Do the people really care about the government in meeting their individual needs? There are many such questions.
- Is democracy the best form of government to achieve NS_{\max} ? If so, how? Where does it stand now? Is democracy in its early stage or has it advanced further? There are many nations that do not follow democratic principles but at the same time have alliances with democratic governments who recognise them seriously. To quote an educated and strategically inclined friend from an affluent Arab nation, “A country should follow a governmental system that it finds suitable (1994).” It seems to be a cautious statement. It could be followed by the maxim that the best governmental system for a country is the one that primarily focuses on NS_{\max} . It could be any system. This is a hypothesis that could be tested. It is also possible that a new system or a system in a transformed aspect, may find a better choice in the future. There is no evidence that democracy is the ultimate choice for national security maximisation. Governmental system is a serious topic and very apposite for research.
- What are the chances of new forms of governmental systems coming up? Besides the trends getting reversed, new systems may evolve that may include even global governance or protectorate governance.
- What are the constraints that a particular form of government faces in maximising national security? This will be an excellent area of study.

- Is national security independent of the form of government? Externally it appears to be so, but this needs to be examined seriously. National security may depend more on the style of governance than the form of government. This has to be ascertained by research.
- When does a superpower qualify to be a superstate by governance? Is democracy a basic necessity to become a superpower and then a superstate? What happens when a non-democratic nation becomes the superpower? Can it also become the superstate?
- There could be many factors beyond the control of a national security governance mechanism. This will be a different area of study—to identify the limiting factors of governance in NS_{max} .
- Similarly, there are topics related to national security that are well within the capabilities of management and those extending beyond. The study could aim at enhancing the capabilities of governance towards handling issues that include:
 - War
 - Migration
 - Crime
 - Religious fanaticism
 - Suicide
 - Cult behaviour
 - Female foeticide
 - Ethnic divisions and differences
 - Gender bias
 - Weather and climate
 - Social security
 - Education
 - Employment
 - Corruption
 - Disasters
 - Destructive inventions
 - Income gap
 - Governing ante-force
- Governments are losing control in the affairs of the state and its people. This can be examined specifically with respect to situations and conditions such as:
 - Globalisation
 - Intervention of international organisations
 - Intervention of non-governmental organisations
 - Political obstructions
 - Religious organisations
 - Military dominance
 - Militant intervention

- Opposition from within for political and other gains
- Corruption
- Parallel economy
- Transnational crimes
- Public agitation
- Activities of non-state and no-state actors
- Others
- Identifying areas where government loses power in governance, will itself be an area of study to overcome the complexities associated with it.

Modelling

- Modelling national security studies is a firm topic for research. The modelling methods available are mathematical and non-mathematical research laboratory models and bio-modelling under live situations. Extensive research is required in these areas.

Global Security

- Global security is the ultimate supposition into which the concept of national security will gravitate. It is not a tested statement but a hypothesis brewed under indicators. The UN itself is an indicator of the shift towards global security. Will the world swing towards global security? If so, when? That makes global security an interesting study.
- The concept of a world body and its value for the emerging world need to be studied. Are there chances for the UN to slip into a vegetative state or go the League of Nations way? Accusations of incompetence, lack of power, loss of face and more than that, of corruption, rape and abuse charges already bog it down. Stormy seas are ahead for the UN. Under this hypothesis the future of the UN and its value itself is a topic of study.
- The study of global security outside the shadow of the UN may reveal whether such a concept exists and if so, could it be the controlling concept for national security, especially when the powers of national governments are likely to erode in the developing knowledge world?
- The elements of global security may be different from what have been identified as those of national security. The differences cannot be predicted at this juncture, but could be explored.

Strategy Audits

- A fleeting remark has been made about strategy audits in governance in Chapter 22. The reference is in identifying the profitability of an organisation within a governmental system under NS_{\max} governance. There could be departments and even military or other armed forces who are just passengers in governance—a serious drainer of government funds

without any positive return and sometimes even harmful for governance. Here, a government will come to know the profitability by return for investments (money and people) in such organisations, if it carries out strategy audits. Otherwise, it may not only stand to lose heavily, but also fail to steer the organisation profitably. Such audits are never held. Instead, governments rely on reports from internal organisations that most of them (if not all) virtually exaggerate on the positive. That too, when there are questions and queries the governments have to answer to the inquisitive but not very serious, opposition and public. Serious research into internal and external strategic audits to understand the effectiveness of the organisations that are expected to contribute towards governance will provide methodologies for such audit beneficial to governments, to take stock of the situations at the appropriate time. Such audits may help under the maxim, *a stitch in time...*

Spiritual Security

- The relationship of spiritual security with national security is that of a space filler in human existential stability since national security even at its maximum—the level of self-actualisation for the entire population—is impossible to achieve. People will still be restless under perceived security. They are designed that way for survival. The forces that demand survival are so strong that the people will never be contented. The term “spiritual security” has been introduced in this contest. It involves every activity of the individual human in finding solace with life when the desired quantum of needs is not met. It normally extends beyond national security and therefore, is real within its illusory behaviour patterns—an illusive reality. Or, is the concept of spiritual security itself an illusion? Are all these findings incorrect?
- Spiritual security fills the vacuum between available apparent security and perceived security without which people may find it impossible to balance their existence. Spiritual security takes over the void by default. It is a requirement of existence. If that is so, a government may be able to keep its people under balance by providing more for spiritual security when the apparent security is at its low. In other words, over-reliance on spiritual security could be an indicator of limitations in apparent security, which is the underpinning basis of national security. This subject could be researched to understand its overwhelming influence over national security. Spiritual security is not spirituality *per se*, but all activities that involve self-indulgence in the process of life—religion, spirituality, god (belief and disbelief in god are identical behaviour patterns in spiritual security), fantasy, creative diversions, art, entertainment, gratifying desires under least threatened situation—like fantasy sex,² etc. Crimes may originate from such behaviour.

- Recommendations of research in national security are restricted to the concept of spiritual security and its importance in governance. This book does not recommend detailed research in spiritual security, even if undoubtedly proved to be a positive hypothesis since it is beyond the topic of discussion here.

THE INTERPLAY OF CHANCE IN NATIONAL SECURITY— RESEARCH OBJECTIVE

The part that chance plays in human lives are never ever seriously studied and applied in national security governance. In fact, chance and its influence in decisions never figure even in corporate management and governance, nor are they assessed seriously. Chance influences human life at all times. It hits from every side. Studies on chance were on two fronts. One was to understand the causes of chance to eliminate it totally.³ The interplay of chance in every element of national security will be visible, if the analyst sits close and prepares to face chance positively. Take the example of female foeticide. Can it be seen as an attempt to eliminate the cause of chance-induced but unacceptable births in future? Here the effect itself is eliminated to kill the chance element. In more advanced cases babies may be designed genetically as per choice without leaving it to chance. In this case, chance stands for ignorance and insecurity. Ignorance is eliminated to escape from the chance-induced effect of insecurity. In the second front, the laws that govern chance events are studied. It gives a clear picture of the inner structure of chance. At the same time, the event may remain chancy. However, in scientific studies, the law of chances will support to eliminate the chancy event if negative. For example, the launch of a space shuttle could be governed by chance elements that may be destructive once it takes off. Risk taking is strictly not managing chance, but playing with it ignorantly. Study of chance parameters and the laws that govern them may help in analysing the occurrence of destructive events subsequent to a decision. The study of chance is with the well-perceived dictum that a chancy event always has a cause. Therefore, if the laws of chance can be mastered, the element of unpredictability can be minimised in an event. Chance is not causelessness. It is an event with a definite cause that is not known.⁴ A chance event is the one in which the cause-effect chain is extremely complex and remains hidden from human perception. The event therefore, becomes unpredictable. Chance clutters human lives with uncertainty, despondency and anxiety. These situations bring major behavioural changes in a society. When it is said that the monsoon is unpredictable, the farmers' behaviour changes and prices of agricultural products fluctuate. Every element of national security is affected by chance. It is therefore, necessary that the effects of chance in the elements are studied seriously. This is only possible by eliminating uncertainty in the chance element itself by understanding the causes and prudent decision-making. Chance by itself, and as a medium of

decision-making needs appropriate study in the concept of national security and is therefore, a serious area for research.

