



# POLES

WINNERS AND LOSERS IN THE  
HISTORY OF HUMAN DEVELOPMENT

Alastair M. Taylor & Angus M. Taylor

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## INTRODUCTION

*Those who cannot remember the past are  
condemned to repeat it.*

— George Santayana

The countries of the North have almost always defined the South's interests from an exclusive Northern perspective. In transferring technology, installing infrastructure, and introducing governance, movement has invariably been in the same direction: from North to South. Invariably, "progress" has been equated with the historical experiences and attainments of the North (see Head 1991). Such a hegemonic process was accompanied by the North's attitude of superiority and arrogance. It led to political colonialism in the past and continues today with economic neocolonialism.

How and why did this asymmetrical relationship arise? Did North and South always suffer from an overall disequilibrium? Conversely, were there occasions when the North was the recipient of technological and other benefits from the South? When and how did North and South enter into a zero-sum (win-lose) relationship and what were the consequences? When and how did North and South enter into a non-zero-sum (lose-lose) relationship, thereby setting the stage for "mutual vulnerability?"

From earliest times, all societies have interacted, be it in inventions, institutions, aesthetic expression, or values. Even the most geographically remote societies have experienced cultural contacts of some sort. Given the North's epistemological orientation — including the Aristotelian tradition of two-valued logic — it has tended to evaluate these planetary encounters in terms of either/or; there is generally a "giver"

or a “taker,” a “winner” or a “loser.” In terms of game theory, societal and cultural exchanges are often perceived within a zero-sum strategy: one party wins, the other loses, and the sum of the two pay-offs is zero. However, game theory also poses alternative scenarios, in which strategies can result in non-zero-sum outcomes: either win–win or lose–lose (Rapoport 1968). Our historical overview analyzes the dynamics of societal encounters, resulting in different epochs in zero-sum and non-zero-sum outcomes.

Global history reveals two phenomena: similarities in societal structures and differences in evolution and behaviour. All societies share isomorphic properties in organizational patterns; at the same time, they exhibit marked dissimilarities in their stages of development. Within global history, in fact, we can discern quantum shifts in these developmental states.

UNIVERSAL CULTURE PATTERN — In the interplay of humans with their environment and with one another, certain fundamental needs are always present. Six needs, common to all people at all times in all places, constitute a Universal Culture Pattern (see Wallbank et al. 1992):

- *The need to make a living* — Men and women must have food, shelter, clothing, and the means to provide for their offsprings’ survival.
- *The need for social organization* — To make a living and to raise a family, a social structure is essential. Views about the relative importance of the group and individual may vary markedly.
- *The need for law and order* — From earliest times, communities have had to keep peace among their members, defend themselves against external attack, allocate resources, and protect community assets.

- *The need for knowledge and learning* — Humans have always sought to understand their physical environment — hence the advent of science — and to affect a relationship with that environment by means of tools and other forms of technology. We have also always recognized the need to transmit acquired knowledge, first orally and then in writing. As societies grow more complex, there is increasing need to preserve and transmit information by formal educational methods to as many people as possible.
- *The need for aesthetic expression* — As attested by the wall paintings in Palaeolithic caves, the arts appear to have a lineage as ancient as the human experience itself.
- *The need for normative and metaphysical expression* — Equally old are humanity's attempts to answer the "why" of its existence and to imbue it with values and goals — hence our ethics, philosophies, and religions.

These segments of the Universal Culture Pattern can be correlated with five areas that together make up a system of "mutual vulnerability" (and, conversely, might become one of "mutual sustainability"):

- *The environment* (ecosystem);
- *The economy* (including mercantilism, capitalism, and socialism);
- *The society* (including sociodemographic and migratory trends);
- *The polity* (including warfare, alliances, and geopolitical expansion); and
- *The culture* (including science and technology, values, goals, religion and philosophy, aesthetics, and patterns of behaviour).

There is considerable value in using this kind of approach to study societies and cultures, and we use it throughout this

book. It enables us to view societies as “systems,” with all segments of the pattern interlinked and interacting. Also, as cultural anthropologists have demonstrated, by focusing on the totality and innate worth of a given society, it helps us to minimize the ethnocentric bias that results from our own cultural conditioning, a bias to which we in the North have been all too prone.

QUANTUM SHIFTS IN GLOBAL SOCIETAL EVOLUTION — Within this universal structure of isomorphic properties inherent in all societies, whether ancient or contemporary, we find at work an evolutionary process of continuous, open-ended change. For over 3 million years, our species has interacted with the planetary environment. Societies have evolved from the relatively simple food-gathering level of organization — the Palaeolithic — to the complex level of global organization into which we are now moving. At the same time, within this continuum of evolution can be found major discontinuities, sometimes called “revolutions.”

For example, after hundreds of thousands of years of food-gathering, accompanied often by a nomadic way of life, our Stone Age ancestors learned how to domesticate various plants and animals. These “inventions” heralded what may well have been the most far-reaching revolution in human history: a quantum shift to the Neolithic state of societal organization, with its advent of herding and farming, and the emergence of villages, a host of household crafts, and a much more complex division of labour. The subsequent transplanting of these Neolithic attributes to the rich bottom lands of certain rivers in the Old World — the Tigris–Euphrates, Nile, Indus, and Huang-ho — resulted in yet another quantum shift, sometimes called the Urban Revolution, where great riverine civilizations emerged. Later, in the New

World, still other complex urban societies arose in Central America and the Andes. Irrigation and other technics enabled all these hydraulic civilizations to acquire still greater control of their respective environments, resulting in an exponential increase in population, new urban modalities of social structure, the advent of bureaucratic states, and a theocratic worldview, expressed in religions, architecture (often pyramidal), and hierarchical systems of government.

Meanwhile, as from the second millennium BC, Indo-European peoples equipped with iron technology spread over much of Eurasia, creating thalassic city-states and subsequent empires. Eventually, there arose in the West a Graeco-Roman world-state, encompassed by space-controlling technics (including road and transport networks). This immense civilization, stretching from Britain to the Tigris–Euphrates and the Sahara, was to become the progenitor of the North. It emphasized a view of reality that was based upon two key Greek concepts: *logos*, which perceived reason (logic) as the guiding principle to account for the cosmos and humanity (microcosm), and *metron*, the application of measurement to the phenomenal world.

By combining *logos* and *metron*, we obtain a basic key to the thought processes of the Greeks and Romans, and subsequently of the inhabitants of the North: namely, the application of reason to a universe that is measurable. Hence the emphasis upon quantification, subject–object forms of logic, and the scientific method of observation and description. From a rigorous application of this conceptual approach evolves in time the scientific and technological knowledge that would usher in the Industrial Revolution and, with it, the North’s quantum leap to global technological, economic, and political hegemony.

There were six key factors responsible for, or accompanying, these major societal quantum shifts to new levels of organization, and the emergence of new attributes, skills, and goals (see Taylor 1985):

- Major scientific discoveries and technological inventions;
- Increased capability to control and alter the environment;
- An exponential increase in population;
- An unprecedented increase in societal complexity (division of labour);
- A transformation of concepts of reality (worldview); and
- Profound aesthetic innovations (such as art and architecture).

Interacting systemically, these factors are found in each of the major revolutions in the society–environment nexus. They are also present and responsible for yet another major quantum shift in our own century. Moreover, for the first time in world history, this societal transformation is taking place on a global scale, simultaneously affecting every society and leaving no culture unscathed.

More scientists and technologists are alive today than have lived over the whole of previous history, and life in all societies has been revolutionized by their discoveries and inventions. One such invention, the airplane, has increased humanity's environmental control from two dimensions to three, thereby ushering in the Space Age with all its attendant implications.

After more than 3 million years, the world's population was around 1.7 billion in 1900; by the year 2000, that figure will have virtually quadrupled. This exponential demographic increase has been matched by an increase in societal complexity that requires all the high-tech factoring that can be mustered just to operate our unprecedentedly large national and international systems.

The traditional worldview of every society and culture is under intense scrutiny and undergoing radical transformation by a variety of agencies and in a variety of directions. This conceptual and normative transformation is accompanied and reflected by explorations and innovations in all the arts. The search for new, appropriate aesthetic canons is never-ending.

The planet's polarization into South and North was not happenstance. To understand the genesis of this global bifurcation, this book provides an overview of reciprocal encounters between North and South. We start at the beginning: before human societies could be divided into South and North, before humanity was poles apart.

PART 1  
NON-ZERO-SUM:  
WIN-WIN

Time frame:

Preliterate period to the advent of  
European overseas exploration  
(ca 1500 AD)

## STONE AGE SOCIETIES: BEFORE SOUTH AND NORTH

To find a readily understood analogy for the unbifurcated character of lithic societies, compared with the seismic upheavals and divisions that have marked the planet's subsequent societal history, we might turn to the initial character of Christendom. For almost a millennium and a half, there was but one Church throughout western Europe, its capital in Rome. It was universal ("catholic"), and its theology, priests, and pilgrims moved freely across tribal, linguistic, and, later, national boundaries.

However, as European civilization evolved during those 15 centuries, accompanied by an increase in population and cultural complexity, the universal Church was progressively subjected to schisms from within and political and theological pressures from without. Eventually, it was bifurcated by a deep and abiding division into two rival and competing communities: Catholic and Protestant. And, until recent decades, these two communities were all too often engaged in zero-sum strategies at one another's expense. The current non-zero-sum (win-win) ecumenical movement is part of a new global appreciation of the inherent worth of the belief and value systems of all societies.

In focusing on the Palaeolithic and Neolithic stages of societal evolution, we are dealing with more than 99 percent of the time span in which humankind has existed. Its earliest forms, such as *Homo habilis*, originated south of the equator in East Africa. It is here that we find the first evidence of humankind's ability to make tools. Learning how to start and control fire enabled our ancient ancestors eventually to penetrate into the highest latitudes and to move

from their African heartland onto every continent. New techniques for making fire and flint tools would have spread from one community to another. This evolution, with its accompanying miniaturization of flints from all-purpose hand axes to microliths, can be found in all continents. It attests to a lithic “one world” — a world where there was a continuous exchange and assimilation of stone and related technologies, together with societal institutions, values, and religious concepts.

A quantum societal shift occurred only some 10 thousand years ago, when humanity added to its food-gathering capabilities the means to produce food — in short, a shift from being primarily a hunter to being also a cultivator. The advent of Neolithic societies progressively affected the older and simpler communities so as to superimpose the cultures of the herder and the farmer wherever environments were conducive to humanly produced foodstuffs. Expansion of the Neolithic stage of societal organization might well be bounded by physiographic and climatic factors. Such is the case with the Canadian Shield and the regions beyond the tree line, which had to remain the habitat of the food-gathering Dene and Inuit peoples. Otherwise, the new way of life became dominant throughout the world.

**THE ENVIRONMENT** — In lithic societies, technologies were too weak to be able to degrade the environment to any great extent (although prolonged hunting coupled with major climatic changes could have destroyed some species). This was a period when humanity was primarily adapting to the natural environment; lithic religious beliefs and values — derived from an animistic worldview — emphasized homeostatic (negative feedback) forms of behaviour toward “Mother Earth.” As well, small populations of lithic bands

and communities existed in vast spaces. To employ a phrase from Tennyson's *Ulysses*, theirs was a world "whose margin fades forever and forever when they move" — a world with a seemingly boundless physical frontier and limitless resources, constituting an environmental endowment capital from which the interest much more than met their physical needs.

**THE ECONOMY** — The shift from Palaeolithic food-gathering to Neolithic food-producing economies represented a profound increase in humanity's ability to control and exploit its planetary environment. This increased control gave rise in turn to much larger sustainable populations (now living in village communities) accompanied by an unprecedented exchange of products. Lithic economies remained basically self-sufficient and were locally oriented.

**THE SOCIETY** — During the long reign of lithic society, there was a gradual evolution from the original nuclear to the extended family, thence to the clan and the tribe. Neolithic villages were much more complex than Palaeolithic bands, as manifested by an increased division of labour (with the women tending the garden plots and using the new Neolithic crafts, including weaving and pottery). Basically, lithic societies had an egalitarian structure, with the chief or village head regarded as *primus inter pares* — "first among equals." These societies were often matrilineal; some scholars believe that women enjoyed their highest status in history during the Neolithic period.

**THE POLITY** — Ethical behaviour consisted of not violating custom. The close relationships existing in extended families and clans encouraged conformity. Justice operated to

maintain equilibrium. For example, when theft disturbed the economic balance, justice was achieved by a settlement between the injured person and the thief. Older tribal members would play a dominant role in decision-making because of their greater experience and knowledge of the group's customs. Because of the strong element of personal participation, this early form of government has been called "primitive democracy."

THE CULTURE — We find all segments of the Universal Culture Pattern represented in lithic societies. Although their technologies were simple — based on symbiotic relationships with the natural environment — they did provide what were probably the most revolutionary advances in the human-environment nexus. The domestication, in both the Old and New Worlds, of many plants and animals set the food and economic patterns for all subsequent societal systems. We are the beneficiaries of their inventions of primary tools, pottery, and weaving. Palaeolithic animal paintings, carvings, and Neolithic geometric designs in pots and blankets attest to lithic aesthetic expression on a global scale. Their religious rituals, dances, and animistic beliefs related humans to all other manifestations of nature. Hence their emphasis upon maintaining a dynamic equilibrium with the natural environment and among all members of society.

To summarize, many of our basic institutions, tools, behavioural patterns, and forms of expression have their genesis in Stone Age societies. So many, in fact, that they can properly be regarded as the foundation for all later cultures and civilizations.

Two important factors must be recognized. First, lithic societies preceded any bifurcation into South and North.

This period was truly global in its geographical expansion and settlement; the need to transcend the South–North dichotomy should be interpreted as redressing an aberrant bifurcation that occurred in modern times. Second, the developments and contributions for which our lithic ancestors were responsible were non-zero-sum in character: all human communities were the “winners” in this stage of societal organization and expression.

Today, we are finding parallels with, and new respect for, these Stone Age societies. We are rediscovering the dynamics and unique aesthetic expression of so-called primitive art, mythology, and symbolism. We are reappraising “primitive democracy” and, especially, the status of women in lithic society. For ecologists and others, there is a strong and deep respect for this society’s holistic view of humanity’s interdependent relationship to all other species in a shared global environment.

ARCHAIC CIVILIZATIONS:  
PROGENITORS OF THE SOUTH

In North Africa and Eurasia, Neolithic peoples penetrated into several major river systems: the Nile, Tigris–Euphrates, Indus–Ganges, and Huang-ho. In terms of our societal taxonomy, another quantum shift (or revolution) results from linking transformations in physical location, energy source, economic activity, size of population, social organization, and political structure — the emergence of urban settlements. The localization of Neolithic peoples in these river valleys — and again, much later, in various constricted localities in the Americas — eventually resulted in the use of large amounts of water through the invention of hydraulic technologies, thereby generating a massive increment of energy.