CHAOS AND ENTROPY IN NATIONAL SECURITY— RESEARCH OBJECTIVE

Riding further into the realms of the unknown is a dream come true for anyone who dares. The strategist in national security with the mind of an adventurer will not be able to resist such temptations. The areas open to such people are many—one of them is the strange theory of chaos, which deals with order and disorder in systems. It applies to anything—from a broken wine glass to a vanished nation-state. While the theory deals with the laws of physics, in its original shape it applies to human life in every sphere of activity. The term chaos is used to explain certain instability situations.⁵ An example is weather forecasting. Long-term weather predictions are notoriously unreliable under chaotic behaviour and not exactly by lack of knowledge of Newtonian laws as most people perceive and blame meteorologists for. Chaos ideally deals with unpredictability. It is also the concern of humans about their lives. Is it the ability of humans in their uncanny knack of unpredictability by default, so that they do not steer into a fog at the macro level with respect to their terrains of existence or to have the final authority to press the button with the forces of nature itself? One doesn't know. And that long statement makes it a strange world. The theory of chaos thereby is closely related to decision-making and chance theory. An area that could be very well explored in national security studies. The non-linear, non-probability state (presumably) of chaos in the governance of a human system will be a researcher's paradise.

An interesting concept here, also used elsewhere in this book, is entropy. What does it mean? Students of thermal engineering will be familiar with the term connected with heat energy. According to one definition in thermal engineering related to heat engines, for an ideal engine, *the entropy is the measure of the unavailable energy when the sink temperature is kept constant* (where hypothetically, the energy is not lost into heat). A casual reader in national security cannot appreciate this definition. Even for students of thermal engineering, it has to be explained with its associated system topics including equations. The concept of entropy, denoted usually by Φ (phi), the 21st letter of the Greek alphabet, may sound vague since it cannot be expressed with clarity, but can only be perceived with clarity! (This is an interesting aspect of human intellect—one can understand, but cannot express convincingly). Under imprecise descriptions and the prisoner's dilemma of sorts, entropy cannot be expressed as a clear-cut scientific quantity. Therefore, seemingly there is an element of imprecision in its explanation.⁶ Entropy is said to be irreversible, and also said to increase in irreversible systems: ageing, breaking of a window-pane, a military coup, a government ordering an emergency, scrambling an egg—all are examples. It leads to a system change—a disorder of sorts. Unscrambling the egg by rewinding or reverse motion is not possible. In such

arguments, an equally provocative concept appears from nowhere—time. Quickly deviating from the self-induced entrapment in a term which the book has added-on for its readers, the term entropy may best be seen as energy that changes a system into something that it was not before and cannot be brought back by a reverse process. It happens when the entropy in that system increases or (is expressed for the first time, in the author's opinion) one could also redefine the term that when a system changes in the conditions of irreversibility, there is an increase in "entropy" within the system. This statement raises a question. In that case what changes the system? Is it time? Or is time again a concept that is visualised by an ever-changing system? Answers are clear to the physicists. But in governing national security, the government and the people have to be cautious about entropy and chance-induced variables that may cut through. The research proposed is in this field—to know the influence of uncertainty or to be aware of it when decisions are made in national security matters.

END OF THE WORLD—SORRY, THE HUMAN RACE

At the end of it all, one has to study the end itself. The study of national security in a people-centric manner does not indicate the end of human life—even if the planet is destroyed. Human life could outlive the planet. But examining the purpose of human extension beyond the planet or even otherwise—by withstanding calamities of the extinction variety is not the purpose of this book. But it is oft spoken about. There are men and women who walk around in circles holding the placards that read, "The world is coming to an end," at visible corners of the world. They normally do not mention the date. They are not sure. But they are absolutely sure that the world will end anyway. The epics and religious books talk about it too. They are a step ahead. They say exactly how it will happen and what the gods will do then. Some gods prefer to go to bed for a well-deserved slumber. The credentials of such premonitions could be questionable, but the fact is that everyone believes the world will end one day. This study intuitively points out that the human race cannot be wiped out even if the planet is destroyed without a trace. There is a possibility that the world will remain healthy for a comparatively long period, becoming healthier day after day, and even if destroyed, humans will continue to surge ahead like an expanding and contracting bellow that expands a little more every time. *Hindustan Times*, an Indian daily published 10 probable catastrophes in the next 70 years, predicted by scientists.⁷ With a pinch of added reality check, they are as follows.

- *Terrorism*—The chance for a major terrorist attack in the next 70 years with a WMD is very high.

Well, terrorism was there from the mythological days when demons unleashed weapons on good people, some of them were the WMDs of the mythical design. In the end the message was clear; that the good is more powerful than the bad and the ugly. So, why me worry?

- *Viral pandemic*—The probability of occurrence of pandemics is increasing. The chance is very high.

Pandemics come to rejoin like lost lovers. The world survived everything—from Black Death to more colourful fatalities. The world has the knowledge and determination—both motivated by the lure of money and fear of death. Pandemics are no match.

- *Super volcanoes*—According to scientists every 50,000 years the Earth experiences a super volcano. The most damaging super volcano, in history was in Sumatra 74,000 years ago. The chances for another to occur are very high.

The probability for one witnessing a super volcano is said to be 0.15 per cent. That doesn't matter. Just keep away from volcanoes while hosting a tailgate party. Tell the kids not to go near. Also, realtors beware.

- *Climate change*—The probability of this is high. In the worst case, climate may completely change in many parts of the world. It can cause trouble.

Humans will continue living with trouble. They became survival savvy by such experiences. Humans have survived ice ages.⁸ That is the very basic point of argument against their extinction. They will withstand anything that nature can force upon them.

- *Robots taking over*—This is a surprising new find that may not have caught the attention of the commoner. There are concerns, considered to be a high probability, that robots may go out of control and behave in a devastating manner and enslave humans to their command.

Ha! Worst comes to worst ask the robots to find a solution. There will be good robots too.

- *Meteorite impact*—This is considered to be a medium probability. A 1.5 kilometre impactor from outer space could pulverise the point of impact.

Well, that is all. It cannot wipe out humans like the dinosaurs even though there are many T-rex equivalents among them. The world considers it a good probability, and is preparing for it. After all, what are all those nukes and the missiles meant for?

- *Nuclear war*—People who matter believe that the world has outgrown the time of a nuclear danger. Hence, the probability is low. The potential nuclear flash points are considered to be the Middle East, India, Pakistan and North Korea according to the report and also those who advocate geostrategic deception from authoritative standpoints.

C'mon, don't understate the civility of these nations. These are nations with responsible people with responsible governments. Use of nuclear weapon is probable, but the surprise could spring up from elsewhere. It need not be from any of these highly prophesied nations. Better the world prepare for it. The probability is seemingly high. The good news is that the world is more than aware.

- *Telomere erosion*—Considered to be at low probability, telomere erosion means wiping out by default—a kind of self-destruction by a countdown evolutionary clock. Telomeres are at the end of every animal's chromosomes as protective caps. Chromosomes become unstable when they wear out. The telomere is breaking down generation after generation. Over a thousand generation the telomere may wear out to a critical limit.

There are reasons to believe in self-extinction since the mystery of death is an unquestionable default in a life form. An extended version of death, not by individual life form itself, but as a species is very much practical in this argument. But, not a nice way to quit.

- *Cosmic ray blast*—Cosmic rays are generated when stars explode after running out of fuel. It is called supernova that spews out cosmic rays that are fatal to life. It could hit the Earth in one of the freaky moments. Such a blast can trigger an ice age.

Earth has seen ice ages before. Otherwise it can do nothing when a star gets angry, sulks and holds its breath and implodes into itself. But humans are stronger than that and can outlive an ice age. It doesn't matter.

- *Black hole*—This is another low probability occurrence. The fear is that a black hole like matter may be created one day on Earth that will swallow the whole Earth. But scientists are sure that such a matter cannot be created in a lab or by accident on Earth.

A black hole on Earth will be the ultimate self-destructive paradigm; that is if it ever happens. Till then people may slip into potholes and manholes on the road and err, may die too.

Then, why worry? Yes, there are reasons. There could be many catastrophes hidden in the chart of human destiny that may not have been foreseen. There is a need to be realistic in assessing the future of life on Earth. Research in various fields will be a necessity for that but the ultimate research is to examine the hypothesis subliminally prophesied in this book—that humans will outlive all situations, even the one in which the Earth itself gets destroyed by chance—by the forces that are unknown now. Humans have amazing survival capability.

CONCLUSION

Topics of national security demand extensive research before implementation. The method of research is the prerogative of the researcher. In reality and during research, many new problems will emerge. The subject primarily deals with the influence of human needs and behaviour within a nation system and how it could be governed to provide apparent well-being to its citizens through able governance. Human systems are highly influenced by chance. Therefore, the study of chance and its influence on national security is important in the process of NS_{max} . While eliminating chance in a system will be impossible, it could be better evaluated by understanding the causes or the laws that govern it since chance is not chancy, but a cause that induces an effect. It is not known; hence is called chance. It is not an unwanted irritant, but a source of unlimited possibilities. National security can be managed taking advantage of chance like a ship with sails using the unseen wind. It is nothing new, but is already done and practiced. Search history to find it. That is a way to start.

Notes

¹ This could be an absurd and totally wrong prediction because what is in store for the future is unpredictable in a world that is driven by chance—the causes that are not known. Genetic and other technologies can alter personalities according to Tom Butler-Bowdon the author of the book, *50 Self-Help Classics*, Nicholas Brealy Publishing, London, 2003, p. 8. According to the author, the possibility that humans may be able to keep memories alive by transferring them to a new corpus long after the body has given up just like a computer drive transferring data, is scary. Well, in that case the mindscape certainly ought to become another terrain.

² Collin Wilson, *The Misfits*, Grafton Books, London, 1989, pp. 15–20. In this book Wilson explains strange sexual behaviour of people—masturbating while walking with a school girl and fantasising over them, peeking through up-skirts of school girls in a park, voyeurism, fetishes, etc., are not strange or bizarre behaviours but acts of desires under least resistance or threatened situations where the individual feels safe to satisfy the need. The psychology of pornography is probably hidden in this fact—security of premises. Perhaps those who are termed perverts in certain modes of sex (adopting to masturbation, school girl fantasy, paedophilia, necrophilia, etc.) adopt such methods to satisfy their sexual desires, but do not want to take the risk of getting it “under difficulties.” For a necrophile, it is a very simple argument—a dead person will not resist a good bang and no payment or “I owe you” either!

³ L. Rastrigin, *This Chancy Chancy, Chancy World*, Mir Publishers, Moscow, 1973, pp. 13–15.

⁴ Ibid.

⁵ Roger Penrose, *The Emperors New Mind*, Oxford University Press, Oxford, 1989, p. 173.

⁶ Ibid. p. 309.

⁷ “What a Way to Go!” *Hindustan Times*, New Delhi, 17 April 2005, p. 19.

⁸ “Diabetes was Body’s response to Ice Age,” *Hindustan Times*, New Delhi, 18 May 2005, p. 18. Though provocative, the theory says that humans developed diabetes during the Ice Age to survive by keeping the body warm. The ancestral people developed it when temperatures fell below 10 degrees Fahrenheit in just a few decades and the Ice Age arrived virtually overnight. There are scientists who are skeptical about this idea. But humans with their extreme survival instincts by default could probably survive even Ice Ages to grow and multiply.

26

Conclusion

*The world came through hellfire and floodwater.
It will go through them periodically.
In this cyclic turmoil, it is for the living humans to make life better,
not for the dead or yet to be born.*

Human beings were considerably inferior in their physical design to survive in a world where every step spelt danger. Their ability to survive rested in the continuously developing mental architecture of the evolving brain supported by genetic advancement. The brain was designed, programmed and upgraded by evolution to devise survival strategies. One such strategy, seemingly the earliest of all, was to huddle together against a common threat—by organising into groups. They did it, and did it well with all the problems associated with such living. Gradually, in course of time, nation-states emerged as the strongest of all human groups. Compared to other group activities of humans the formation of nation-states as formal groups was very recent. It opened up new identities, vistas, conflicts and turmoil, and has been seen in some quarters as a European concept of the 17th century Westphalian principles. Nation-states provided identities to chosen human systems. The process continues with the creation of new nation-states. The disintegration and disintegration of these states is expected to be a continuing trend, though the chances of their integration or merger are likely be remote and passé in the course of time. In some cases, religious groups also acted as catalysts in the formation of nation-states. Religion still dominates nationalism although there may be disagreement. There are religious protagonists who dream of the creation of unitary worldwide religious nations by unifying people of the same faith and are working towards this objective. Religion is much larger and older than the concept of a nation but its necessity for a human system is different from its necessity for a nation. The concepts of religion and nation are seriously asymmetrical, though both are critical to human existence. The admixture of a nation-state with religious principles is an incompatible proposition. The fallouts will be heavy. Along with nation building, groups based on other features of human interaction and activity also existed, beyond and within the state boundaries. The concept of group security was germane to them. National security, conceptualised much later after the nation-states became a reality, is a distinguished form of group

security exclusive to the people who belong to a nation-state. But its principles can be applied to any formal group—corporates, other organisations, societies and even families—from the smallest to the largest, with appropriate modifications in governance and administration. That is how the concept has been seen in its definition.

Many scholars observe human settlements as part of different civilisations at any particular time in history. But, there seem to be reasons to believe that entire humanity is part of a solitary civilisation at diverse stages of development. The stages present the impression that there are many civilisations. There is a belief that highly developed settlements truncated at times for unrecorded reasons (disorder maximisation). In spite of the extinction of certain groups even at advanced stages of civilisation, humankind multiplied and developed under powerful life sustaining forces. It gives credibility to the human capability to adapt to the laws of life sustaining forces on earth, and to the consequences of their violation. Within this argument, any clash between the groups in the world is not a clash between civilisations, but a clash within a civilisation. Civilisation is an entity of human group activity at different stages and a function of time. It is live and vibrant. A stage will end when disorder within it is maximised. Containing the “disorder within,” is important to retain “group security.” Another lesson is that human beings possess an amazing ability to survive under their seemingly weak physical design. No disaster or calamity has been able to ground humans to the status of an endangered species so far. They are multiplying against all odds. Today, they are privileged species as citizens of nations. However, there are problems too. Domination of the powerless by the powerful continues. There are differences among people. Such differences thrust upon the nation-states an informal and vacillating hierarchical order as reflections of human societal systems. Within these confinements, security has to be identified and maximised. Security is against threats to human survival aptly perceived, but not inflated. The TMC (threat matrix cube) is a tool for threat analysis towards security assessment and strategic planning. The “cube” does not take into consideration the wild cards: unforeseen events in the world that could cause a major discontinuity or fundamental change in the security objective. The wild cards are external to it. Any identified threat can be sited within one of the cube characteristics (type) unless accompanied by a wild card. National security is beyond the concept of just physical security. It is defined in many ways according to prevailing perception. In this book the concept of national security is defined as *the measurable state of the capability of a nation to overcome the multi-dimensional threats to the apparent well-being of its people and its survival as a nation-state at any given time, by balancing all instruments of state policy through governance, that can be indexed by computation, empirically or otherwise, and is extendable to global security by variables external to it.* This definition needs to be supported by a mathematical variable: NSI (National Security Index). NSI is the state of well-being of the people of a nation at a particular time based on the aspirations of the “ordinary” people of that nation. It is perceived to be a measurable

sliding index that calls for further research for calculation and application. Identifying a worldwide indexation process will require *consensus ad idem*—identity of mind—among national governments. Such indexation, like the fluctuations in a stock market, will indicate the status of national security of a nation at a particular time and date. It will be a valuable tool for governance under audit, especially with people participation. The term ordinary people, is a statement of innocence. It points at those for whom being the citizens of the nation-state, national security in its people-centric perception is the only means to maximise the well-being on the path to survival. They are the people who depend on the state for their survival and have accepted its sovereignty, providing the will to cooperate in the affairs of the state under the rule of law. They are simple citizens with the power of juggernauts to participate in national security governance if invested competently. The government has to be aware of them because it is their enriched investment that will lead to NS_{max} under empowered governance and they are the majority for whom national security thrives in its purpose.