Concomitantly, a number of significant developments occurred:

- The appearance of large-scale farming or “agriculture” (in contrast to Neolithic small-plot “horticulture”);
- An unprecedented demographic increase, which could henceforth be supported, and consequently an increase in the complexity of social structures and the division of labour;
- The creation of new political elites and bureaucratic structures; and
- The rise of towns, accompanied by a shift in political and economic decision-making from the countryside to these new “settlement nodes.”

In short, humanity reached a stage of societal development to which the term “civilization” has been traditionally applied (civilization from *civis* meaning “citizen,” referring to an urban inhabitant). This urban character required the

performance of specialized functions to meet the proliferating needs of the men and women living in the new socio-cultural environment. In turn, this created a shared corpus of urban-oriented values, a behavioural pattern distinct from the countryside, and a mind-set and worldview markedly different from the Neolithic antecedents.

**THE ENVIRONMENT** — Archaic civilizations are notable for their technological advances, especially in the management of water resources, such as irrigation networks, water-raising devices, and canals and ditches diverting water from a river's main stream, or, as in Inca Peru, conveying water long distances from mountainous regions. These water-management technics enabled large hydraulic civilizations to emerge, and to do so while causing minimal environmental damage, so that they were able to persist for millennia.

**THE ECONOMY** — Because of their greater capability for environmental control, archaic civilizations were able to develop more complex and productive economies, supporting much greater populations. For example, whereas 100 families required 1 200 hectares in a Neolithic slash-and-burn system of cultivation, the same area could support 2 to 3 thousand families in a completely irrigated form of agriculture. Flourishing trading patterns linked the hydraulic societies of the Nile, Tigris-Euphrates, and Indus, resulting in a continuous exchange not only of commodities but also of knowledge.

**THE SOCIETY** — A 180-degree switch occurred from the earth-oriented worldview of lithic societies to a sky-oriented paradigm of reality, and from a basically egalitarian social structure to one that was hierarchical and patri-

lineal. The rise of towns was accompanied by an increased division of labour and resulted in the territorial concept predominating over biological (kinship) ties in socioeconomic relations. Societies in both the Old and New Worlds embraced theocratic worldviews.

**THE POLITY** — Consequently, these civilizations were theocracies. Sociopolitical structures were pyramidal; the divine fiat descended from on high. The division of labour now included standing armed forces and, in time, there was a tendency to shift toward military states. The first law codes also appeared during this stage — among them, the Code of Hammurabi.

**THE CULTURE** — Many major sociocultural contributions to the Old and New Worlds came from archaic civilizations. To name a few:

- The advent of hydrology (irrigation systems, etc.);
- The use of metals (copper and bronze);
- New methods of spatial measurement (land boundaries);
- New forms of time reckoning (calendars);
- Advances in astronomy and mathematics, and the advent of the “protoscientific” method;
- Greater diversification and use of prime movers (energy); and
- The invention of writing materials and systems.

These technological advances were accompanied by major societal innovations and changing worldviews or paradigms of reality. Again, to name only a few:

- *Social* — A new emphasis upon male dominance in social structures and rights; increased social stratification; greater concern for property rights.

- *Economic* — Increased division of labour; the territorial concept predominating over biological (kinship) ties in socioeconomic relations; the advent of urbanism.
- *Political* — Emergence of the state; strong theocratic cast given to kingship (god-kings, “mandate of heaven”); centralization of power and new decision-making and bureaucratic elites; territorially based polities; the institutionalization of warfare.
- *Religious* — A strong conceptual shift to celestial deities and cults; goal-oriented eschatological concepts of time and belief; the emergence of hieratical elites.
- *Aesthetic* — New architectural and sculptural forms, including a marked emphasis upon the vertical axis (zig-gurats, pyramids, stupas, and pagodas), rectilinearity, and monumentality of expression.

In summary, this new stage of societal organization and environmental control was not only much more complex than its predecessor but also built in turn upon lithic foundations. At the same time, and in keeping with systems theory, the new level of organization was accompanied by a proliferation of emergent and unique attributes. The net result of all this creativity was, again, a non-zero-sum, win-win situation for humankind as a whole. These archaic civilizations were the direct progenitors of today’s societies of the South, with the oldest, continuous, and hence most populous of them being in India and in China.

## CLASSICAL GREECE AND ROME: PROGENITORS OF THE NORTH

During the second millennium BC, iron-equipped Indo-European peoples swept out of central Asia. Some pushed through the Khyber Pass into India; these "Aryan" invaders put an end to the already tottering Indus civilization. Others moved southwest into Iran. Still other groups penetrated westward to the Black Sea and eastern Europe, some to migrate northward up the rivers of Russia, others along the Danube and Rhine valleys and into Atlantic Europe. Meanwhile, Indo-European bands also settled on the northern littoral of the Mediterranean, in particular, the Greek and Italian peninsulas.

All of the Indo-European peoples interbred in the West with the Neolithic indigenes whom they encountered. As a result, new cultural loci evolved, as demonstrated by various major branches of the Indo-European family of languages: Graeco-Italic, Celtic, Germanic, and Slavic. These emergent societies derived various technics from the older riverine civilizations. But also, a mixture of environmental factors and self-generated responses resulted in new societal structures and value systems. A new model of reality emerged and was responsible for yet another major societal quantum shift within that geocultural sphere we now call the North.

From the standpoint of human geography, this societal revolution could be described as a shift in the Old World from riverine or one-dimensional environmental-control systems to two-dimensional systems — systems that would eventually result in thalassic (sea-based), oceanic, and continental geopolitical societies. In effect, this stage of societal evolution reaches the point where humanity, armed

with new technologies, is able to cover and lay claim to the entire surface of the globe. From the equator to the poles, humans become able to exploit as never before the hinterlands of every continent. The next geosocietal quantum shift would occur in the 20th century, when the invention of the airplane ushered in three-dimensional environmental control and, with it, the Space Age.

The evolution of Greek thought has been analyzed by John Finley (1966) in terms of four stages or "minds." The Heroic Mind was the stage of Homer and the epics in a world made bright by our sensory perceptions, in which humans are portrayed at handgrips with destiny, struggling to win a noble prize. The Visionary Mind is associated with the firm establishment of city-states and reflects a more complex kind of society. After the Persian Wars, Athens entered the stage of the Theoretical Mind, which called for analytical powers that looked beneath the visible surface, such as Thucydides did in his analysis of the causes of the Peloponnesian Wars. The final stage, the Rational Mind, is encountered in the 4th century BC with Plato and Aristotle. This stage marks the triumph of concepts of rational order. As described by Finley (1966, p. 93),

The consequences of this view [Rational Mind] are virtually limitless. It enthrones order at the centre of things. It makes the mind's task one of discerning order by dialectic, with entire confidence that what the mind perceives will not contradict but further clarify the regnant scheme. It closes the breach between animate and inanimate nature, because each will be seen to take its due place in the mighty system. In sum, it gives assurance that the seemingly infinite variety of the world is not in fact wild and ungoverned but open to understanding and hence to control.

It is Rational Mind that became the dominant agent in articulating the Greek worldview. To further our understanding of this paradigm, we can single out three terms: *logos*, *metron* (mentioned earlier), and *aretê*.

As explained by the famous Greek scholar, Gilbert Murray (1953, p. 28),

[Logos] is the most characteristic word in the Greek language.... It represented the Greeks' instrument for finding out what is true and just.... It lies at the heart of philosophy, science, religion. Everything in the world has a Logos, it says something, means something.... If we listen carefully we can understand.

The second term, *metron*, means "measure." From the same Indo-European linguistic root came two words, the Sanskrit *maya* and the Greek *metron*. In the view of many scholars, these words represent a conceptual parting of the ways between Eastern and Western approaches to the nature of reality.

The Eastern route has been described as *philousia*, the study of essential being (Hass 1956). In this approach, *maya* recognizes the significance of measurement in connection with understanding the phenomenal world. However, it underscores the Indian view that it is an illusion to suppose that the supraphenomenal world can be measured in terms of the physical senses, as it is not subject to the constraints of time and space. So, *philousia* concerns itself with being and pure continuity, which defies categorization and measurement in phenomenal terms.

In contrast, the Greeks involved themselves in *philosophia*, which called for an emphasis upon factual knowledge of the phenomenal world. Hence the central value of *metron* to measure and comprehend the world of matter. When we combine *logos* and *metron*, we obtain a basic key to Greek and subsequently Western thinking: reason should apply itself to a cosmos that is largely measurable. It is this emphasis upon logic, quantification, and the scientific method that societies of the North were to use in constructing their epistemologies and technologies.

Humans are not only reasoning creatures, they have a special worth or virtue: *aretê*. Their nature finds fulfillment in certain ends. To do so, they must develop their *aretê*, or inborn capabilities, as far as possible. This calls for knowledge and the full development of the individual within a social framework. As explained by Bowra (1958, p. 199), because of this sense of human worth and its potentialities,

The Greeks believed in liberty, since only the free can fully recognize their natures; and they were quite logical in doubting whether a slave can have *aretê* in any real sense, since he is not free to be himself as he would wish to be.

However, among the free, *aretê* requires that the virtue and worth of other individuals be recognized. Therefore, it calls into play the concepts of equity and social recognition.

In combining *aretê* and *logos*, we obtain a reliance upon reason and discourse among equals in the resolution of problems. These concepts in turn form the basis for democracy, government by the people, with decisions being taken by the majority — that is, where consensus is found among the greatest number of reasoning beings. The concept of *logos* — order and reason responsible for everything in the cosmos — and the special worth of humans as reasoning creatures capable of understanding the cosmos and of making rational decisions combine to represent a view of reality and a body of values altogether different from the theocratic, pyramidal paradigm of the archaic civilizations.

The Greeks adhered to this triad of concepts. In early modern times, however, Galileo and successor scientists would maintain the marriage of *logos* and *metron* but not concern themselves with the inclusion of *aretê*; they were unable to quantify “worth” or “virtue.” As a result, the North came to espouse so-called “value-free” science.

**THE ENVIRONMENT** — The Graeco-Roman world-state maintained a dynamic overall equilibrium with its far-flung environment. The Greek city-states cultivated small plots in an essentially mountainous terrain and directed their attention to using seagoing vessels to exploit the Aegean (including founding colonies on its many islands). The Romans explored and settled on an intercontinental scale, but again, the environment for the most part retained its ecological balance and sustainability (see Heichelheim 1958).

**THE ECONOMY** — The Greek city-states were initially local in size; however, at a later stage, Athens acquired an empire and created daughter city-states as distant as the Black Sea and southern Sicily. In so doing, it initiated a Mediterranean economic market (as did the Semitic-speaking inhabitants of Phoenicia and Carthage). The Roman Empire incorporated this Mediterranean economic structure and expanded from there: north across the Alps to the Baltic, the Atlantic, and Britain; south into the Saharan regions (while also annexing Egypt); and east to the Tigris–Euphrates (and its Mesopotamian civilization). By 600 BC, the Mediterranean world was making use of coined money. This created a new class of merchants trading in numerous specialized wares, including wines, animals, metal goods, grains, textiles, pottery, and slaves.

**THE SOCIETY** — The fusion of Indo-European newcomers with Neolithic indigenes was to alter the original culture pattern permanently by creating new communities throughout Europe. Over the centuries, these would evolve into a mosaic of distinctive cultures and vernacular tongues, thereby setting the stage for the eventual emergence of nation-states. Protagoras had pronounced “Man is the

measure" (*metron*). So, in keeping with the Greek worldview, we find an anthropocentric type of society, in contrast to the theocentric societies of archaic civilizations.

**THE POLITY** — The compact size of the Greek city-state encouraged men to participate directly in politics (which derives from *polis*, or city). Four major types of government evolved in most city-states: limited monarchy, tyranny (one-person rule), oligarchy (rule by the few), and democracy (rule by the people). All too often, city-states reverted to oligarchy or tyranny; but the democratic concept represented a legacy of incalculable political and normative significance for the future.

The Romans succeeded in moving to a supra-*polis* level of sociopolitical organization. By developing a superb military and naval capability, they acquired authority first over the western basin of the Mediterranean and then over the eastern basin and transalpine Europe, thereby eventually establishing an imperium extending from Britain to Mesopotamia. Unlike Greek attempts at empire-building, the Roman Empire endured, with its centuries of Roman Peace (*Pax Romana*). The eventual disappearance of the Empire left a void. Medieval Europe attempted, with Charlemagne, to fill this void, but failed. Today, the leaders of the European Community seem bent on succeeding where their ancestors failed.

**THE CULTURE** — In Shelley's words, "We are all Greeks." This summarizes poetically the enormous debt that the North owes to its Graeco-Roman antecedents. All segments of the Universal Culture Pattern experienced quantum shifts: in philosophy, law, literature, sculpture, architecture, mathematics, medicine, scientific methodology, and technology.

The Roman technological achievement is an excellent example.

The Romans laid down highways that were monuments of engineering skill. They facilitated the movement not only of troops but also of trade and information. Completed over five centuries, this communications system extended into every province of the Empire; Roman roads eventually covered a distance equivalent to 10 times the Earth's circumference at the equator. By eliminating curves, bridging rivers, and cutting through hills, the Roman highways made possible a speed of travel that was not to be equaled, far less surpassed, until the advent of the Industrial Revolution. Also, for a civilization filled with urban nodes, the Romans engineered spectacular aqueduct systems. That for Rome itself consisted of 14 aqueducts stretching a total of 425 kilometres and supplying some 225 litres of water daily for each inhabitant. In addition, the Romans applied agricultural, surveying, and related technics to maximize environmental development and the exploitation of regional resources. This Graeco-Roman civilization was indeed the progenitor of the North.

## SOUTH MEETS NORTH: THE FIRST ENCOUNTERS

One of the most fascinating and enduring epochs of cultural contact to the mutual advantage (non-zero-sum) of all parties was the tripartite interchange of trade and culture in classical times among imperial Rome, India, and Han China. Contacts between the western, southern, and eastern segments of Eurasia had progressively increased after 334 BC, when Alexander the Great invaded Asia, until a chain of intercommunicating states stretched from the Atlantic to the Pacific. Emperor Augustus established direct commercial transactions by sea with ports in India and Ceylon, taking advantage of recently discovered monsoon and counter-monsoon winds blowing across the Arabian Sea. The Romans sought luxury goods, while Christianity also reached the Indian subcontinent about this time. Meanwhile, contacts had been established between India and China, with Mahayana Buddhism spreading into East Asia.

The third leg of this triangular societal-cultural network was the famous Silk Road, which pierced the vast land barrier separating the Chinese and Graeco-Roman world-states. The Chinese made the first move to breach this barrier when the Han Emperor Wu Ti sent his armies across the Pamir Mountains to a point near Khojend, the northern limit of Alexander the Great's empire. Shortly after 100 BC, silk began arriving in the West, transmitted by the Parthians. When the Chinese moved back across the Pamirs, the Kushans of India became the intermediaries, selling silk to the Parthians and later to western merchants coming by sea to India. It was not until about 120 AD that the Parthians allowed some western merchants to cross their land.

The resulting information about the Chinese was soon used by Ptolemy in constructing his map of the world.