The constituent elements of national security are clearly visible through the fog of accumulated misconception. There are 15 elements in an informal hierarchical order though there is no recommendation to study them in that order. The earliest identified element is military security and the latest in the array of elements is genomic security. Each of the 15 elements is still evolving and expanding. They were identified from acceptable parameters by disregarding those that were conditional to the concept in varying forms. The underpinning characteristic of the elements is their mutual inclusiveness. They are complementary to each other and pervasive to terrain specific environments. Terrains serve as evolutionary platforms to the elements of national security. Land, ocean and air space are the identified geophysical terrains. Outer space, cyber space, genomic matrix of life and reluctantly, the human mindscape are considered the non-geophysical terrains for the interplay of national security elements. It is doubtful whether the human mindscape will evolve as a terrain, but scepticism cannot be the decider of forecast. Mind control experiments are not only continuing in the world under various faculties, but also deviating into more scary scenarios of thought and memory transfer from one corpus to another. The future is not clear. But in a logical paradigm, humans are not expected to stop experimenting even with the bizarre. The power of destruction is embedded in the psychology of invention. Therefore, the human mindscape as a terrain cannot be totally discounted.

Military security is identified as the foremost element of national security. But for the majority national security means military security based on crude military might. Ideally, human beings are expected to survive using their mental faculty not by claws, jaws and rugged environmental adaptability. Logically, the intellect that set them apart from other animals is meant for survival using more advanced mannerisms than simple animalistic resilience. But mostly the human intellect deviates from its “intended” purpose of caring for life, to find substitutes for the missing claws and jaws. Overburdened indulgence in perceived physical

inferiority makes them fantasize about superheroes. The intellect is used to design weapons from the Stone Age spikes to those in the mass destructive arsenals. The weapons cover up the physical insecurity paradigm. Using the extremely powerful mental faculty to overcome biological inferiority for survival is a complete let down in human survival instincts, a reversal of sorts, though it works. Why is the precious intellect subverted in this manner? Perhaps, human beings are at the rock bottom of the evolution of intelligent species, closer to animals than evolving intelligent species and similar to a unicellular organism at the beginning of life. Otherwise intelligence would not have been used in this manner. Undoubtedly, primitivism continues through the humans too. On the other hand, human beings are evolved animals whose survival is through more advanced techniques. Otherwise how would they have been so copious in a world where danger lurks in every corner? Does it this mean that intellect supports cruelty and other associated feelings such as hate, jealousy, envy, sadism, etc. as advanced emotions? Animals are not known to be cruel. Even if the purpose of the human race is to live, unlike other animals, without taking up aggression as a tool for survival, the pace of the changeover towards a totally non-aggressive existence could be extremely slow. Military might does not guarantee well-being. It may protect people from alien invasion or kill them for proclaimed reasons. It is necessary under the circumstances, as an essential instrument of national (global) security within the scaffold of national policy. This is achievable by transforming crude military might into intelligent and knowledge-based military might. The world is turning in that direction at a very slow pace. Wars will continue; intelligent and knowledge-based military might will make it result-oriented and appropriate for survival. The concept of intelligent military might is not new. The mythological wars depicted in the ancient Hindu scriptures *Mahabharata* and *Ramayana* showed righteous wisdom and respect to human rights even on the battlefield. Governments have absolute control on the element of military security whereas; on other elements its power need not be absolute. That is another reason why governments prefer military security as the prime element in discussions and dealings on national security. What nations can best achieve is to replace the crude military might of brutality, violence and dictatorial objective with intelligent and knowledge-based military might of strategic wisdom, technological advancement and the objective of conflict resolution. There are many nations that are capable of developing “intelligent and knowledge-based military might” with the wider objective of national security by focused planning. If exploited effectively, this capability will be a buffer to the security of such nations. The control that a government will have on other elements can vary with many other players in the domain. Governments may find it difficult to control the disorderly traffic on the narrow roads to the elements of national security. The competitiveness of a government in providing national security to its people can be ideally seen from the effectiveness by which it could exercise control over the elements. As mentioned earlier, globalisation has eroded some of the powers of governments. Economic security, energy security and resource security are direct

examples but governments may also face it in other areas such as environmental security and disaster security where there are large numbers of players as stakeholders. Many of them are non-state actors. Even in the case of a national disaster, players external to the government are involved in relief operations including fund-raising, some of them questionably fraudulent and geostrategically unacceptable. Their activities dilute the efforts of the governments. Limitations in a government's capability to control national security governance arise from constitutional reasons of politics, incompetence of political and bureaucratic systems, power games within, absence of professionalism, inertia in the NSI by lack of development, failed people, and many other negative conditions. The latest quoted reason, globalisation, is the result of an enlarged knowledge base, information technology and the communications revolution. All these limitations, along with the ante-force choke the system, widening the gap between the authority and accountability of the government. For effective governance, authority should be appropriate to accountability. When it is limited the government fails in its commitments to the state and may be changed by forces external to it including a democratic election. The next government meets the same end if it is also plagued by identical situations. Re-election of a democratic government could be a sign of success in national security governance. It also shows that the electorate is not tossing and turning on the electoral beds as restless insomniacs. This statement is only a thumb rule and needs serious examination based on each situation to validate the state of governance. A change of government after the first term in a democratic election process could be an indication of the opposite. It shows that the NSI is falling; that there is an imbalance in the government's authority versus accountability. The new government should not be euphoric about its victory because they have won as a result of the failures of the previous regime and not due to their own popularity. The newly elected government could do better if it attempts to understand the limiting forces in governance experienced by the previous regime. Otherwise, it is sure to be replaced by the restless electorate in the next rally of the ballot, based on hope.

The net interactive output of elements ascertains the NSI. There are many situations where incremental changes in an element may bring an inverse reciprocal change in another. This impact on the net advantage is very important in national security governance. Maximising national security within the concept of a nation-state is an ideal objective for any government. *Arthasasthra* and similar guidelines of statecraft in the days of the kings, deliberate on the duties of the "king" towards the people of the kingdom (here the word "king" is used without gender bias applicable to any one who rules). Monarchical systems either independently or with democratic orientation prevail in many countries. The Italian political theorist, Niccolo Machiavelli had elaborated about the ruler and his provisions for ruling in his treatise *The Prince*. It is the duty of the government to provide for national security, irrespective of the form of governance.