To satisfy the Roman world's insatiable appetite for luxury goods, its trade with the East grew immensely in the first two centuries AD. But because Roman exports of wool, glass, linen, and metalware did not match in value the Empire's imports of silk, perfumes, spices, gems, and other luxuries, the western end of the axis suffered seriously from an adverse balance of trade. Gold and silver had to be continually exported to Asia. Pliny estimated that India, China, and Arabia drained away annually at least 100 million sesterces and declared "That is the sum which our luxuries and our women cost us!" The discovery of large hoards of Roman coins in Indian ports supports Pliny's estimate, and this drain appears to have been a factor in the Roman world's economic decline in the 3rd century AD. Nonetheless, the overall effects of the tripartite exchange of trade, culture, and information between South and North resulted in a mutual win-win outcome.

## THE SOUTH'S CONTRIBUTIONS TO THE MODERN WORLD

In his *Novum Organum* (1620), Francis Bacon, champion of Europe's scientific revival, noted the revolutionary impact of three inventions: printing, gunpowder, and the compass.

For these three have changed the appearance and state of the whole world: first in literature, then in warfare, and lastly in navigation; and innumerable changes have been thence derived, so that no empire, sect, or star appears to have exercised a greater power and influence on human affairs than these mechanical discoveries.

What Bacon did not know, apparently, was that all three discoveries originated in China.

It was during the late Middle Ages that Europe received from Asia many of the technical innovations that helped break the mould of feudalism and lay the foundations for the emergence of capitalism. As a system of social relations and material production, capitalism, in its various forms, has dominated the world's history ever since. The emergence of capitalism, in turn, paved the way for the scientific revolution of the 16th and 17th centuries. Yet, what we are talking about is not a simple linear progression of cause and effect. It is a complex interaction among social relations, technological forces, and scientific and philosophical ideas that, over a period of several centuries, brought into being a new kind of society and culture. Although this revolution was not completed until much later, it began during the late Middle Ages, triggered to a large extent by the technical advances of that time.

In the 3rd century AD, with the fall of the Han Dynasty in China, turmoil in India, and the decline of the Roman Empire, the links among these civilizations were seriously disrupted. It was not until a thousand years later that

east–west contacts were restored on a significant scale. In Europe, little knowledge about the outside world had been added since the time of Ptolemy, and much had been lost. At the time of the Crusades, knowledge of those parts of Africa and Asia that lay beyond the fringes of the Mediterranean was extremely limited and liberally interlaced with myth. Even less was known about China than about India. Medieval geographers usually placed Jerusalem in the centre of their world maps and enlarged the area of Palestine disproportionately to accommodate all the biblical place names. There was debate about whether the Southern Hemisphere and the hot tropics were even habitable.

The entire situation was radically altered in the 13th century. Like whirlwinds, the nomadic Mongol tribes of central Asia struck out in all directions, looting and conquering, and creating the largest empire the world had yet seen: a vast realm that extended from eastern Asia into eastern Europe. The Mongol Empire's significance lay not so much in its direct political effects, for these were fairly short-lived. Rather, it was the sudden efflorescence of contacts among the far-flung regions of Eurasia that was to have long-term importance. Increased trade and travel, with the concomitant spread of ideas and technology, were opening new horizons. Throughout the lands of the Mongols and beyond, the late Middle ages experienced a quickening tempo of cultural diffusion.

At the height of its power, the Mongol Empire stretched from the Danube to the Pacific Ocean. During the century or so of the Mongol Peace or *Pax Tatarica*, China and the East became better known than ever before to Europeans — they could no longer believe that the Mediterranean was the centre of the world. For the first time on record, Europeans crossed Eurasia to the Pacific. Travellers' accounts revealed

that the Far East not only equaled but actually exceeded Europe in population and wealth.

The Mongol era saw an increase in communication between scientists of different countries. The Yuan Court favoured Arab mathematicians to work on improving its calendar. Arab encyclopedists gave accounts of Chinese science, particularly medicine. After his conquest of Persia, Hulagu Khan had an astronomical observatory built at Maraghah, south of Tabriz. Here, astronomers from China met with persons from as far away as Spain. As might be expected of such an era, geography flourished; Kublai Khan even sent expeditions to determine the true source of the Yellow River.

But it was not the improved knowledge in fields like geography and astronomy that was of major significance for the future. Rather, it was the diffusion of applied science and the mechanical arts. This diffusion of techniques was not wholly in one direction. For example, during their conquest of south China, the Mongols imported from Mesopotamia Arab specialists in the use of siege machines, which hurled huge blocks of stone or incendiary matter into fortified enemy towns. But the much more massive diffusion of technology westward during the Middle Ages reflects the fact that, until modern times, Asia, and particularly China, was considerably more technologically advanced, and had been so for many centuries (Table 1).

PRINTING AND PAPER — The advantage of printing with movable type, as opposed to printing with blocks, is greater when working with alphabetic writing. Nevertheless, it was in China that movable type originated. Pi Shêng is credited with coming up with movable earthenware type in the 11th century. In the Mongol era, wooden type was in use in China and central Asia. But it was in Korea, where bronze was

TABLE 1  
Technologies that originated in China and  
the number of centuries they took to reach Europe.

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AGRICULTURAL TECHNOLOGY	
Breast strap harness (postilion) for draught animals	8
Collar harness for draught animals	6
Edge-runner mill	13
Edge-runner mill with water power	9
Rotary fan and rotary winnowing machine	14
Wagon mill	12
Wheelbarrow	9-10
COMMUNICATION TECHNOLOGY	
Paper	10
Printing (block)	6
Printing with movable type	4
Printing with metal movable type	1
INDUSTRIAL TECHNOLOGY	
Cast iron	10-12
Deep drilling	11
Draw loom	4
Metallurgical blowing engines (water power)	11
Piston bellows	14
Silk-handling machinery	3-13
Square-pallet chain pump	15
TRANSPORTATION AND EXPLORATION TECHNOLOGY	
Canal lock gates	7-17
"Cardan" suspension	8-9
Iron-chain suspension bridge	10-13
Magnetic compass, lodestone spoon	11
Magnetic compass with needle	4
Magnetic compass for navigation	2
Nautical construction principles	10
Sailing carriage	11
Segmental arch bridge	7
Sternpost rudder	4
WARFARE TECHNOLOGY	
Cross-bow (as an individual arm)	13
Gunpowder	5-6
Stirrup	3
OTHER PRODUCTS	
Helicopter top (spun by cord)	14
Kite	12
Porcelain	11-13
Zoetrope (moved by ascending hot-air current)	10

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Source: Adapted from Needham (1954, p. 242).

employed, that printing with movable type flourished. In 1392, the government established a Department of Books with responsibility for casting type and printing books; from 1403 there was a government foundry in existence, casting type from moulds. During the 15th century, Korea was ruled by a strong dynasty that sought to further education through printing. The books published were largely devoted to history, morals, and classical literature.

The use of metal type spread from Korea back to China, and then later to Japan. Although it is always possible that reports of Asian typography reached Europe by way of the trade routes, it would appear that the principal Asian influence on European printing was through the diffusion of paper and block printing.

The manufacture of paper from hemp, tree bark, fish nets, and rags is said to have been officially announced to the emperor of China in 105 AD; but recent evidence indicates the use of paper in that country even before this time. In Europe, paper was not manufactured for another thousand years. As with many other inventions, it was the Arabs who acted as intermediaries. In 751, Arab and Chinese armies clashed in what is today Turkestan. Among the captives carried away to Samarkand by the victorious Arabs were a number of Chinese papermakers. "Paper of Samarkand" soon became well known in the Asian lands of the Abbasid caliphate and, at the end of the 8th century, Chinese workers were brought to start a paper factory in Baghdad. When manufacture began in Damascus, that city became the centre for the export of paper to Europe.

But the secret of the actual manufacture of paper entered Europe from Muslim Spain, having reached the Iberian Peninsula through Egypt and Morocco. The first known paper mill in Christian Europe was established in 1157 in

southern France. Only gradually, however, did paper replace parchment as a writing material in Europe. It was after the arrival of printing — first from blocks and then from type — that the use of paper became general for both writing and printing.

Block printing was carried out on a large scale in Asia for centuries before the process was adopted in Europe. In the 10th century, the entire Buddhist canon, the *Tripitaka*, was printed using 130 thousand blocks, and copies of this massive work found their way from China to Japan and Korea. The work was revised and reprinted in Korea at the beginning of the 11th century. Whereas most works printed in China were Confucian, those printed in Japan during the Sung and Yuan periods were all Buddhist. Buddhist works were also printed by the Uiger Turks on China's western border.

One reason for the slowness of block printing's journey from China to Europe was the refusal of the Muslim world, which lay between, to print its literature. Block printing reached Europe sometime around 1400, possibly with card playing, which became a rage in the West in the late 14th century. Card playing had been common in China, and printed cards were probably carried west with the Mongol armies. Marco Polo and others also reported the use of printed money in China, and in 1294 at Tabriz, the Mongol capital of Persia, printed paper money was issued with text in Chinese and Arabic. The news, or even a specimen, of Chinese block printing may well have reached Europe through one or more of several routes.

**THE STIRRUP AND GUNPOWDER** — The two most important medieval innovations in warfare — the stirrup and gunpowder — both came from Asia. The stirrup appeared in primitive form in India in the 2nd century BC and was

perfected in China by the 5th century AD. The idea spread westward and, by the 8th century, arrived in the Frankish kingdom, where it was employed to advantage by Charles Martel in his organization of cavalry forces. The creation of a new class of mounted warriors became a central feature of European feudalism. The stirrup welded horse and rider into an effective fighting unit. It permitted more efficient use of the sword and bow and allowed direct assault with a lance against an enemy, without the danger of the rider falling off the horse. That the Mongols could conquer such vast territories on horseback was partly due to their use of the stirrup.

Gunpowder, which was to have such a devastating impact on the world, arose from the investigations of Taoist alchemists in China. A military handbook of 1044 describes explosive grenades. It was about the early 11th century that the rocket appeared: an arrow to which was attached a bamboo tube filled with a low-nitrate composition. With the Mongol conquests, the Arabs became acquainted with saltpetre (potassium nitrate), which they called "Chinese snow," and the rocket, which they called the "Chinese arrow." Very quickly, the use of gunpowder became known in Europe, where it was mentioned in the writings of Roger Bacon. The first European references to gunpowder composition date from about 1300.

The metal-barrel cannon appeared in both China and Europe shortly after 1300. The casting of iron from blast furnaces, which was spurred by the desire to cast iron cannon, began in Europe around 1380. Here, Chinese influence on Europe is also a possibility, for the Chinese had achieved control of molten iron many centuries earlier.

In Europe, it was the wealthy Italian republics, or kings backed by merchants, that could command the resources and technical skills required for this new military technology.

Gunpowder and cannon battered down the castles of the feudal nobility and speeded the triumph of the nation-state. Naval warfare too was revolutionized by gunpowder. But its effect was not limited to exploding the material bases of feudalism. It was written that "Nitre has made as much noise in philosophy as it has in war." The European mind was confronted with something radically new under the sun, something the ancient Greeks had never imagined. The practical problems in chemistry and ballistics that now arose were powerful stimuli to scientific thought, as Francis Bacon could fully appreciate.

THE COMPASS AND MARITIME TECHNOLOGY — Knowledge of the magnetic compass arrived in Europe from China about 1200, probably through contacts made with Arab traders. Yet, in Chinese literature there are references to south-pointing spoons carved from lodestone from the 1st century AD onward. From the 11th century, there are descriptions of a fish-shaped piece of iron that floated on water; it was magnetized by being heated red-hot while held in a north-south position. A variation was to suspend a magnetized needle on a thread of silk. The Chinese use of the compass for navigation at sea must have begun at least as early as the 10th century.

Another important Chinese contribution to sea voyaging was the sternpost rudder. In Europe, it replaced the steering oar fixed to the starboard side of the ship. Use of the sternpost rudder meant that, from the 13th century onward, deep-keeled European vessels could hold a course with their sails set closer to the wind and voyages could be made in rougher weather. Aided in turn by using the compass, roundabout coastal travel could now be replaced by direct routes across the seas. The stage was set for the 15th-century voyages of

discovery. Here, too, the problems that open-sea navigation raised for astronomers and instrument-makers became an important spur to the future development of theoretical and applied science.

OTHER ASIAN CONTRIBUTIONS — The influence of Asian technology was felt in still other ways. In Europe, almost every manor had its mill for grinding grain. Mills were also adapted for purposes such as fulling (cleansing and thickening) cloth, blowing bellows, forging iron, and sawing wood. The water mill had been invented in classical times; the windmill reached Europe, probably from Persia, about 1150. The trip-hammer and the crank, devices used in the mill mechanism for converting rotary motion to reciprocal motion, both seem to have come from China.

Early in the 11th century, a new type of horse harness reached Europe from China. For a band across the horse's chest, which constricted the animal's windpipe, the Chinese invention substituted a collar pulling on the shoulders. This greatly increased the permissible tractive effort and meant that horses could henceforth take the place of oxen at the plough, opening up new areas of workable land. Better production methods meant more surplus to exchange and, with the new harness and nailed horseshoes, the horse was now an efficient instrument of road transport. Better transportation of bulk goods meant that it was no longer necessary for each locality to produce everything for itself — land could be used to produce only those crops that were especially suited to the environment.

Other Chinese contributions to European technology include porcelain and the spinning wheel. Porcelain is a glazed pottery made possible by heating powdered felspathic rock mixed with lime to a high temperature.

It was perfected during the T'ang Dynasty and, by the 12th century, had become a principal Chinese export. However, porcelain manufacture did not commence in Europe until the 15th century, when the Venetians learned the art from the Arabs.

Of greater impact was the spinning wheel, which was imported into Europe in the 13th century. Together with the heddle-treadle loom, which may also have originally come from China, it increased the rate and lowered the cost of producing common cloth. As a result, in the 14th century, there was a great increase in the consumption of linen garments, towels, and the like. In turn, there was a growing quantity of linen rags, which provided raw material for the manufacture of paper.

Another innovation whose significance cannot be over-emphasized was the introduction of Arabic numerals. Originated in India, Arabic numerals were introduced into Europe at the beginning of the 13th century by Leonardo Fibonacci of Pisa, who had been educated by a Muslim and had traveled extensively in Egypt and Syria. With the gradual replacement of the clumsy Roman numerals, the rules of arithmetic were divested of their esoteric character. Algebra (the name is derived from an Arabic treatise) also appeared in Europe at this time. The spread of mathematical knowledge was due in no small measure to its usefulness in the growing world of commerce.

## CHINESE ORGANICISM AND EUROPEAN MECHANISM

It is obvious that imported Asian technology had a profound effect on European society. So, why did China, where most of this technology originated, not experience a similar societal transformation and, with it, the scientific revolution that accompanied this transformation in Europe? Also, what was it about medieval China that proved so hospitable to technical progress in the first place? These are complex questions with no easy answers. Nevertheless, several explanations can be offered, centring on the special orientation of Chinese thought and the special type of society in which it arose.

Indigenous Chinese philosophy was distinctive for being oriented very much to *this* world. Neither Taoism nor Confucianism assigned any place to a rational supernatural Creator. In the Taoist view, nature is not a veil behind which lies absolute reality; being eternal and self-sufficient, nature *is* reality. The Tao is the way of nature — the way nature is organized and flows, the way in which the parts of nature fit together. To know nature is to know the Tao. This is why Taoists were keen observers of the natural world and interested in understanding its functioning. The Taoist attitude toward nature was one of receptiveness, expressed in the term *wu wei*.

The Neo-Confucian synthesis brought together Taoist naturalism and Confucian social philosophy. It reconciled the Confucian Tao of society with the Tao of nature, the former now being seen as a particular manifestation of the latter. This belief that human life is ultimately rooted in nature meant that both Taoism and Neo-Confucianism encouraged scientific enquiry.

The Chinese view stressed that order and harmony are inherent in nature. According to one of the foremost Neo-Confucians, Chu Hsi, there are two basic aspects of nature: *ch'i* (or what today would be called matter-energy) and *li* (the principle of organization), neither of which exists apart from the other.

Chinese organic naturalism, although lacking in theoretical rigour, resembled nonmechanistic scientific outlooks that have developed in recent years. It concerned itself with the self-generating aspects of nature and with organic relations. In doing so, it was pointing forward to such scientific concerns as the conservation and transformation of matter-energy, biological growth and the evolution of species, electromagnetic fields, and the interdependence of parts in cybernetic, economic, and ecological systems. Yet, these were questions that could only be tackled effectively in scientific and mathematical terms beginning in the 19th and 20th centuries. In a sense, Chinese science was attempting to run before it could walk. Instead, it was in Europe and through the mechanistic model of the world that modern science arose.

Where the European conception differed most from the Chinese was in its rejection of naturalism. According to Aristotle, all movement in nature is inspired by the existence of immaterial forms, which are the thoughts of God. In the 13th century, Thomas Aquinas crowned the scholastic synthesis by integrating Aristotle's teachings within the framework of Christian theology. In the previous century and at the other end of Eurasia, Chu Hsi had conceived of motion and form as intrinsic aspects of a self-generating natural world. In contrast, St Thomas endeavoured to show that the system of nature depends upon the creative act of a God that transcends it. Human beings, he argued, by divine gift share to some extent in the transcending of nature.

This incipient split between form and matter, between spirit and nature, was to be carried much further at the beginning of the scientific revolution, to the point where nature was seen as a clockwork mechanism set in motion by a divine clockmaker. The laws decreed by God for His creation could be read through an examination of nature, no doubt suggesting that they could be expressed mathematically. In contrast, the idea of a Creator laying down "laws of nature" remained foreign to Chinese thinkers. To the Chinese, ingenious as they were technologically, nature was much too subtle to be captured properly in mechanical terms — nature's parts ordered themselves spontaneously.

Just why European thought in the late Middle Ages was moving toward a new conceptual paradigm, while Chinese thought was not, cannot be explained without looking at the wider social and economic contexts of the two outlooks. The most significant feature of European society at this time was the incipient growth of capitalism in the towns, abetted by the influx of Asian technology. The values and behaviour of feudalism were rapidly giving way before the logic of trade and commerce. Merchant culture was above all practical — in the towns, wealth, and that which promoted the accumulation of wealth (including skill in the mechanical arts), was likely to count for more than noble birth. Politically and culturally, the town came to be dominated by the merchant class, together with lawyers, doctors, and the like. Knowledge of arithmetic and bookkeeping was likely to be important for those wishing to get ahead in the world, and the medieval townsman became increasingly aware of quantitative measurements. The perception of space was changed by the organization of new towns, which were often founded on quadrilateral or concentric plans. The townsman's perception of time became regulated less by the

movements of the natural world and more by the precise requirements of business life. The mechanical clock first appeared in 1309 at Milan and, before long, had spread throughout Europe, accompanied by workers skilled in clock-making and repair. The proliferation of machinery and the increasing mechanization of everyday life could not help but make a deep impression on the consciousness of urban populations.

In Europe, the concept of a divine lawgiver went hand-in-hand with the experience of law giving by earthly rulers. And this conceptual link was no doubt strengthened as the medieval towns allied themselves with the growing power of royal authority. Furthermore, the whole European experience of diverse, competing kingdoms and city-states was quite different from the organic view that the universe is characterized by spontaneous harmony and cooperation.

The Chinese city or town never attained the relative independence of its European counterpart. In Europe, the towns were winning power and privileges at the expense of the feudal lords. In China, effective power had long ago been centralized in the bureaucratic state — a development at least partly explainable by the hydraulic engineering works that cut across the lands of individual lords. This strongly entrenched bureaucracy successfully inhibited merchants and craftsmen from rising to political or social predominance. It limited the role of merchant guilds. It also prevented the accumulation of private capital by levying taxes. The path to social advancement lay through the mandarin state, which creamed off into its own service the best brains from all levels of society. Many scientists, engineers, and artisans were employed in the imperial bureaus and workshops.

It may be no coincidence that the outlook of organic naturalism took root and flourished under such conditions.

Against the backdrop of a well-integrated social system where everything had its proper place and function in the whole, it would be easy to think of nature operating in a similar way. Their experience with the legalist tyranny of the Ch'in Empire had given the Chinese a distaste for abstract, codified law. Under the bureaucratic system, by contrast, law was human and ethical in content — it was conceived of in terms of accepted customs and most of it was never expressed in formal legal terms. Thus, the notion of abstract laws operating in the nonhuman world would not easily have taken hold.

In both China and Europe, the trends of philosophical and scientific thought that dominated the late Middle Ages reflected and affected the development of society. But, whereas Neo-Confucian philosophy justified traditional social values by proclaiming them to be part of the order of nature, European thought increasingly proclaimed that a new social order would be in line with God's plan for humanity on Earth. If Chinese society was more successful in generating technological advance during the Middle Ages, it was also more successful in containing the social effects of that advance. Japanese military–aristocratic feudalism more closely resembled the feudalism of Europe than of China — this may help to explain why Japan was more capable than China of developing modern capitalism.

Nevertheless, even with the divergence of European and Asian philosophical thought and the eventual triumph of the mechanistic worldview, a minority strand in European thought held a more organic view: Spinoza, Hegel, Marx, and Whitehead, for example. Interestingly, an Asian connection appears in the person of the great mathematician and philosopher, Gottfried Wilhelm Leibniz (1646–1716). The ideas of Neo-Confucianism came to Leibniz's attention

through Jesuit intermediaries. To what extent he was influenced by Chinese thought in the formulation of his own concept of universal pre-established harmony is a matter of speculation — that it engaged his intense interest is certain. Leibniz even suggested that it might be a good idea if the Chinese were to send missionaries to instruct Europeans in “natural theology,” just as European missionaries were instructing the Chinese in “revealed theology.”

Leibniz’s admiration for Neo-Confucian philosophy and his belief that it was not incompatible with European scientific discoveries comes across in his following comments (from Needham 1956, p. 502):

Thus we may applaud the modern Chinese interpreters when they reduce the government of Heaven to natural causes, and when they differ from the ignorant populace, which is always on the look out for supernatural (or rather supra-corporeal) miracles, and Spirits like *Deus ex machina*. And we shall be able to enlighten them further on these matters by informing them of the new discoveries of Europe, which have furnished almost mathematical reasons for many of the great marvels of Nature, and have made known the true systems of the macrocosm and the microcosm.

Until the middle of the 16th century, Europeans knew considerably more about India and Southeast Asia than they did about China or Japan. Merchants and missionaries pushed eastward, seeking fertile ground for their activities. But their experiences in South Asia were not always happy; as a result, their reports on Indian civilization were often hostile.

After 1550, China and Japan assumed a dominant position in the European view of Asia. The Jesuits made Japan known in some detail, and contacts with China soon gave it the reputation of being a model state, in a class by itself as far as government was concerned. Its bureaucratic organization won great admiration from Europeans, who noted with approval regulations such as that which forbade governors from ruling in their native province. The social

institutions of China and Japan, and especially the family, were much praised. The physical and mental discipline of the Japanese was held up for emulation by Europeans. Buddhism's monastic system was compared with that of Christian Europe.

Europeans were particularly impressed by the architectural and sculptural masterpieces of Asia, in addition to such products as porcelains and embroideries. They were astounded by the huge numbers and densities of Asian populations: Kyoto, and possibly Canton, were larger than any European city of the time. Europeans were also impressed by the mass warfare techniques of Asia, by the widespread existence of the lunar calendar, and by the use of Malay as the universal language of South and East Asian commerce.

Books, maps, and marketplace gossip helped form the images that Europeans at home held of Asia. But, as well, there was a steady influx of Asian products, Asian works of art, and even Asian people. Although Europeans were convinced of their own military superiority, they were beginning to realize that there was much in the culture of the Asian lands that they could learn from and use.

SUMMARY:  
AN AGE OF HARMONY

So far, humanity has been in a win-win situation; South-North encounters have been non-zero-sum. From lithic times to the end of the Middle Ages, societal encounters increased knowledge and cultural exchanges on a global basis, to the overall advantage of all segments of humanity. Throughout this long period, the chief contributors of knowledge and cultural enrichment had been societies in Africa and especially Asia, notably China and India — societies that today fall within the designated South. Conversely, the chief beneficiaries of this dissemination of knowledge and culture had been the peoples of Europe — the North.

All societies exhibited a combination of high birth rates and high mortality rates; the net result, slow population growth. Often, the physical resource base and environmental constraints placed a limit upon a society's capability to increase further. Hence we tend to find an overall shift toward dynamic equilibrium.

From the Stone Age to the Middle Ages, the "becoming" of historical societies occurred within the given "being" of the global ecosystem. In the society-ecology nexus, there was a non-zero-sum, win-win relationship. Similarly, while many societies rose and fell, there was systemic growth and mutual enrichment among all peoples, without dichotomization into North and South or winners and losers.

All this is about to change.

## PART 2

### NON-ZERO-SUM TO ZERO-SUM: WIN-WIN TO WIN-LOSE

Time frame:

ca 1500 AD to the establishment of overseas  
colonial empires and a world economy  
(ca 1914 AD)

## THE NORTH SUBJUGATES THE SOUTH

The acquisition of those inventions on which Bacon had shrewdly focused — printing, gunpowder, and the compass — laid the technological foundation in early modern times for the domestic economies of the North. But they would also equip their leaders with the knowledge and prowess to embark on zero-sum, win-lose encounters with the rest of the world.

Printing, as developed in Europe by Gutenberg, revolutionized all spheres of life in the North. It standardized and quickened the spread of ideas, which could henceforth leapfrog over traditional physiographical barriers from one locality to another. Printed literature created more homogeneous societies, helped centralize government, and strengthened the forces of nationalism. Gunpowder made the enforcement of domestic order and the waging of foreign wars more effective.

For its part, the compass, together with related navigational aids, enabled the North to traverse the oceans and inaugurate the Age of Discovery. Far-flung overseas empires were created, coupled with the enforced colonization, and often enslavement, of the peoples of the South. The Age of Discovery also linked the North for the first time with the peoples of the New World, comprising both lithic societies (in the Caribbean and most of the two Americas) and civilizations in Central America and northwestern South America.

European nation-states on the Atlantic seaboard — armed with “bullets, bibles, and booze” or mercenaries, missionaries, and merchants — created two types of empire: “commercial” and “colonial.” The first type resulted from

the establishment of trading enclaves along the coasts of Africa (in time also penetrating its interior) as well as throughout South, Southeast, and East Asia. The indigenous lithic societies of sub-Saharan Africa proved too weak and vulnerable to prevent the large-scale capture and trans-oceanic deportation of their peoples as slaves. By the end of the 19th century, Africa had been carved up almost completely by the North's imperial powers.

Further to the east, however, even the military and economic superiority of the North could not supplant the entrenched strength of the South's most massive civilizations: India, China, and Japan. The unrivaled demographic weight and institutional traditions of these societies had resulted from several thousand years of continuous interaction with their particular environments. The various East India companies did succeed in acquiring commercial monopolies in the Indian subcontinent and Southeast Asia, and European mercantile interests came to control key centres in China and, for a time, in Japan. But, although the Portuguese, British, French, and Dutch established political empires, and in so doing introduced European languages and institutions of military, economic, and administrative control, they could not uproot the indigenous culture patterns.

The dynamics of these societal encounters are well exemplified by Japan, itself culturally enriched by China in its formative centuries. Forced by the North's naval might to open their ports, the Japanese chose to acquire the North's military and industrial technologies. Later, they used these instruments of the North to initiate the demise of Europe's commercial monopolies in Asia. So, in a matter of a few decades, Japan itself was to become a full-fledged member of the North.

In the wake of Columbus's galleons, the Atlantic seaboard powers transported the North to the New World, creating colonial empires from Greenland to Cape Horn and, in this massive historical process, recreating the North's culture pattern. In doing so, they came in conflict with the New World's indigenous societies, at different stages of development.

In central America and the Andes, the Spaniards encountered remarkable civilizations. The Aztec, Maya, and Inca possessed sophisticated irrigation systems, urban centres matching their European counterparts in size and splendour, advanced mathematics and notational systems, observatories, pyramidal architecture, and unique expressions of art. But they lacked the weapons and gunpowder of a small army of conquistadors, and once powerful theocratic societies were toppled, vandalized, and destroyed. In the first century after the Spanish Conquest of 1524, it has been estimated that the population of Mesoamerica fell from 14 million to 2 million as a result of disease, slavery, starvation, and war. Indeed, the material well-being of the Mayan Indians of Guatemala, for example, may have been higher before 1524 than at any time since.

The lithic societies of the New World were also the cruel victims of massive zero-sum encounters with the North. A mixture of imported genocide and disease annihilated a large proportion of the indigenes in the Caribbean and Brazilian rain forest. Occasionally, the British and French made allies of, say, the Iroquois and the Algonquin, but only to serve in their imperial rivalry to possess lands that they were both stealing from the natives. Perhaps the most conclusive and damning indictment of the thoroughness of the North's rapacity in the New World is the fact that from Alaska and Greenland to Tierra del Fuego, every country speaks a

European language. Every lithic culture of the Americas has been shattered, in all likelihood irretrievably.

So far, it appears that encounters between societies of basically the same level of systemic organization — such as food-gathering communities — are likely to be mutually advantageous, non-zero-sum, win-win. Encounters between societies that differ by one organizational level — say food-gathering and food-producing societies or archaic and classical civilizations — may also be non-zero-sum, except for a tendency of the “higher” or later society to use its more advanced technology to dominate the “lower” or more traditional society. The extreme end of this spectrum juxtaposes lithic communities against societies of the North. Here, the cultural differences are so great or “alien” and the respective power capabilities so disparate, that a zero-sum, win-lose relationship is virtually certain, with the simpler society and culture being the loser.