The threshold of perceived security drops as humans advance in life. When compared to apparent security, the security that the government is expected to provide is more or less constant except that the efforts required to sustain it at a certain level will be more as the world evolves. This means that more efforts will be required from the provider, i.e. the government, to maintain the same level of apparent national security with advancements in life. The balance, even at the height of apparent national security, is driven by spiritual security without which there will be no psychological stability. It is more or less by default. Spiritual security and all forms of human endeavours for achieving it will therefore, be predominant in the world with advancement since perceived security level is poised to increase proportionately. Under such situations, demand will increase and the scope of elements will widen. There will be a rambling conflict of aspirations and attempts of power maximisation that will not be easily satisfied. So the government has the obligation to induce an appropriate national security threshold by governance in their people. The national security matrix is simple to understand but the policies related to them can be complicated. Therefore, there is a need to understand and design policies unambiguously. Errors can cause irreversible policy mishaps. There is no solution to a damage already done. This is the principle of chaos theory. Only mitigating measures can be taken subsequently. A clear understanding of the national security concept, its changing profile and elements, are therefore vital to any nation. It is also relative to the character and aspect of each nation. The concept of power of a nation is relative to the power of another, whereas the concept of national security is relative to its own perception of security. It could be different from the perception of another nation unless the assessments are based on the notion of apparent security and not perceived security. Often nations make such perception on perceived security and not apparent security, because the concept of national security is yet to be assimilated in the human system correctly. Often national power is mistaken for national security. National security is not about war and fire-works; nor is it about missions impossible. It is achieving a state where people feel that their needs are met and creating a feeling of well-being with a realistic sense of hope about the future. It is about making life worth living keeping future generations in mind. To that extent, it is a futuristic concept with respect to fulfilling the needs of humans and making them aware. It is a concept that can more easily be explained by what it is not, rather than what it is. For one, it is not a process that is riddled under the complexification of processes. It is simple by law of life. It is an interesting find. Any human activity has to be simple, because the capability of a human being is extremely limited. The human being is a tender creation with highly limited faculties. Complexity in human life is a relative expression within these limitations. Therefore, whatever they have to perform for assured survival, has to be simple and within their limitations. It may look hard and tough as if for an insect attempting to climb a flag-pole. But the procedure is simple—just walk up. It is within its capability and certainly not a complex activity. That is an aspect not yet perceived by the humans. All aspects of national security

have to be simple to execute, however complex the process may seem to be. There is no quick fix solution that a political leader, corporate executive, military commander, bureaucrat or group leader can attempt while holding authority. Performance is a simple activity that may demand continuity within the capability in any human endeavour. The problem is in perception because within the perception lie human conditioning and associated vicissitudes. Checks and balances go tipping over. Imaginary complexification is not exactly the cause of the problems of the world today, especially those under dispute and debate. It is in playing them. Attempts in a game plan based on a lose-lose ground will not yield any result, however competitively it may be played. It is also a question of acceptance of a win-lose situation in negotiation. It is possible when disputes are handled in split games where the win-lose situation is reversed. With the passage of time lose-lose and likely, the win-lose situation too may fade away and the disputes tend to be resolved unless retaining them is essential for inducing change. The best option that the world could try out in all such situations and under the explained circumstances is win-hold-win situations. It is like zipping a bag between intentionally prolonged interruptions the ruse is not to pull the zip back once zipped forward.

Analysing the NSI even hypothetically is a serious problem in the absence of true indicators. Probable indicators of national security need to be scrutinised thoroughly to separate non-indicators. This knowledge comes gradually. For example, a much-hyped parameter is the suicide rate within a population. Is it an indicator of national security? A suicide is intentional killing of oneself. It is a behaviour pattern, a reaction of a mental process. The stimulus and act is within the personality of the suicide. It could be triggered under the cue and stimulus suggestive to many reasons—honour deaths, emotional games with oneself or others, depression, impending fear or even an insurance fraud in criminal cases. Psychologically, it could be part of a game for a reward often unknown to the victim. Thus, the reasons for suicides need not be identical and hence, suicides cannot qualify as an indicator of a universal phenomenon. Such parameters, when considered to be an indicator of national security should be tested repeatedly to avoid misjudgement.

“History repeats itself”, is an oft-repeated statement. Every incident—war, terrorist attack, economic depression, disaster, epidemic, etc.—comes back. Reactions to the incident lapse dissolve into life and fade away. The incident will repeat itself in the form of another wake up call. Under this principle what the world witnessed in Hiroshima and Nagasaki at the tail end of the Second World War cannot be considered as the last of such attacks. The latest terrorist attack or its collateral assault on Afghanistan and the battering of Iraq etc., are sure to be repeated at different places at different times. Stephan Flynn in *America the Vulnerable: How Our Government is Failing to Protect Us from Terrorism*, stated that despite all the pronouncement post the September 2001 terrorist attack in the country, the government was not in a position to protect the people of the

United States. The book begins with the statement, “if September 11, 2001, was a wake-up call, clearly America has fallen back asleep.” It is applicable to all. The amnesic approach of humans to the future, with an absolutely callous or totally blind attitude towards the past is forlorn and at the same time, amazingly close to the behaviour of animals towards the past. They forget an incident in a flash and depend more on their instinct to survive. Does this bring the humans with a brain that is still very primitive, closer to the last of the animals than to the next stage of creation in evolution? Why humans retreat like animals, is a mind-boggling question. According to Flynn, America is living on borrowed time and squandering it. This statement is applicable to the whole world, which was always on borrowed time. The process of national security flows through this evolutionary route. Adjusting with the pace of this process is very important if humans are to avoid slippage, like in a belt that links wheels in a drive. National security governance may have to induce the friction that is necessary to synchronise the process with the pace at which the evolution progresses.

The Achilles heel of national security lies in its centre of gravity. That again is a collective concept of all the elements placed together. The problem is that the centre of gravity shifts continuously based on the changing scenario. That is how in a disaster situation even insurgency takes a back seat. Each element of national security has its own centre of gravity and that should match with the resultant centre of gravity of the concept itself. For stability, it should provide in a borrowed nautical term, a good metacentric height to keep the NSI buoyant. While the metacentric height is the leverage between the centre of gravity and the centre of buoyancy of a ship in water, the envisaged meta leverage in national security is between its centre of gravity and those elements of it that will keep changing under changing situations. It is a typical case of leveraging the elements with the system to make the system buoyant; the more the leverage, the more stable is the system. Understanding the centre of gravity and the meta-leverage calls for serious studies. This principle is not critical to national security governance alone but also to every organised group. Collapse of an industrial house, defeat for a political party in an election when everything was seemingly going right, a victory in war that turns out to be a devastating burden subsequently, etc. are examples similar to the sinking of the Titanic. When goings are seemingly good the leverage might snap at the centre of gravity.

Chance plays a critical role in routing the world towards the future. Every chance is a cause since a chance event is an effect. The effect becomes chancy when the cause cannot be named. The next question is, “Can one create a ‘chance’ event for a desired effect?” For example, assume that a government deliberately ignores an intelligence warning about a serious terror strike with an eye on opportunity for a choice objective, say...? Well, that is a cryptic question one may dare not ask! Independent, totally detached and unbiased brain banks will be needed to critically examine and answer all these questions. Biased judgments will advocate win-lose statements whereas national security governance needs to identify win-win

or win-hold-win decisions in governance. National security is not about defeating, but winning. Winning need not involve defeating. No game can be won strictly by defeating the other entity in national security. It is the government who should provide for apparent national security to its people. The accountability is extremely high and the question is related to the authority of the government and the power it wields in managing its affairs. It is seen that this power is the maximum in aspects of military security, whereas in other elements, the authority of the government is at a reduced level. Besides, globalisation and other international processes (an agreement, for example) limit the authority of national governments. The limitations of the governments in providing for national security will therefore arise from the erosion of their authority.

While god and religion support spiritual security, such themes and entities have to have special status in national security. Government's involvement in these entities beyond its appreciation and awareness should be unwarranted from the point of view of national security. A government should support spiritual security in its natural habitat, namely the human psyche and not in the governing systems. To that extent even a proactive attempt to erase a natural superstition should be avoided and has to be escorted out indirectly. Spiritual security may provide relief to a human when apparent security fails. Challenging belief systems could be counter-productive in such cases. Besides, an act of challenge strengthens the belief system further. Spiritual security aspects migrate into the void in apparent security. People will not accept challenges to belief systems on which they survive. The belief systems have to be removed slowly and carefully like the scaffolds from a renovated building. It has to be done by the individuals themselves. Government has to serve the society with the requisite knowledge.

While the concept of national security is embedded in all aspects of a nation system including the constitutional documents, the concept of global security is at the formative stage and has yet to be accepted beyond the idea of collective security. There are many issues that are tackled towards providing a better world to the next generation as evidenced in the often appearing slogans of governments and international organisations. The issues of global security are different from national security, though the solutions could be compatible. For example, the term "war on terror" could be acceptable to the entire world. Disaster security concepts which when shared in the global perspective are equally applicable to national security. The ability of national governments in managing national security will improve if they could identify the pedestal of global security solutions and view national security from there. The superpower and the United Nations could guide national governments about the application by duality of a global security solution in national security management. It is in this process that the idea of global security, which ultimately is the process by which the world will evolve into a better place, can be germinated. The superstate whichever it may be, and the United Nations will have serious roles to play in the matters of the world. Whether these roles will be central or not depends upon their acceptability among other nations.