## SOCIETAL ENCOUNTERS IN CANADA

In the wake of the ships of Cabot, Cartier, and their successors, two European societies — France and Britain — would vanquish the indigenes of the northern half of North America, some of whom were food producers, the majority being food gatherers. Here, the North–South metaphor becomes geographically reversed. The Europeans brought to the new land their technological, political, economic, and cultural strengths and skills. They dislodged the Neolithic horticulturists in the Great Lakes–St Lawrence Lowlands and penetrated the Canadian Shield to subjugate the Palaeolithic hunting bands. At first, the food-gathering Inuit were protected by their relative isolation in the austere environment of the high latitudes, which the aliens found too inhospitable to settle (while yet still exploiting, as with the Hudson’s Bay Company). Nevertheless, the dogsled and the spear would eventually be replaced by the snowmobile and the rifle, the igloo by the Nissen hut — Inuit dances and story-telling now have to compete with television and such imported fantasies as “Dallas.”

Among the Dene and the Inuit, the traditional lithic cake of custom has been broken and all but discarded. Is there any solution? Current attempts aim largely at bringing lithic peoples to the level of the industrial North — but at what could well be an unacceptable price, both culturally and psychologically. Any counter strategy to reverse this process would surely prove to be both unrealistic and unviable. Are there still viable alternatives? Could indigenously controlled territories (and eventual provinces) be created north of the 60th parallel? Could both the geographical “North” and the industrial “North” be raised to a new level of societal

organization — one with its own emergent value system, its own global outlook, and its own agenda?

We must fundamentally alter the unequal and inequitable relationship that now divides those Canadians who have immigrated from abroad from the country's original settlers. If we do not, the next century could see this relationship shift from zero-sum to non-zero-sum, from win-lose to lose-lose for all Canadians. In a very real sense, Canada itself is a microcosm of the South-North dichotomy.

## THE COMMERCIAL AND INDUSTRIAL REVOLUTIONS

The North's forced hegemony of the South can be perceived broadly in two phases. With their gold and silver, furs, fish, and timber from the New World, and with their spices, silks, slaves, and other commodities from Asia and Africa, the Atlantic seaboard nations employed their accumulating wealth to develop a capitalist economy on a global scale. This Commercial Revolution was made possible by significant advances in maritime technology — by 1700, the wooden sailing ship “had nearly attained the peak of perfection then possible. For example, a large ship of some 2 000 tons had practically reached the maximum size possible for purely wooden construction” (Naish 1957, p. 495).

The North experienced a remarkable commercial boom in the 18th century. Government demands for goods reached unprecedented heights as large standing armies required huge amounts of food, clothing, arms, and ammunition. A rising European population created another expanding market, demanding bulk commodities. In the South, developing plantation agriculture in the colonies provided yet another major stimulus to overseas trade. During the 18th century, both British and French foreign trade increased more than fivefold. Imports from the French West Indies, an index of the valuable trade in sugar, slaves, and other commerce, increased tenfold between 1716 and 1788. At Liverpool, annual imports rose from 27 thousand tonnes in 1700 to more than 140 thousand tonnes 70 years later.

The Commercial Revolution occurred at the stage of *eotechnics*: when water and wind were the prime movers. Then, with the effective exploitation of steam as a new source

of energy, a technological quantum shift occurred in the late 18th century. This quantum shift (*paleotechnics* stage), summed up in the phrase Industrial Revolution, comprised four major achievements (Forbes 1958, pp. 148–167):

- The replacement of tools by machines;
- The invention of the steam engine, employing a new prime mover;
- The mobile prime mover (the power of the steam engine could be created where needed so that industrialization occurred in areas with no great resources of water power); and
- The factory as a new form of organizing production and, with it, the creation of the factory town.

Only with the Industrial Revolution did the material disparity between North and South develop. Indeed, before the Industrial Revolution, Europe was less wealthy than the territories it was exploiting (Table 2).

Braudel (1984) says that the European Industrial Revolution was not just an instrument of development (also, see Landes 1969, p. 13). According to Braudel (1984, p. 536),

It was a weapon of domination and destruction of foreign competition. By mechanizing, European industry became capable of out-competing the traditional industry of other nations. The gap which then opened up could only grow wider as time went on.

By exponentially increasing the production of energy — and its effective consumption in the form of new goods and services — the Industrial Revolution fostered a rapid increase in population and urbanization (including the new factory towns), restructured societal relationships, and transformed existing living standards and goals in the North. Meanwhile, from the standpoint of humanity's capacity to control its terrestrial habitat, this paleotechnical quantum shift was no less spectacular than its eotechnical predecessor, which had ini-

tiated the Age of Discovery and the resultant oceanic stage of two-dimensional environmental control. Now, the oceanic stage was consolidated and further extended: it became possible to explore and increasingly use the temperate zones, and even extend into the Arctic and Antarctic latitudes.

TABLE 2  
Total gross national product (in billions of 1960 US dollars)  
for North and South from 1750 to 1976.

	1750	1860	1880	1900	1976
North	35	115	176	290	3000
South	120	165	169	188	1000

Source: Braudel (1984).

The paleotechnical era ushered in the final act of two-dimensional extension and consolidation: the continental stage. During the 19th century, the hinterlands of all continents were opened up not only to the mass movement of raw materials in bulk but also to mass settlement. Railroads intersected Europe, penetrated South America and Africa, and spanned North America, Australia, and Eurasia from ocean to ocean. The application of new technologies to physical resources on a global scale, coupled with advances in public health, brought an exponential demographic increase. In 1650, the world's population was estimated to be 470 million; a century later, the figure had reached 694 million. By 1850, global population passed the 1 billion mark; at the beginning of the 20th century, it had risen further to over 1.5 billion. In two and a half centuries, the world's population had more than tripled (UNPD 1954; also, see Willcox 1940).

## THE RESULTS OF ZERO-SUM ENCOUNTERS

In terms of the five areas of mutual vulnerability — the environment, the economy, the society, the polity, and the culture — what were the ramifications of this period? First, let us look at the North:

**THE ENVIRONMENT** — The North achieved oceanic control in the age of sail and continental control in the age of steam; large-scale use of natural resources began, accompanied by progressive importation of resources from the South. There was gradual pollution of the environment by the North's smokestack industries. Exponential demographic growth began to impact adversely on the environment. There was marked increase in urban nodes and a resulting diminution of arable land.

**THE ECONOMY** — The North created a world economy resulting from the combined Commercial and Industrial revolutions, accompanied by geoeconomic penetration and exploitation of the South. Historically, mercantilist-oriented commercial empires were superseded by the creation of laissez-faire capitalism on a transcontinental scale. There was an increased division of labour, accompanied by massive increases in economic infrastructure. A new relationship evolved between economics, science, and technology: from this time on, appropriate technologies are invented to serve entrepreneurial planning. The period was marked by the advent of factory towns, new labour forces, and trade unions, for the most part following the economic theories of Adam Smith, and subsequently by the appearance of socialist and Marxist socioeconomic countertheories.

THE SOCIETY — Within an exponential demographic increase, there was increased migration from the countryside to the sprawling factory towns and overseas to colonies and foreign countries. A massive use of human resources, including slaves (in certain regions, such as the southern American states), was accompanied by new socioeconomic stratification and growing class struggles. There was a rapid increase in male suffrage, with mounting and eventually successful demands for female emancipation. The spread of universal primary education was matched by rising living standards and, hence, a mounting use of material resources from both South and North.

THE POLITY — Overseas empires were created in the New World, Africa, and Asia, while Japan and China were forcibly opened up, the latter being subjected to the Opium Wars. The nation-state system matured, based on the “logic of Westphalia,” which legalized the concept of national sovereignty and the right of nations to have a free hand within their own borders and to pursue their self-described “vital interests” abroad, if necessary by recourse to warfare. Hence the dominance of Hobbesian values and behaviour in the war–peace equation. The Industrial Revolution was also accompanied by quantum advances in military technology so as to increase environmental control, and destruction, in intra- and intercontinental conflicts. At the same time, there was progressive democratization of the political decision-making process in major segments of the North: Western Europe, North America, Australia, and New Zealand.

THE CULTURE — With its science, technology, economic and cultural dynamics, and secular values, the North

progressively hegemonized the South. The North's triad of penetration — warfare, commerce, and religious proselytism — all worked together to strengthen and affirm the North's cultural pattern on a global scale. In turn, the languages of the North — especially English — became the vehicles of communication in science, technology, religion, politics, commerce, and travel.

So much for the North. Now, what sort of changes took place in the societies of the South?

THE ENVIRONMENT — Entire continental environments were occupied by the North's political and economic institutions. This involved the wholesale exploitation of physical and human resources throughout the South and resulted in the progressive export of raw materials to Northern industry. The penultimate stage of the occlusion of geographical frontiers was reached, including the North's opening of "Darkest Africa" in its insatiable quest to explore, occupy, and control what had hitherto been known as *terra incognita*.

THE ECONOMY — Indigenous economies were increasingly assimilated into the North's global market economy. The South's economic and commercial structures were subordinated to the status of "hewers of wood, drawers of water." The employment of slaves and indentured labour by Northern entrepreneurs ceased legally in the 19th century, but Southern societies would continue to exist at the level of economic colonialism. Wealth from the South's resources drained increasingly to Northern enterprises and banks. All-important strategic choices in the areas of commodity production, levels of production, export markets, and prices

were set for the South by economic forces centred in London and New York.

**THE SOCIETY** — This era of Northern empire-building coupled with Southern colonial dependency had widespread societal and cultural ramifications. The devastation of indigenous peoples in much of the New World by disease and warfare left permanent scars among surviving communities. There was a universal reduction in the social status of indigenous peoples everywhere, most obviously and tragically manifested in the enslavement and forced migration of black peoples in sub-Saharan Africa. Traditional education was subordinated to, and all too often destroyed by, the importation of Northern educational curricula and pedagogy, as attested, for example, by the attitudes and activities of mission schools in Canada. In short, the peoples of the South were well-nigh universally regarded by Northerners as socially and intellectually inferior, and given to understand that their collective and individual salvation lay in their acceptance of the North's societal values and institutions.

**THE POLITY** — All of the political structures of the New World's pre-Columbian civilizations (Aztec, Maya, Inca) were destroyed: elsewhere in the Americas, indigenous societies lost any claim to autonomy. Similarly, once proud tribal kingdoms in sub-Saharan Africa were shorn of their independence and influence. Sovereignty in the Indian subcontinent was assumed by Britain; in Southeast Asia, by France and the Netherlands. China's independence was challenged by "foreign devils," who imposed political and economic shackles in the form of extraterritorial treaties. As pointed out earlier, 19th century Japan escaped such servitude by adopting and adapting legal, political, techno-

logical, and commercial institutions from among the North's most advanced countries, notably Britain, Germany, and the United States.

**THE CULTURE** — The culture patterns of all Southern societies were denigrated and, all too often, subjected to irrevocable damage. There was widespread loss of traditional scientific knowledge and technologies. Similarly, there was a loss of traditional value systems and behavioural patterns, resulting in social breakdown and alienation of the individual. Indigenous art forms and aesthetic canons were insufficiently understood or tolerated, with a consequent loss of creative expression. In some cases, native languages were exterminated; all others were subordinated in favour of the use of the North's languages and literatures. In short, global humanity was impoverished by cultural genocide on a scale without parallel in planetary history.

In summary, what do the events of this era signify in terms of the mutual vulnerability of North and South? We can only conclude that, in all areas of the Universal Culture Pattern, the balance sheet presents us with a zero-sum, win-lose outcome as we move into the 20th century:

- *The North* — Always experiencing an overall increase of power, prestige, and profits.
- *The South* — Always experiencing an overall decrease of strength, autonomy, and self-worth.
- *Net result* — North the winner, South the loser: a global zero-sum outcome.

PART 3

ZERO-SUM TO NON-ZERO-SUM:  
WIN-LOSE TO LOSE-LOSE

Time frame:

20th century  
(ca 1914–2000 AD)

## THE MUTUAL VULNERABILITY OF NORTH AND SOUTH

The 20th century is witnessing yet another major societal quantum shift, one that is global in scope and transformational in intensity. A globalization of all segments of the Universal Culture Pattern is taking place: in the discoveries of science and the invention and dissemination of new technologies; in economic markets and intercontinental exchanges of goods and services; in information networks; in population growth and demographic pressures, especially in regions of the South; in warfare and the threat of nuclear and chemical annihilation (reduced but not eliminated with the ending of the Cold War); in environmental pressures and ecological degradation; in societal interdependence and cultural interactions; and everywhere in the transformation of traditional value systems and goals.

The process of metamorphosing juridically bounded countries into McLuhan's global village still has a long way to go; yet, his phrase has a special metaphorical significance. Because of its intimate size and interconnectedness, and the immediacy of its activities, all the inhabitants of a village — be it minuscule or global — must inevitably share its good and bad times together. Moreover, this metamorphosis is not a temporary aberration, but a profoundly new and irrevocable step in planetary evolution. It is our fortune, whether good or bad, to be both audience and actors in this remarkable drama.

Henceforth, because South and North together make up this global village, mutual encounters can no longer result in zero-sum, win-lose decisions. Instead, all activities must be of a non-zero-sum nature: either lose-lose or win-win. We

are now confronted with two scenarios for the interlocked South and North: mutual vulnerability — which, if not reversed both ecologically and societally, could end in mutual destruction — or mutual sustainability and development. Which is it to be?

Developments in the Universal Culture Pattern between 1914 and 1992 prove beyond cavil that the North's once unchallenged supremacy has eroded. The North can no longer assume that it can effectively insulate itself from the problems and misery of the South.

THE ENVIRONMENT — The contemporary world has no more *terra incognita* into which to move or attempt to escape from a polluted past. Instead, there can only be increasing demographic and economic pressures upon the planet. The North has been chiefly responsible for initiating industrial and related forms of pollution, thereby progressively degrading the Earth's seas, soils, and atmosphere and, in the process, destabilizing the planet's life-support systems. To the developed world goes the dubious distinction of having caused the "greenhouse effect" and punctured the ozone layer. Both of these phenomena, which could turn out to be irreversible in their compounding effects, can only equally affect the South, in which some four-fifths of the planet's population will be living in the coming century.

Unhappily, the South itself is now bent on duplicating the North's historical and unplanned drive to industrialization, with all the ecological consequences that such industrialization can entail. At the Stockholm Conference on the Environment in 1972, the developing countries rejected the Club of Rome's "limits to growth" thesis. This thesis warned that runaway industrial expansion could result in the next century in a squandering of physical resources that might

bankrupt a planet, which, meanwhile, would be choking on unprecedented levels of pollution. Representatives from the developing economies argued that to agree to such a thesis would permanently consign them to underdevelopment and neocolonialism. If necessary, they were prepared to accept pollution as the price of prosperity — in any event, by what right had the North's industrial societies any justification to moralize?

Today, the South's cities, rivers, and atmosphere rival those of the North in pollution and related forms of ecological destruction. Tragic examples come to mind all too readily. The forests of the world are being destroyed at a frightening rate. This has led to the rapid expansion of the desert in Africa and has wreaked havoc in Nepal and Bangladesh with massive flooding and destruction of topsoil. The destruction of the Amazon rain forest imperils not just the ecosystems of Brazil but puts the entire planet at risk climatically and even genetically. Consequently, given their mutual vulnerability, South and North must equally and unreservedly commit themselves to a sustainable planetary environment. In the final analysis, without a sustainable environment, there can be no sustainable economic development.