Notwithstanding this ambiguity, national and international governmental systems should understand that their existence is hidden within the roles they play. The approach by military pre-eminence, geostrategic goodwill, rule of dominance, aids and supports, sanctions of greed, diffusion of technology, suppression of adversaries, hidden religious agenda, confidence building by external empowerment, etc., are not serious issues that need to be debated. Nations will follow the leader strictly based on situations. Preparing a follower based on coercion and fear is not the tune of the future. History has proven this, and it is necessary for humans to understand it even in the animalistic amnesia in applying lessons of the past to the future.

The world is fixated on long-term defence planning rather than national security planning. Nations are engaged in predicting the future conflict scenario and estimating to build-up according to their appreciation. This fixation, besides causing proliferation of duality technologies and weapons, may also squeeze the economy of many nations. The question is not the human trauma associated with the conflicts or conflict situations but the economy diversion, which can cause a debacle in the economic front. Economic depression and panic have a resulting tributary in war and conflict. Former Iraqi president Saddam Hussein's economic difficulties in the prolonged war with Iran made him hunt for money (oil) in Kuwait, which later proved to be destructive to his regime and plunged the country into indefinite turmoil. In a larger dimension, the Iraqi bio-model will equally be applicable to any nation including the superstate. The Iraqi invasion and its immediate results are similar to the US invasion of the Philippines. If that is a bio-model, the future of Iraq and its position in the world will be that of the Philippines, provided the rest of the parameters hold. It is important to understand that preventing war is nearly impossible and even if it is, it is not to save people from dying, but to prevent the debacle of the resultant economic destruction and collateral effects to life. Human casualties in war are actually negligible compared to the ways in which people exit the world otherwise. Most people are pessimistic and guarantee assured destruction and apocalyptic views about the world. Long-term strategic planning by predicting the trend may derail right at the beginning. Accuracy could be availed by seeing the mirror image of the past into the future and learning lessons from the history of the "future." Unfortunately, the inherent animalistic amnesia causes governments to deviate in decision-making in relation to the future. Sadly, they (re)create the past in the future. Any overview of strategy for the future may depend on propositions to shape the process. The parameters will provide scholars an idea of the world. If the parameters are wrong or disjointed, the ideas will be nullified *ab initio*. Unfortunately, the nullity will be known only after the future slips into the past. It is a repetitive case in matters of governance of every nation and there are ample examples of it in history. Is it possible to appreciate the future without the key factors? If so, it could be a different idea. In that case, the future has to be visualised by evaluating the past and correlating it with the present. The applicability of the past and present to the future could very well be

analysed. An example is war. It was there in the past; it continues today. It is simple to state that the world will have it tomorrow—Q.E.D. But that is not enough. The next question is, “what will be the nature of war?” The answer is again in the past, correlated with the present. The changing nature of war is evident and therefore, the answer could be that a war that is fought in extended terrains with technological advances under limited casualty conditions. This is a hypothetical example where no key factors for assessment are examined. Any key factor or proposition like “the country is poised for economic growth at a certain rate by the report of a certain agency” is avoided in such decision-making. Propositions and hypotheses are still uncertainties in a prediction that will demand decision-making. A prediction in strategic studies and implementation of decisions based on it involves big money and just a single “wild card” in the process may turn the system around. While eliminating the wild cards may not be possible, it could be minimised by breaking the curse of the animalistic amnesia of humans and allowing the past to participate. Once the past is considered seriously for decision-making, there are also chances that progressively history will remain without distortion. Another example is a disaster situation. The immediate question is, “will it be repeated?” The answer from the consequential analysis will be simple: “yes, very much.” A chain of questions and answers later, the objective may become protecting life and property from the damages of the disaster and not preventing or mitigating it. That is how the dykes in Netherlands have been engineered. We have many actual situations of decision by consequential analysis and not proposition or parameters based analysis. Consequentiality depends on data from the past and present, and correlates it with the present to see the direction. Prediction and subsequent decision-making are vectors; they have directions. Any directional entity should have time at its core. That is another reason why hypothetical or propositional decisions, besides being costly, also fail in the future. The world has been preoccupied by conditions caused by diverse belief systems each attempting to exert on others, as well as transnational corruption and crimes as part of the ante-force. Dealing with them falls under the rule of law. If the methods are not effective, the world has to find new methods. The involvement of the military, whether pre-empted or otherwise, will be based on the intensity of the problem. Not far from the dug up position of exploration, the reasons for such issues could also be found in economics. A change in economic policies could curtail many of the problems with ample geostrategic approaches. The asymmetry between the government and perpetrators of crime mentioned earlier are increasing in favour of the governments and international systems. The concept of the superstate is here to stay. Visualising the future, it is not difficult to predict that the US will be more powerful than now and will remain on top for many years. An abominator of the United States should know that an attack on it would only make it more powerful and lengthen its life span as a superstate. History teaches a lesson that the humans have failed to understand so far—speculations about annihilation of the human race by itself in a distant future will always be distorted by a wild card at

the appropriate time. It is not likely to happen. If there is a force that could ever destroy the human race, it will be under the law of nature. Humans may never eliminate themselves totally. Even the law of nature, if destined to annihilate humans eternally, could stumble upon a wild card as a spoilsport. This rule is applicable to every speculation on the future based on standard parameters. This is not optimism or wishful thinking, but a mathematically correct and acceptable reality of consequential analysis. Unlike the world, the nation-states are not closed systems. When the human race has to be wiped out, it will not be state-wise or according to the position in the informal hierarchy of a nation-state, but that of the entire world. That is not likely.

Unless, god dies with humans.

Appendices

These appendices are meant for reference as well as simple perceptive exercises by participation in global affairs.

APPENDIX A

PERCEPTIVE EXERCISES

Appendix B gives a list of countries and other human groups that existed autonomously or as protectorates in 2005. Time it on today—the day you are at the exercise—and see whether any of them has changed its name amalgamated with another, split up, or changed status? Amend the list accordingly. Try to predict their future with respect to their past and present status. Place them in the hierarchical order in the blocks given in Figure 14.1. Arrange them as a worm train by worm design. Is this possible? What will be their future? Which are the new countries you expect will décor the world atlas say, in 2025? And which of the countries will vanish from the atlas? Check your predictability updating it regularly at chosen intervals.

Exercise 1—Watch the World We Belong To

- In terms of population—will it increase or decrease? If so by how much? Why? What will be the trend? Analyse your own study.
- Are you sure these countries will exist as they are, say by 2025? Will their names change? If so, what will be their new names? What about their internal unity? Will they disintegrate? Or will they unite or amalgamate with another and become bigger? Mention whether it—will not exist, amalgamate or disintegrate.
- Which are the new countries in the offing? What are their names? When will they emerge?
- What is their current national security level? Do not assess the national security index. It is a variable with respect to time and is yet to be researched and internationally accepted as per the findings of this book. Besides, the NSI is an indicator that changes daily, if not every minute. But you can make a relative scale against an ideal state (there is no such state, though!)

on a 1 to 100 scale with 100 at the maximum apparent security level. Such a state is not reachable. You could use even decimals; it does not have to be a whole number. Examine your scale and review it every year.

- Alternatively, take a standard country. Any one. Give it a grading in its national security. Then, make it a constant and compare others with this standard.
- What is the worst scenario that these countries will face in the next decade, in two decades or even beyond? (For example, what was worse for the US: the 11 September 2001 terrorist attacks or cyclone Katrina of 29 August 2005?) Name the problem and the year you expect it to happen. Is your mind more active? Then predict how this affair will turn out to be for that nation.
- What are the problems these countries face currently? How they will settle down? When? Ask yourself this.
- Which country will be the next superstate? When?
- Which countries will be superpowers? When?
- Among your predicted superpowers which countries will give the current superstate a run for its money? When will the game start?
- Add your own questions? Ask yourself. Then contradict yourself. Argue on contradiction and further on answers arrived at. Continue the “barbershop mirror” syndrome argument.
- Finally, prepare a table for assessing the level of elemental security of each country (if not, at least yours and your neighbours’) on a scale of 1 to 100 for each of the 15 elements. Allocate your grading periodically and watch incremental changes in each. There are enough feedbacks available. How does increase in one element affect the other element in each? And how much is the change?