THE ECONOMY — As we have seen, the modern period drew the South inexorably into the orbit of industrial capitalism; traditional economies were rapidly destroyed or forced to adapt to the global economy. Following World War II, the old colonial empires began to break up. Many countries gained their political independence. However, this was not matched by economic independence. While poverty and hunger stalked nations of the South, they continued to produce cash crops such as coffee and cattle to satisfy the

appetites in the North. Far too many Southern nations continued to be net exporters of wealth to the much richer Northern economies. What wealth that remained in the South was all too often concentrated in the hands of elites acting as local management for international capital. Many Southern nations became burdened with enormous foreign debts, which they were unable to repay. The International Monetary Fund (IMF) and Northern banks called for a Draconian restructuring of the debtor nations' economies, resulting in further hardships for the common people.

What many observers would regard as the South's major area of economic vulnerability is the fact that, with about one-quarter of the world's population, the North consumes in excess of three-quarters of the planet's resources. This extraordinary, and one might say unconscionable, imbalance creates for hundreds of millions in the South a condition of perennial poverty and misery. A condition that is compounded by accompanying critical factors:

- Commodity prices are set in the North.
- In producing specialized foodstuffs for export, Southern countries jeopardize their own people's nutritional needs and health standards.
- The amassing of huge foreign debts and interest charges impoverishes national economies to the point of preventing the development of infrastructure essential for modernizing Southern societies and economies and, consequently, of lowering living and educational standards still further.

The developing countries have been demanding a New International Economic Order (NIEO). Their arguments in support of this demand may in some cases be challenged; but, what can scarcely be disputed is the South's strongly held

belief that the international trading and financial systems operate to the North's overwhelming advantage.

OPEC, the Organization of Petroleum-Exporting Countries, exemplifies attempts by advantaged Southern countries to improve their economic status. Possessing a resource especially important, indeed currently crucial, to the North's industry and transportation, OPEC not only managed to destabilize the world movement and price structure of petroleum for several years, it also dramatically demonstrated the North's vulnerability in an interdependent global economic system. It is conceivable that other cartels could be created by developing countries to "hold the North ransom" over essential industrial minerals and commodities that are in strong demand — including tea, coffee, and cocoa.

Meanwhile, the international financial system finds itself increasingly at risk. Northern banks have loaned hundreds of billions of dollars to developing countries, with some of the largest debtors now finding it increasingly difficult to make payments and, hence, with their long-term financial viability in jeopardy.

**THE SOCIETY** — Our modern era has witnessed an exploding world population accompanied by massive intercountry and intercontinent migrations. This has resulted in Northern countries severely restricting immigration, while sometimes temporarily employing large numbers of migrant workers from the South. As demographic pressures build up in the South, Northern societies have been attempting to stem the influx of "boat people" from Vietnam, Algerians seeking employment in the European Community, and Haitians and Mexicans doing their utmost to enter the United States. Historically, high living standards in the North were accompanied by dramatic decreases in birth rates. In the South, by

contrast, poverty and high birth rates have fed on each other. Exploding populations taxed limited national resources while, for the poor, large families were seen as a necessary source of mutual support in a hostile social environment. What made sense for the individual family was counter-productive for the larger community.

Also, during this century, the traditional structures and behaviour patterns of vestigial lithic societies in all continents have either eroded seriously or collapsed. These societies are forced to adjust to external forces and pressures too quickly — in their traditional arsenal of concepts and technics, however, they do not possess the wherewithal to undertake strategies of social reinforcement and renewal. Instead, we find evidence of widespread social unrest and generational alienation, accompanied by alcoholism, drug dependency, and violence. India and China, with their deeply rooted indigenous cultures, continue to show resilience in coping with technological and societal pressures and values from the North. European societies transplanted to the South should be best equipped to adapt to external social pressures; but, with Latin American cultures, they are vulnerable to domestic socioeconomic upheavals that challenge traditional elites. Thus a population–poverty nexus results in the disease and violence endemic in the shanty-cluttered barrios that ring Latin America's large cities.

Civil wars in the South, accompanied by universal poverty in many developing countries, continue to create refugee problems for Canada and other Northern countries. There is a mounting flood of people seeking entrance and employment by either legal or illegal means. The North cannot hope to immunize itself against epidemics and social crises resulting from mass poverty and malnutrition in the South. Moreover, what will countries such as Canada, with

the second largest land area but only the 36th largest population in the world, do if and when the people–resource imbalance in, say, Bangladesh, Indonesia, or, again, in much of sub-Sahara Africa stretches beyond hope of redress? What then should be the Canadian immigration strategy vis-à-vis the South: one of closing or opening doors? The continued population explosion can only render all continents and societies increasingly vulnerable.

THE POLITY — Rival blocs of states dominated the international stage in the 20th century, with two world wars fought in the first half and the Cold War pervading the second. After 1945, the principal rivalry was between the American and Soviet superpowers and their respective alliances. It was also during this period that a plethora of independent states emerged from the North's former imperial booty. But they lacked real political clout with the North, whose blocs commonly waged proxy struggles in the South. A substantial proportion of humanity's resources was used — or should we say squandered — in massive arms buildups, both conventional and nuclear. At the same time, wars in the South — including Korea, Vietnam, and Cambodia — claimed millions of lives. Many Northern governments became arms suppliers to the South, although Southern nations also demonstrated their ingenuity in manufacturing arms (including nuclear weapons in the cases of India and China).

Today, the bloc system created by the Cold War is disintegrating, but future patterns remain far from clear. Resurgent nationalism — as in the new nations emerging from the defunct Soviet Union or again from a re-Balkanized Yugoslavia — poses pressing dangers to international stability. At the same time, the European nationalisms that were

responsible for initiating the carnage of two world wars have undertaken a bold course: in the European Community, a powerful new form of economic integration and political stability is being created.

Historically, the nation-state system was imported into the South from the North. Along with this system came two-valued (either/or) forms of logic and zero-sum political and juridical norms, often at the expense of traditional consensus-building orientations and non-zero-sum modes of thought and behaviour. It should scarcely come as a surprise that scores of Southern nations imported Northern forms of government upon attaining independence, only to abandon or lose the North's traditional concepts of democracy in short order. One reason for this was that formal political independence remained saddled to economic dependency, and the hopes and promises generated during the struggle for political freedom were all too often dashed after the transfer of sovereignty.

Obviously, such political instability lends itself to violence both at home and against neighbours. With the ending of bipolar, superpower hegemony, the political fragmentation and accompanying destabilization in much of the former Soviet empire, and the continued violence within and among competing states in the South, new forms of conflict management and peacemaking will be required in the decades ahead. Both South and North appear willing to use the peacekeeping capabilities of the United Nations. But peacekeeping must become more than simply a call for truces among warring elements. It should logically be extended into peacemaking by developing new economic and social initiatives that could help reduce the contemporary dangerous disparities between South and North.

THE CASE OF APARTHEID — The tragic phenomenon of apartheid is an example, at its worst, of the transformation of political and cultural encounters from zero-sum to non-zero-sum, from win-lose to lose-lose.

Let us begin with the following question: In what category does South Africa belong: North, South, or, again, both? We suggest that this imprecision results from the schizophrenic situation that is bound to inhere in apartheid. Historically, the southernmost part of the continent was settled by lithic Africans from the north, commercially and industrially advanced Europeans from overseas, and, subsequently, inhabitants from the Indian subcontinent. These ethnic communities have coexisted while being socially and physically segregated, pursuant to a European political and economic policy of partial domination of the Asians and total domination of the Africans. As conceived and initially implemented, apartheid constituted a zero-sum strategy of benefit only to the “north.”

Yet, if the “north” is dominant in the political and economic segments of South African culture and has created a segregated, hierarchical caste system in South African society, the ethnic communities that make up the “south” are no less dominant by virtue of their sheer numbers. And therein lies their ultimate strength and possible salvation. All segments of a culture pattern are interconnected and interacting, and the Indian and especially African workers are indispensable to the “north’s” industrial and agricultural operations and to its overall economic viability both at home and in the international sphere. Hence, we see the schizophrenic relationship between social segregation and economic integration. Increasingly, through a dual strategy of either giving or withholding its labour, the “south” hopes to wrest concessions in each segment of the culture pattern.

While making some concessions to the Indians, the Europeans clamped down on the Africans' demands for greater political, economic, social, and educational rights, sometimes with acts of bloody reprisal (as at Sharpeville). As the confrontation dragged on and intensified, the dynamics of societal and cultural encounters transformed the original win-lose relationship into a lose-lose situation for all concerned. Today, the entire global village has found itself drawn into a conflict that people on every continent refuse to regard any longer as simply domestic.

So, what options exist for a constructive resolution of the tragedy that Alan Paton described in *Cry the Beloved Country*? Is it a return to a hard-line zero-sum strategy as the right-wing Afrikaners insist, despite the current President's release of Nelson Mandela, leader of the African National Congress, and his attempts to find accommodation with the blacks? Or is it a non-zero-sum approach — aided by both white and black political moderates outside South Africa — that will transform the current lose-lose situation into a win-win relationship for all the peoples of that troubled country? In South Africa, time may be running out for "north" and "south" alike.

THE CULTURE — The second half of this century has been noteworthy for the trend toward worldwide homogenization of culture, driven by the values of industrialism and consumerism. This development has impinged increasingly upon both North and South. Indeed, contrary phenomena, such as the growth of religious fundamentalism or renewed interest in ethnic cultures, were largely a last-ditch reaction to the powerful tide of modernity uprooting whole populations from their traditional ways of life. Can acceptable values be found to replace, or perhaps subsume, traditional values?

Can any meaningful diversity continue to exist in an era of accelerating global cultural integration?

Among the features of the trend toward homogenization was the emergence of English as the first true global language of science, technology, commerce, and popular culture. Meanwhile, technical means of communication were revolutionized by radio, television, orbiting satellites, and computers. Inhabitants of every corner of the globe were being brought into cultural contact. In the South, there was a revolution of rising expectations, which included being able to live materially as well as people in the North. At the same time, there was a broad demand for democracy and human rights, including equal rights for women (although this demand was muted in various Muslim and other cultures) and an end to racial discrimination.

Yet, in a world being revolutionized by science and technology, the South lacks the financial and educational resources to develop cadres of scientists and technologies that are sufficiently strong and diverse to be able to cooperate or compete successfully with their counterparts in the North. Again, the developing countries complain that multinational corporations retain their research and development operations generally in the country of incorporation. Meanwhile, indigenous tools and techniques have often been replaced by industrial machines and automated processes from the North — technologies that are highly sophisticated but often inappropriate for the South's labour-intensive economies.

PART 4  
NON-ZERO-SUM:  
WIN-WIN  
(REVISITED)

Time frame:

21st century

*We are the music makers,  
And we are the dreamers of dreams,  
Wandering by lone sea-breakers,  
And sitting by desolate streams;  
World-losers and world-forsakers,  
On whom the pale moon gleams:  
Yet we are the movers and shakers  
Of the world for ever, it seems.*

*We, in the ages lying  
In the buried past of the earth,  
Built Nineveh with our sighing,  
And Babel itself in our mirth;  
And o'erthrew them with prophesying  
To the old of the new world's worth;  
For each age is a dream that is dying,  
Or one that is coming to birth.*

— Arthur O'Shaughnessy

AN AGE THAT IS DYING:  
NATIONAL INDEPENDENCE

Contrary to popular belief, the Anglo-Irish poet who coined the phrase “movers and shakers” was not referring to the world’s politicians or captains of industry, but to the “for-sakers” of a world that is dying, the “music makers” and “dreamers” who give prophetic voice to the birth of a new age. In the preceding parts of this book, we have marked more than one seismic transformation in global society, including the creation and subsequent destruction of history’s many “Ninevehs.” More specifically, we have adduced empirical evidence to show that powerful global factors — environmental, demographic, economic, social, and political — have converged in the last half of this century especially so as to give progressive credence to the thesis of North–South mutual vulnerability. We now find ourselves at a turning point that is global in dimension, a quantum shift from one world order to another. At the core of this global shift is the transformation of the nation-state system. For the past three centuries, this system has been responsible for the cult of national sovereignty and the continuation of what has been aptly described as an “international anarchical society.”

THE LOGIC OF WESTPHALIA — The Treaty of Westphalia, concluding the Thirty Years’ War in 1648, marked the emergence of the modern nation-state system, replacing the feudal order and based on the “logic of Westphalia.” Gone was the medieval metaphysical assumption of a superordinate authority possessing ultimate sovereignty derived presumably from God. The new metaphysical construct ascribed to

all states equal juridical authority; each possessed illimitable sovereignty. Hence, all states became equal in status, if not in stature. To paraphrase Orwell's *Animal Farm*, while all states are equal, some are more equal than others (as the permanent members of the United Nations Security Council can surely attest).

All sovereign states claim the right to conduct both their domestic and international affairs free from external interference — the claim of unfettered domestic jurisdiction being enshrined as Article 2(7) in the United Nations Charter. A behavioural corollary is the penchant to resolve problems unilaterally wherever self-described “vital interests” are concerned and, if necessary, to resort to the *ultima ratio*, the threat or actual use of physical force.

According to Martin Wight (1967) and Hedley Bull (1976, 1977), three traditions of thought have competed in the history of the nation-state system (Table 3). The realist tradition derives from the work of Thomas Hobbes, who viewed conflict as natural to the human condition. War is the most typical international activity, with peace being a period of recuperation from the previous conflict and preparation for the next. Each state's interests exclude those of other states, and war is perceived as zero-sum: one side wins, the other loses. Whether a state keeps or breaks agreements with other states is determined by expediency.

The second, or internationalist, tradition derives from the writings of natural-law advocates such as Hugo Grotius. Sovereign states remain the primary actors in international politics. However, in dealing with one another, they are bound by the rules and institutions of the international system of which they are part. Juridical imperatives call for accepting the requirements of coexistence and cooperation.

Farthest from the Hobbesian tradition is the universalist view propounded by Immanuel Kant and his modern successors. Here, the central reality in international politics is not the system of states, but rather a “community of humankind” sustained by moral imperatives. These call for limiting actions by nations and introducing a truly cosmopolitan society. To this end, the higher morality requires subordinating the pretensions and interests of states, including their claims to unfettered sovereignty and the right of independent action and implementation of self-avowed national objectives. The Kantian tradition enjoins not simply coexistence and cooperation among states but also the progressive replacement of the state system by a global society. In this new society, the war–peace equation is perceived in non-zero-sum terms. In war, everyone loses; whereas peaceful enterprise enables all peoples to profit.

To help explain the evolution of the nation-state system within the Earth’s politically organized space, we propose three paradigms roughly analogous to the models advanced by science to account for the behaviour of planetary bodies: the Ptolemaic, Copernican, and Force Field (Table 3).

TABLE 3  
The Logic of Westphalia:  
Hedley Bull’s three traditions of political thought  
vis-à-vis Taylor and Taylor’s three geopolitical paradigms.