Exercise 2—Watch the Superstate—We May or May Not Belong

- Is the United States of America a superstate?
- Has it peaked as a superstate?
- What are its weaknesses that will expose its underbelly as a superstate?
- What are the factors that keep it at the top?
- Will it fall? If so, when? What will be the tipping point(s)?
- Who will be the closest contender?
- What can the US do to prevent the decline and final fall?

Exercise 3—Find a Way to Govern

Appendix C gives identified forms of governance in the world. In Exercise 3, examine the current statement about each of them and the comments of the author given in a lighter vein below each. See whether you would like to change the actuality as well as your comments—seriously as well as in a lighter vein. It will be a

worthwhile exercise to understand criticisms prevailing on each form and also to understand your own conditioned affiliations and cognitions. Can they change? Examine the advantages and disadvantages of these systems in developing national security? Which is the best form for NS_{\max} ? Are they all the same? Will more types come up in the future? If so, what are they? When will they emerge? Will any of the current systems permanently vanish? If so, which ones? When will this happen? Link up the countries with their current governance system and search for the best system in your assessment and opinion, for each country for NS_{\max} .

Exercise 4

Ask yourself the following.

- Are there any other forms of governmental systems?
- Will there be any new forms?
- Will any of the forms cease to exist?
- Which form do you prefer? Why?
- Which is your next preference? Why?
- Place yourself in your next preference and start living in it seriously, as if you are a virtual but least privileged citizen of a country that is governed under that system. Take a year or two. Do you like it better than your first preference now?
- If you do not, consider yourself as the least privileged citizen of the system you are governed by? Leave under this imagined condition for sometime? Do you like the system now?
- Will a global system ever evolve? If not, why? If so, when and what will be the turning point?

Exercise 5

Maintain a record on global affairs and note your exercise findings in that. Re-examine it periodically; note the changes. Try to answer how the changes took place. Can you attempt to predict the future in a better perspective now? Continue throughout the years—as long as you are interested in humans and human systems.

Keep off any kind of bias.

It is fun.

A WORLD FULL OF COUNTRIES (2005)—A CAULDRON OF IDEAS FOR EXERCISE 1

1. Afghanistan
2. Albania
3. Algeria
4. Andorra
5. Angola
6. Antigua & Barbuda
7. Argentina
8. Armenia
9. Australia
10. Austria
11. Azerbaijan
12. The Bahamas
13. Bahrain
14. Bangladesh
15. Barbados
16. Belarus
17. Belgium
18. Belize
19. Benin
20. Bhutan
21. Bolivia
22. Bosnia and Herzegovina
23. Botswana
24. Brazil
25. Brunei
26. Bulgaria
27. Burkin Faso
28. Burma
29. Burundi
30. Cambodia
31. Cameroon
32. Canada
33. Cape Verde
34. Central African Republic
35. Chad
36. Chile

37. China	.....
38. Colombia	.....
39. Comoros	.....
40. Democratic Republic of the Congo	.....
41. Republic of the Congo	.....
42. Costa Rica	.....
43. Cote d'Ivoire	.....
44. Croatia	.....
45. Cuba	.....
46. Cyprus	.....
47. Czech Republic	.....
48. Denmark	.....
49. Djibouti	.....
50. Dominica	.....
51. Dominican Republic	.....
52. East Timor	.....
53. Ecuador	.....
54. Egypt	.....
55. El Salvador	.....
56. Equatorial Guinea	.....
57. Eritrea	.....
58. Estonia	.....
59. Ethiopia	.....
60. Fiji	.....
61. Finland	.....
62. France	.....
63. Gabon	.....
64. The Gambia	.....
65. Georgia	.....
66. Germany	.....
67. Ghana	.....
68. Greece	.....
69. Grenada	.....
70. Guatemala	.....
71. Guinea	.....
72. Guinea-Bissau	.....
73. Guyana	.....
74. Haiti	.....
75. Holy See	.....
76. Honduras	.....
77. Hungary	.....
78. Iceland	.....

79. India	.....
80. Indonesia	.....
81. Iran	.....
82. Iraq	.....
83. Ireland	.....
84. Israel	.....
85. Italy	.....
86. Jamaica	.....
87. Japan	.....
88. Jordan	.....
89. Kazakhstan	.....
90. Kenya	.....
91. Kiribati	.....
92. North Korea	.....
93. South Korea	.....
94. Kuwait	.....
95. Kyrgyzstan	.....
96. Laos	.....
97. Latvia	.....
98. Lebanon	.....
99. Lesotho	.....
100. Liberia	.....
101. Libya	.....
102. Liechtenstein	.....
103. Lithuania	.....
104. Luxembourg	.....
105. The Former Yugoslav Republic of Macedonia	.....
106. Madagascar	.....
107. Malawi	.....
108. Malaysia	.....
109. Maldives	.....
110. Mali	.....
111. Malta	.....
112. Marshal Islands	.....
113. Mauritania	.....
114. Mauritius	.....
115. Mexico	.....
116. Federated States of Micronesia	.....
117. Moldova	.....
118. Monaco	.....
119. Mongolia	.....
120. Morocco	.....

[illegible]

163. Sudan	. . . . .
164. Suriname	. . . . .
165. Swaziland	. . . . .
166. Sweden	. . . . .
167. Switzerland	. . . . .
168. Syria	. . . . .
169. Tajikistan	. . . . .
170. Tanzania	. . . . .
171. Thailand	. . . . .
172. Togo	. . . . .
173. Tonga	. . . . .
174. Trinidad and Tobago	. . . . .
175. Tunisia	. . . . .
176. Turkey	. . . . .
177. Turkmenistan	. . . . .
178. Tuvalu	. . . . .
179. Uganda	. . . . .
180. Ukraine	. . . . .
181. UAE	. . . . .
182. UK	. . . . .
183. US	. . . . .
184. Uruguay	. . . . .
185. Uzbekistan	. . . . .
186. Vanuatu	. . . . .
187. Venezuela	. . . . .
188. Vietnam
189. Yemen
190. Yugoslavia
191. Zambia
192. Zimbabwe

Other

193. Taiwan
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Dependencies and Areas of Special Sovereignty

Australia

- Ashmore and Cartier Islands
- Christmas Island
- Cocos (Keeling) Islands
- Coral Sea Islands
- Heard Island and McDonald Islands
- Norfolk Island

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China

Hong Kong
Macau

Denmark

Faroe Islands
Greenland

France

Basses da India
Clipperton Island
Europa Island
French Guiana
French Polynesia
French Southern and Antarctic Lands
Glorioso Islands
Guadeloupe
Juan de Nova Island
Martinique
Mayotte
New Caledonia
Reunion
Saint Pierre and Miquelon
Tromelin Island
Wallis and Futuna

Netherlands

Aruba
Netherlands Antilles

New Zealand

Cook Islands
Niue
Tokelau

Norway

Bouvet Island
Jan Mayen
Svalbard

UK

Anguilla
Bermuda

British Indian Ocean Territory
British Virgin Islands
Cayman Islands
Falkland Islands
Gibraltar
Guernsey
Jersey
Isle of Man
Montserrat
Pitcairn Islands
Saint Helena
South Georgia and the South Sandwich Islands
Turks and Caicos Islands

US

American Samoa
Baker Island
Guam
Howland Island
Jarvis Island
Johnston Atoll
Kingman Reef
Midway Islands
Navassa Island
Northern Mariana Islands
Palmyra Atoll
Puerto Rico
Virgin Islands
Wake Island

Miscellaneous

Antarctica
Gaza Strip
Paracel Islands
Spratly Islands
West Bank
Western Sahara

APPENDIX C

A LOOK AT GOVERNMENTAL SYSTEMS (2005)—CHECK IT OUT FOR EXERCISE 3

(Or in other words, do we have a choice? The comments in italics (including this) are the author's own version in a lighter vein and not to be mistaken for any freaky political affiliations)

Anarchy

Anarchy is a condition of political disorder brought about by the absence of governmental authority or law.

(Absolute freedom to destroy everything. Anyone could be the boss. Ideal time to do all one could never do, but always wanted to do. Freudian Id could have a ball).

Commonwealth

A nation, state or other political entity founded on law and united by a compact of the people for the common good. It is a union of self-governing states.

(Some understanding beyond the boundaries of nations. Of course, the wealth is not common. It offers some discomfort too. The worst is when one gets kicked out for small mistakes or an oversight such as testing a nuclear bomb).

Communism

This is a system of government in which the state plans and controls the economy. A single party (often, the Communist Party) holds power. The state controls the property or capital while attempting to make progress toward a higher social order in which the people equally share all goods and provide services. The economic system is based on collective ownership. The system is often promoted as a classless society.

(A system where poverty is in vogue. Everyone who is poor is powerful, unless nutritionally emasculated).

Confederacy (Confederation)

A political union of persons, parties including states. The union will be under a treaty that creates a central government with limited powers; the constituent entities retain supreme authority over all matters except those delegated to the central government.

(Could breed civil wars that are great fun watching from outside. Media will have a rollicking time).

Constitutional

This is a government by or operating under a constitution that will be the authoritative document for governance under law. The constitution sets forth the system of fundamental laws and principles that determines the nature, functions and limits of that government.

(Enforcement capability could be the missing key).

Constitutional Democracy

In a constitutional democracy the sovereign power of the people is spelled out in a governing constitution.

(Is there any other democracy? There was, when King Louis XVI and his Austrian wife (oops, queen) Mary Antoinette were guillotined. That is plain democracy. No fillings or toppings. But in the overall, democracy is the best bet, they say. Well, who?)

Constitutional Monarchy

In a constitutional monarchy there will be a monarch who will be guided by a constitution. The rights, duties and responsibilities of the monarch will be spelled out in written law or by custom.

(It is always nice to be a monarch. One could wear a crown with shining metals and stones. These crowns end up in a museum after the people take over. It is less risky to be under the constitution. No guillotine to fear except the hanger's lasso).

Democracy

In a democracy the people are supreme. The power is with the people. It is usually exercised indirectly through a system of representation and delegated authority, which is periodically renewed.

(Go back to constitutional democracy. See something? It is majority rule and the minority gets kicked till they become the majority. Ultimately, everyone gets kicked. The money goes to the people—some of them).

Democratic Republic

A state in which the supreme power rests in the body of citizens entitled to vote for officers and representatives responsible to them.

(See again, democracy and constitutional democracy. Not much of a difference except in the way the kicks are delivered. The elected representatives kick each other and those who elected them.)

Dictatorship

A form of government in which a ruler or small clique wield absolute power (not restricted by a constitution or laws).

(A single person or dirty dozen (gang) democracy. The majority is the minority. Often the minority (one of a few) has a good time till the superstate intervenes and creates a bigger mess. That is super dictatorship).

Ecclesiastical

A government administrated by a church.

(Amen).

Federal (Federative)

A form of government in which sovereign power is formally divided—usually by means of a constitution—between a central authority and a number of constituent regions (states, colonies or provinces) so that each region retains some management of its internal affairs. It differs from a confederacy in that the central government exerts influence directly upon both individuals as well as upon the regional units.

(And all of them sing the same national anthem in different accents).

Federal Republic

This is a state in which the powers of the central government are restricted and in which the component parts (states, colonies or provinces) retain a degree of self-government. Ultimate sovereign power rests with the voters who chose their governmental representatives.

(They too have a national anthem and central flag to show off on occasions).

Maoism

The theory and practice of Marxism-Leninism developed in China by Mao Zedong (Mao Tse-tung), which states that a continuous revolution is necessary if the leaders of a communist state are to keep in touch with the people.

(Imagine, making a Merc at five hundred dollars and selling at half the price!).

Marxism

This refers to the political, economic and social principles espoused by 19th century economist Karl Marx. He viewed the struggle of workers as a progression of historical forces that would proceed from a class struggle of the proletariat (workers) exploited by capitalists (business owners), to a socialist “dictatorship of the proletariat” and finally, to a classless society—communism.

(It is time to think about societies with a touch of class rather than the impossibilities of classlessness, comrade).

Marxism–Leninism

An expanded form of communism developed by Lenin from doctrines of Karl Marx; Lenin saw imperialism as the final stage of capitalism and shifted the focus of workers' struggle from developed to underdeveloped countries.

(Not yet understood. Even by the workers).

Monarchy

This is a government in which the supreme power is lodged in the hands of a monarch who reigns over a state or territory, usually for life and by hereditary right. The monarch may be either a sole absolute ruler or a sovereign—such as a king, queen or prince—with constitutionally limited authority.

(Slightly different from the original constitutional monarchy. Still, the crown is there. It is nice to be a monarch, but never the second son, least the daughter. Chose another job in that case—fashion designer?).

Oligarchy

Oligarchy is the government of a few. The control is exercised by a small group of individuals whose authority generally is based on wealth or power.

(That is till the wealth lasts).

Parliamentary Democracy

This is a political system in which the legislature (parliament) selects the government—a prime minister, premier, or chancellor along with the cabinet ministers—according to party strength as expressed in elections. Under this system, the government acquires a dual responsibility: to the people as well as to the parliament.

(Another form of democracy with the same confusion).

Parliamentary Government (Cabinet–Parliamentary Government)

This is a form of government in which members of an executive branch (the cabinet and its leader—a prime minister, premier, or chancellor) are nominated to their positions by a legislature or parliament and are directly responsible to it. This type of government can be dissolved at will by the parliament (legislature) by means of a no confidence vote or the leader of the cabinet may dissolve the parliament if it can no longer function.

(Another form of democracy with more elaborate confusion. Some people prefer it to other forms of democracy based on attitude).

Parliamentary Monarchy

This refers to a state headed by a monarch who is not actively involved in policy formation or implementation (i.e. the exercise of sovereign powers by a monarch in a ceremonial capacity). True governmental leadership is carried out by a cabinet and its head—a prime minister, premier or chancellor—who are drawn from a legislature (parliament).

(Where the monarch loves to rest in comfort, and the rest is taken care of. This is the safest choice for a monarch).

Republic

This is a representative democracy in which the people's elected deputies (representatives), not the people themselves, vote on legislation.

(Ever read Plato's "Republic?" If not read it first and see it for yourself).

Socialism

This is a form of government in which the means of planning, producing and distributing goods is controlled by a central government that theoretically seeks a more just and equitable distribution of property and labour. In actuality, most socialist governments have ended up being no more than dictatorships over workers by a ruling elite.

(A big joke).

Sultanate

Similar to a monarchy, but a government in which the supreme power is in the hands of a sultan (the head of a Muslim state); the sultan may be an absolute ruler or a sovereign with constitutionally limited authority.

(What a life! You got to be a Sultan to know it, with all those djinns and tonic around).

Theocracy

A form of government in which a Deity is recognised as the supreme civil ruler but the Deity's laws are interpreted by ecclesiastical authorities; a government subject to religious authority.

(Really speaking most of the governments are theocratic since the heads are no less than deities).

Totalitarian

A government that seeks to subordinate the individual to the state by controlling not only all political and economic matters, but also the attitudes, values and beliefs of its population.

(Heard that before? The only difference is that the impositions are not applicable to those who impose them).

United Nations

This is global governance under a charter that is agreed upon by the member states. The term is different from the United Nations, the organisational entity that attempts to practice the concept. Such governance will have occasional dissociations and deviations besides differences in opinions but in the long run may promote the concept of global security.

(The only governmental system with an approved stockpile of the world's most powerful weapon of mass destruction—the veto power to resist change).

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