	Hedley Bull (1976, 1977)	Taylor and Taylor	Time frame
1.	Hobbes	Ptolemaic	16th & 17th centuries
2.	Grotius	Copernican	18th & 19th centuries
3.	Kant	Force Field	20th & 21st (?) centuries

*Note:* Paradigms 1 and 2 employ two-valued logic: either/or. In terms of game theory, their results are zero-sum, win–lose. Paradigm 3 employs multirelational logic: both/and. In terms of game theory, its result is non-zero-sum: lose–lose or win–win.

**THE PTOLEMAIC PARADIGM** — Ptolemy is associated with the geocentric theory of celestial mechanics, namely, that the Earth is the centre of the universe with all other bodies revolving around it. In our first geopolitical paradigm, the individual nation-state is perceived as the primary actor, one that emphasizes ethnocentrism in culture, politics, economics (such as mercantilism and other forms of autarchy), and positivist international law, by which states are bound only by rules to which they have consented.

In this paradigm — most closely approximating the logic of Westphalia — each state regards itself as completely independent while acting as the centre of an essentially hostile geopolitical environment. We are dealing here with the tradition of Machiavelli and, especially, Hobbes, who viewed polities as akin to discrete political atoms inevitably bound on collision courses. In this paradigm, power is amassed to gain unilaterally defined objectives and to subordinate other states (ideally, from the standpoint of this paradigm, to make them “satellites”). The geopolitical strategy calls for extending borders and acquiring physical and human resources, such as through territorial annexation and overseas dependencies. The main features of the nation-state system at this time have been described as “dispersed territorial competition among emergent state structures,” the existence of “variable frontiers,” and the fact that there “were no truly international institutions,” so that “the only regulating factor in the system was the resistance of other states to the dominance of the most powerful, first Spain and then France” (Luard 1968, pp. 8–9).

**THE COPERNICAN PARADIGM** — The Ptolemaic geocentric model of celestial mechanics was superseded by Copernicus’ heliocentric model, which relegated our planet to a course

orbiting the sun. More importantly, the relationships and behaviour of the sun and its planets were conceived as a "system," a whole functioning by virtue of the relations of its parts.

In this second geopolitical paradigm, the concept of "system" becomes fully established. Nation-states remain the primary actors, but now they have to exist as sovereign polities consciously interconnected and interacting with other such polities to maintain an overall equilibrium within the global political system. This requires a greater willingness to find accommodations for mutual benefit.

The Copernican geopolitical model became fully operative during the 18th and 19th centuries. The domination of the European political system by a number of major states resulted in its progressive institutionalization: the formalization of diplomatic procedures, the growth of multilateral diplomacy and ad hoc conferences, and development of the norms of international commerce. Moreover, to maintain an overall geopolitical equilibrium, it activated the concept of "balance of power." By means of alliances, this concept sought to prevent any one state or congeries of states from dominating the international environment.

That the alliance system in the latter part of the last century failed to prevent, but instead contributed to, the outbreak of World War I can be largely attributed to certain developments that fundamentally altered the structure and processes of international politics. These included the rise of both nationalism and ideology as major factors in foreign policy behaviour. There was also the application of science and technology to warfare, exponentially increasing both the mobilization and destruction of human and physical resources. Like the Ptolemaic paradigm, the Copernican model was based upon the principle of zero-sum — in this

case, permitting individual national actors to win or lose while maintaining an overall geopolitical equilibrium. However, the dynamics of mass mobilization and behaviour, coupled with the apocalyptic capabilities of nuclear weapons, were to debase this assumption.

Quincy Wright (1964, chapter 3) found that, since the Renaissance, there have been five major developments in the waging of war:

- It is the fighting propensity of the great states that has primarily increased.
- The size of armed forces has grown both absolutely and proportionately to the population.
- There has been an increase in the length of conflicts, the number of battles in a war year, and the total number of battles during a century, with the intensity of warfare reaching unprecedented proportions in the 20th century.
- There has been an increase in the number of belligerents in a war, in the rapidity with which a war spreads, and in the area covered by warfare, with World War II involving all continents.
- The human and economic costs of war have been soaring, both absolutely and relative to the population; there is general consensus that a third world war fought with nuclear weapons would introduce a cataclysmically new magnitude of destruction.

While the Hobbesian–Ptolemaic worldview unabashedly embraced the dual primacy of the individual state and the recourse to war, the Grotian–Copernican interpretation of the logic of Westphalia — as embodied in Hedley Bull’s phrase “anarchical society” — has been no more successful in tipping the societal scales in the direction of peace. To prove our argument, we need only briefly update Quincy Wright’s study.

Each year, spending on arms amounts to a value exceeding the world's entire economic output in 1900 and equaling the current gross national product of all Latin American and African countries combined. As former US President Jimmy Carter told the United Nations in 1976, "The nations of the world spent more than 60 times as much equipping each soldier as we did educating each child." The cessation of the Cold War should result in a diminution of the American-Soviet arms race; but the Gulf War in 1991 attested to the continued Hobbesian interpretation of international politics and its expansion beyond the original European perimeters. It is against this realpolitik that George Bush's announced New World Order has to be measured.

THE DREAM THAT IS COMING TO BIRTH:  
GLOBAL INTERDEPENDENCE

THE FORCE FIELD PARADIGM — Our third geopolitical paradigm is strongly analogous to a major development in modern scientific theory. The Copernican model of celestial mechanics culminated in the Galilean–Newtonian synthesis, in which space, time, and matter each existed separately. Space by itself was independent and empty. Time was also independent and absolute. Matter inhabited these two forms of extension but did not affect them. In short, the world was envisaged as composed of particles poised in a void. However, attempts in the last century to understand electromagnetism in terms of the classic notions of forces acting between particles gave rise to a new concept: that of the “field.”

As field physics developed, attention shifted from the particles to the field filling the space between particles. “In the new field language,” we learn from Einstein and Infeld (1954), “it is the description of the field between the two charges, and not the charges themselves, which is essential for an understanding of their action” (also, see Einstein 1954). In time, the distinction between particles (or waves) and field was to disappear altogether (Harris 1965, chapter 6). In the field model, space is not a void but a plenum, and no part of the physical universe remains unaffected by the field. This concept gives rise to a more unified picture of the material world, in which every particle “becomes involved with every other in a complex of overlapping fields.” In short, every particle “is the centre” of gravitational and other fields, whose limits cannot be sharply drawn, and that “modify the

physical environment of every other particle” (Harris 1965, pp. 52–53).

Twentieth-century science and technology are thus chiefly responsible for our Force Field geopolitical paradigm. Quantum mechanics and relativity theory revolutionized our concepts of the basic nature of space, time, and matter; no less, however, technology revolutionized transportation and communications. Global networks have been created that operate within a sociospatial plenum — a planetary socio-cultural force field in which societal “particles” everywhere are being acted upon and modified by whatever is transpiring elsewhere.

In addition to transportation and communications, two other advancements have revolutionized our geopolitical environment. In the Ptolemaic and Copernican paradigms, sovereignty was seen and juridically formalized in terms of a two-dimensional environment: “flat Earth.” However, the exploits of the Wright Brothers and their successors gave humanity the capability for three-dimensional control. We can explore the inner space of our ocean beds and outer space of our solar system. What does this do to the traditional encapsulation of sovereignty in national space containers? Similarly, military technology has taken a quantum leap in its destructive capability with the advent of the nuclear age. This development has radically altered — indeed, rendered paradoxical — the concept of power as deployed and justified in the Ptolemaic and Copernican paradigms.

Just as every physical particle is the centre of a gravitational or electromagnetic field, so does every society form the centre of a geopolitical force field. The Copernican paradigm coexisted with the period of European hegemony. During this time, the Mercator projection placed Europe in the centre of the global map — Europeans regarded the easterly

regions as the "Near East," "Middle East," and "Far East." In today's world, such ethnocentric terms are anachronistic: there can be no single fixed, or central, position. Moreover, given the need in our Space Age to account for the Earth's curvature, the Mercator projection has been superseded by more appropriate spatial presentations, such as the polar azimuthal equidistant projection (which is employed in the United Nation's official symbol; see Harrison 1944).

THE DYNAMICS OF GLOBAL INTERDEPENDENCE — In force field theory, every particle constitutes a centre; it modifies and is in turn modified by every other particle in the field. Likewise, our sociopolitical Force Field paradigm, in theory, accounts for all phenomena interacting in the global societal environment. This is a crucial innovation. It is no longer possible to regard nation-states as the only actors in the geopolitical environment. Neither can they claim to be the only subjects in international law. A host of new actors has entered upon the global stage.

Just as the Treaty of Westphalia in 1648 formalized the nation-state system, the Congress of Vienna in 1815 took action of far-reaching significance for the evolution of international organizations. Because of a growing demand by merchants that cargo boats should move up the Rhine unimpeded by the variety of restrictions imposed by each of the riparian states, the Congress of Vienna established the Rhine Commission. Its success in regulating traffic to the advantage of all led to the creation of the European Danube Commission in 1856. This Commission possessed broad powers to collect tolls and to dredge and improve the river. Meanwhile, an ever-growing need for transnational collaboration had initiated action to suppress the slave trade. As well, to overcome the barriers to the free flow of mail caused

by national boundaries, the General Postal Union was established in 1874. By 1906, virtually every independent political entity had joined what had now become the Universal Postal Union, whose indispensability makes it today the oldest Specialized Agency of the United Nations.

Our century has been notable for the rapidly accelerating complexity of global interdependence. The original United Nations membership has more than tripled since 1945; also, intergovernmental organizations (IGOs) and nongovernmental organizations (NGOs), phenomena of the past hundred years, have proliferated widely since World War II. As of 1981, 337 IGOs were in existence; NGOs outnumbered IGOs by more than 12 to 1, thereby creating transnational networks in all fields of human endeavour (UIA 1992). In the Copernican paradigm, multilateral conferences were ad hoc (primarily to deal with terms of peace after major wars). Today, permanent, multilateral, conference diplomacy is institutionalized in the United Nations and its Specialized Agencies and occurs in thousands of other international bodies (UIA 1992).

Another actor has also taken its place on the global geopolitical and geoeconomic stage: the transnational corporation. Its activities cut across national boundaries, while its perceptions and loyalties are scarcely constrained by the logic of Westphalia. Foreign manufacturing subsidiaries of 187 US-controlled multinationals increased from just 46 in 1901 to almost 3 thousand in 1967; in 1979, over 4 thousand American corporations controlled more than 16 thousand foreign business enterprises (Vaupel and Curhan 1969, chapter 3; UBP 1979). When the gross annual sales of corporations are compared with the gross national products of many countries, we find that many of the largest economic units in the world are not states but corporations. "In these

terms, General Motors is larger than Argentina, the Ford Motor Company outclasses Hungary, and Royal Dutch Shell is more important than Turkey” (Ray 1979, p. 223). There is little doubt that transnational corporations are increasingly influencing the global political and economic order. The developing countries of the South are in turn calling for the activities of transnationals to be regulated and supervised as part of their own strategy for creating a New International Economic Order (a concept much more in keeping with the Force Field than the Copernican paradigm; Laszlo et al. 1978).

According to Kant (1938 [1785]), because rational nature exists as an end in itself, it follows as a “categorical imperative” that all human beings must never be treated as a means to be arbitrarily used, but as an end in themselves. In other words, all individuals should count equally in determining actions by which many are affected. In *Perpetual Peace* (1795), Kant argued that reason utterly condemns war, which only an international government can prevent. In effect, every person is a subject with his or her own “centre,” and the concept of a global pacific human society must supersede the tradition of disparate warring states.

At this point, however, we must recognize that the nation-state system has embraced the Hobbesian and Grotian philosophical traditions, not as yet the Kantian. We have shown that science and technology have created a sociocultural and geoeconomic field that is global in its dimensions and that affects every aspect of our lives. Also, within this field, new actors — the IGOs, NGOs, and transnationals — are playing increasingly decisive roles in the traditional nation-states. But the Force Field paradigm has not been recognized formally. To do so would require the creation of new political institutions and juridical norms to supersede the traditional nation-state system. We are still wedded to the Grotian

tradition and the Copernican paradigm, which are not “international” in the sense of reflecting a global society, but, more precisely, are “inter-national” (inter-state) in their structure and modes of behaviour.

The last half of the 20th century finds us in a state of profound culture lag. Science and technology are propelling us to function within a planetary environment; yet, society still uses the political and juridical tools that evolved in a geopolitical environment that was two-dimensional in space, prenuclear in power, and prerelativistic in its worldview. Because of this culture lag, our current era is a transitional stage between two paradigms — between “a dream that is dying” and “one that is coming to birth.”

**THE FORCE FIELD PARADIGM AND THE WAR-PEACE EQUATION** — In our century, the logic of Westphalia has become the illogic of Westphalia. Because of this, we contend that the nation-state system must undergo a profound attitudinal and institutional transformation. Why? The agendas of the United Nations organs and the Specialized Agencies provide daily irrefutable proof that the critical problems of humanity and the continuing viability of the biosphere must be addressed within a global context. The three following problems defy piecemeal, state-serving attempts at resolution. They cut across all national boundaries. They are based in the ecological and socioeconomic needs of all human societies rather than the unilaterally defined political interests of disparate states. They invoke Kant’s moral imperative. Even further, these problems are, by nature, systemic: they are interrelated and interacting, and must, therefore, be resolved within the parameters of a planetary society.

1. *Population and its Global, but Unevenly Distributed, Pressures* — Together with the environmental crisis, population could be the most critical issue in the decades ahead. The world's population will almost quadruple in this century to more than 6 billion; by the end of the next century, it could exceed 11 billion. Taken together, the industrialized countries of the North are approaching zero population growth. However, in the South, populations continue to increase — eventually, the people of the South will outnumber the people of the North by more than 5 to 1. Thus, the countries with the least developed agricultural and industrial technologies will have to contend with the greatest pressures in the people–food equation. It will require concerted, global action to avert endemic starvation, such as Somalia experienced in 1992.
  
2. *Space and Resources: the End of the “Infinite Earth” Image* — The Ptolemaic and Copernican paradigms were associated historically with European overseas discoveries and geopolitical annexation. There was always *terra incognita*, a frontier to be pushed back and new lands to settle, and this perception was complemented by an image of inexhaustible resources. Hence the deeply grounded belief in the “myth of superabundance.” In our century, however, the north and south poles were reached and Mount Everest was scaled — all *terra* has now become *cognita*. Finite spatial boundaries are in turn being matched by global limits to nonrenewable resources and by concerns about the planet's longer term food-growing capability and population-carrying capacity. Our resources are anything but “superabundant,” nor, unfortunately, are they equitably distributed among the continents.

3. *The Demand for "Fair Shares" of Planetary Resources* — The nation-state system has always maximized individualism. Juridically, it assumes the metaphysics of sovereignty; politically, a state's right to define and advance its "vital interests" unilaterally; and economically, to institutionalize and apply globally the doctrine of free enterprise. With their naval and military superiority, Europe's nation-states carved out great empires and employed their industrial technology to exploit indigenous human and physical resources. The geopolitical and geoeconomic consequences have been remarkable. Thus, the United States and Canada, with some 5 percent of the world's peoples, consume at least one-third of its resources — the industrialized North, with about one-quarter of the world's peoples, consumes over three-quarters of its resources.

The contemporary South–North confrontation and the demand of Third World peoples for a New International Economic Order calls for remedial action. A radically revised global system is needed. The allocation of physical resources, transfer of technology, and new priorities and patterns of aid and trade can no longer be left to the play of market forces or to bilateral negotiations between individual governments that are equal in juridical status yet all too often wildly unequal in political and economic stature. To arrive consensually at a new world economic order, such fundamental changes require supranational (regional and global) strategies negotiated at every stage by South and North together.

The systemic character of these crises can be seen in the accelerating degradation of our planetary habitat: its lands, waters, and atmosphere. We are all painfully aware of this

pollution; at the 1972 Stockholm Conference on the Environment, the countries of the South described it as the "rich countries' disease." Today, it is fast enveloping the Southern nations as they become both industrialized and urbanized.

Biospheric degradation transcends national boundaries. This has been graphically illustrated by the atmospheric pollution generated in the US falling as acid rain on Canadian lakes; in Ontario, falling on New England; in the United Kingdom, descending on Scandinavia. Obviously, neighbours should not dump their garbage in each other's backyard, but the problem of protecting the biosphere has long ceased to be only bilateral in its ramifications. It calls for stringent global remedies — remedies that, to be effective, must also be enforceable. A logic other than that of Westphalia would argue that the planet's life-sustaining biosphere must be given a much higher priority than the sovereignty of any individual state.

The crucial character of these problems raises in turn the factor of conflict — part of the human condition since Palaeolithic times. Traditionally, competition and wars were largely due to interstate rivalries. In today's world, rivalries and the potential for conflict have become progressively economic and ideological, and are essentially transnational in nature. After World War II, hostilities occurred to a large extent as a concomitant of decolonization; colonial wars and their aftermath of domestic upheaval were *intrastate*. It was in this sphere that peacekeeping as a conflict-management technique of the United Nations has played a major role. But now, the process of political decolonization is all but completed and we can envisage the next stage: the need for *interstate* conflict management, especially among former colonies, which are all too often politically unstable and

economically unviable. Here, we must expect not only continued domestic and interstate political friction but also economic competition for resources whose costs rise in proportion to their progressive scarcity.

Still another area of concern stems from the evolution and asymmetrical character of the nation-state system itself. Emerging from their medieval antecedents of religious and political dominance by the Church and the Holy Roman Empire, fledgling western European nation-states fiercely embraced the concept of national independence. In recent history, they have evolved to the stage of interdependence, as manifested in the European Community. But, in the Third World, scores of countries have just emerged from dependence and are jealously protecting their hard-won independence and, with it, the perceptions and ambitions of the Ptolemaic paradigm. Within this historical asymmetry are profound psychological misperceptions, fears of economic neocolonialism, and ideological tensions. In short, the South-North confrontation, with its grave potential for physical conflict and even a resurgence of racism, will persist unless and until all the world's regions accept and implement the concept of interdependence — the operative term in the Force Field paradigm.

There is a paradox to our quest. We are trying to reform the dangerous situation created in today's world by the illogic of Westphalia; yet, we are limited to using modalities based upon Westphalian concepts. This is the same paradox in which the United Nations finds itself, logically extending to both peacekeeping and peacemaking. Peacekeeping cannot hope to maintain the Copernican paradigm; it must be employed in a transitional period to dampen the chances of recourse to Hobbesian violence, which tends to globalize in our interdependent world. As a corollary, just as a truce

to hostilities is only a stopgap pending political resolution, so is peacekeeping only a first step. Together, peacekeeping and peacemaking can sequentially bring into play the full apparatus of the United Nations and its Specialized Agencies.

The need to establish a nexus between peacekeeping and peacemaking becomes apparent when we examine the two terms. Peacekeeping is associated with collective security, under the aegis in the first place of the Security Council. In this regard, it is strongly associated with maintaining a geopolitical equilibrium. Peacekeeping is part of a machinery that assesses all developments in the field primarily within a political-military framework. The goal is to maintain or reestablish the overall balance of power, just as was done by Security Council resolutions in the Persian Gulf War.

Some major organs of the United Nations, such as the Economic and Social Council, are basically counter-status quo in their purposes: they were created to alter drastically the economic and social standards of billions of people. Here we encounter peacemaking. Peacekeeping has a natural affinity with the concept of "order"; peacemaking, with the concept of "justice." Unless justice is implemented in the economic and social spheres, no amount of AK-47s or tanks will be able to maintain "order."

Applying the constant of change to the turbulent decades ahead, we must recognize peacekeeping and peacemaking as related and integral components of a New World Order. One way might be for this nexus to become a dual strategy. At a United Nations Special Session on Disarmament, Pierre Trudeau, then Prime Minister of Canada, called for a new "strategy of suffocation...to halt the arms race in the laboratory." He envisaged impeding the further development of new strategic weapons systems by freezing the available amount of fissionable material; by preventing any

technology that may be developed in the laboratory from being tested; and by reducing the funds devoted to military expenditure. A reversal of the arms race can not only logically call for a strengthening of international machinery for conflict management: peacekeeping. It must also make available financial, scientific, and technological resources for what we might call a "strategy of vitalization" to assist the developing nations: peacemaking. Industrialized countries have promised to provide 0.7 percent of their respective gross national products to the United Nations for development purposes. Only by living up to this collective pledge can the North engage in the kind of peacemaking that will satisfy the South's demand for justice in a new and equitable world order.

## THE SPECTRE OF POSTINDUSTRIALISM

Bertrand Russell once speculated that if Henry VIII had not fallen in love with Anne Boleyn, the United States would not exist. His reasoning was simple: without the Boleyn affair, England would not have broken with the papacy; instead, it would have recognized the Pope's gift of the Americas to Spain and Portugal. Hence, what is now the United States would have been part of Spanish America.

Russell may have been mistaken to imagine that the course of history could have been so easily changed. At the same time, it is wise to remember that what seems inevitable seldom is. Today, the socialist ideal is in eclipse. In Europe, communist parties have crumbled as fast as the Berlin Wall. In the Soviet Union, the latter half of 1991 saw a second Russian Revolution, the demise of the once all-powerful Communist Party, and the decentralization of economic planning and power from Moscow to some 10 "sovereign" republics — moves that were designed to transform an erstwhile superpower into a congerie of states linked in a version of the 12-country European Community.

Meanwhile, in the South, governments that styled themselves socialist have been quick to abandon their doctrines in favour of the brave new world of free market economics. For their part, social democratic parties have been reduced to fighting a rearguard action as they attempt to prevent the erosion of social welfare programs. Yet, despite these signs of socialism's malaise and fashionable talk of the inevitable triumph of liberalism and "the end of history," we may be on the verge of a renewed ideological debate, one that could see the legitimacy of capitalism questioned more profoundly than ever before.

The bipolar international order that emerged in 1945 exists no more. The Gulf War of 1991, in which a US-led coalition, with United Nations approval, confronted the expansionist policies of Iraq, was trumpeted as initiating a New World Order. Yet it is not at all clear whether this new order is to be unipolar (dominated by the United States), multipolar (dominated by several countries of the North, including Japan and Germany), or, less likely, a world order in which countries of the South will at last be able to assert a real measure of self-determination within a larger cooperative world community of nations. The Gulf War was perceived by many as a war of the North against the South, an attempt by the developed nations to secure their control of the Middle East's vast oil reserves. From both ends of the political spectrum, some commentators saw the war as an opportunity for the United States to assert its political and economic global hegemony following the collapse of the Soviet superpower.

After an interlude spanning most of the 20th century, in which it was challenged by the forces of state socialism both in the North and as a model of development in the South, capitalism once again reigns supreme on the international stage. It seems clear that, in the near future, capitalism will have a free hand in shaping the direction of the world's economy and relations between South and North. It is not clear, however, how long this situation can go unchallenged. The reasons lie in the very nature of industrial society and its relation to democratic aspirations and to ecological viability.

The demise of Stalinism must be understood within the historical context in which communist movements flourished in this century. In the early years in Russia, and later in countries like China, Cuba, and Vietnam, communism

was an ideology of nationalism and modernization. It was an ideology taken up by vanguards of intellectuals as a tool for mobilizing underdeveloped nations to “bootstrap” themselves into the industrial era as autonomous participating societies, rather than as exploited hinterlands of the already industrialized powers. As such, it was a rival mode of industrialization, not an alternative to the values of the industrial era.

Stalinism, not surprisingly, failed to beat capitalism at its own game: the wholesale exploitation of nature for the purpose of capital accumulation and the efficient deployment of human and technical resources to that end. In this light, it represented little more than a minor historical detour in the ongoing industrialization of the world. In effect, the Soviet Union attempted to preserve the rationality and efficiency of the individual capitalist enterprise while dispensing with the drawbacks of the marketplace, among them economic crises and the inequitable distribution of society’s wealth. The problem was that without the carrot-and-stick discipline of market competition, production efficiency could no longer be guaranteed. Although the Soviet Union did manage to reduce income disparities and to guarantee the basics of life to all its citizens, it also resorted to political exhortation and coercion in a vain attempt to catch up with the material productivity of capitalist nations. In general, the Stalinist model of development failed to provide high levels of material well-being. As well, its centralist and hierarchical structure proved incompatible with the widespread desire for the democratization of cultural and political life in those nations under its sway.

The collapse of state socialism would seem to be recognition of the fact that the technical task of managing industrial society is better entrusted to corporate capitalism. The most striking feature of the Gorbachev era in the Soviet

Union was not just the rejection of Stalinism but also the lack of any vigorous and agreed-upon vision of a socialist alternative. The upshot has been that capitalism is bound to carry the day by default. True, a few economists and intellectuals around Gorbachev saw *perestroika* as a return to Lenin's New Economic Policy of the 1920s — as one of them put it, the Soviet Union had to move “forward to Lenin.” For them, the goal was a “market socialism” that turned its back on Stalinism without restoring capitalism. For this to occur, however, democracy had to come to the workplace and not simply be limited to parliamentary elections. In any circumstances, this would have been an undertaking of great difficulty. Without a clear articulation of the path to be followed toward such a goal and given the lamentable state of the Soviet economy and the ethnic schisms tearing at the fabric of the Union, market socialism was always an improbable outcome of the Soviet crisis. And even if it had been achieved, would the Soviet Union have escaped the logic of industrialism?

For André Gorz, the transition to a truly postindustrial society would mean ending the domination of society by the “productivist” rationality that has fundamentally characterized industrialism. To radically enlarge the scope for individual and collective self-determination, the imperatives guiding the efficient deployment of modern productive forces must be circumscribed within limits dictated by maximization of the “realm of freedom”: that area of life where individuals are not constrained by the imperatives involved in producing the basic necessities of life. What is required is “a cultural revolution which will eliminate the principle of performance, the ethic of competition, accumulation and the rat-race at the level of both individual behaviour and social relations, replacing them with the supremacy of the values

of reciprocity, tenderness, spontaneity and love of life in all its forms" (Gorz 1982, p. 85).

In what we may describe as "traditional" socialist thinking, a liberating, postcapitalist society will completely abolish externally imposed (heteronomous) social blockages. In particular, the work process, which under capitalism has been an arena of profound alienation, will become a principal mode of self-determination. Through it, individuals will realize their creative capacities and satisfy their needs for self-expression. It is only necessary, in effect, for command of industry to be in the hands of the workers — individual and collective liberation of the working class follows.

Gorz denies this. We must recognize, he says, that the effective deployment of modern society's full productive power requires that the work force be organized like an army, with a hierarchical and fragmented division of labour. In the complex, bureaucratic, and machine-like world of the modern economy, no one, not even managers or capitalists, holds power in the sense of being able to act as a self-directing subject. And, for Gorz, a return to an economy based on craft skills is out of the question — it would be incompatible with the requirements of modern technology.

Gorz's vision of a liberated society has a "dual" character: the sphere of heteronomous, socially determined work is recognized as necessary, but is increasingly subordinated to the sphere of autonomous activity, both individual and collective. He sees the sphere of heteronomous work as providing the "convivial tools" that allow individuals the maximum range of possibility for autonomous activity during their free time.

Gorz notes that a reduction in (heteronomous) work time is a necessary but not sufficient condition for autonomous behaviour. Free time must be constructively used, not simply

filled by “the programmed distractions of the mass media and the oblivion merchants.” This is a potentially major problem; whether one believes that a “brave new world” of essentially trivial pleasures is likely to be refused depends, perhaps, on one’s assessment of human nature. As Herbert Marcuse asked about advanced capitalism, if a society can make most people satisfied with their lives as consumers, what reason is there to think that they will rebel just because they have lost their autonomy?

Recent changes in what was the East Bloc have led many Western commentators to proclaim everything from the death of socialism to the end of history itself. Socialism is said to be no longer attractive because the limits and counter-productivity of government intervention in the economy have become apparent. History is said to be coming to an end, not in the sense that it is folly to believe in human progress, but because all nations are coming to realize that freedom, democracy, and the production of material wealth require capitalism as their basis. For those who may remain unconvinced, other means of persuasion are in order — the cynical brutality of the US’s economic and military assault on Sandinista Nicaragua showed that the eagle was not about to follow the bear’s example of proclaiming the “Sinatra Doctrine” and allowing former satellites to “do it their way.”

In his widely publicized article, “The End of History?,” Francis Fukuyama (1989) argues that we are seeing “the unabashed victory of economic and political liberalism.” According to Fukuyama,

What we may be witnessing is not just the end of the Cold War, or the passing of a particular period of postwar history, but the end of history as such: that is, the end point of mankind’s ideological evolution and the universalization of Western liberal democracy as the final form of human government.

Whether or not one would welcome such a prospect, there are strong reasons to doubt Fukuyama's thesis. Liberalism is not synonymous with capitalism, but historically, at least, has been closely tied to it. Capitalism could not fail to look good when measured against Stalinism. But, with the demise of Stalinism, the defects of capitalism will inevitably be subjected to increasing critical scrutiny. And capitalism has two major, and perhaps fatal, defects.

First, as an economic system, capitalism is essentially undemocratic, despite (or because of) being centred on the free market. Capitalism is built on the fundamental split between those who control economic decision-making and those who do not. The decision-makers control the means of production; the majority does not. Capitalist economies may be free, but they are hardly democratic: the freedom to accumulate capital militates against the democratic distribution of power in society. To be consistent, those who advocate democratic pluralism in the economy must also advocate democratic constraints on the operation of markets.

Second, like a chain letter that must ceaselessly expand if it is not to collapse, capitalism appears wedded to endless growth. But will our planet's ecosystem tolerate endless growth? The health of capitalism and the health of the planet may prove mutually exclusive. The amazing power of capitalism to transform our environment in order to surround us with material goods is proving to be a very mixed blessing.

Thus, the defects that proved the undoing of Stalinism — lack of democracy and the inability to promote a desired quality of material life — are likely, *mutatis mutandis*, to threaten the future of capitalism. The Cold War triumph of capitalism over its mirror image is hardly something to crow about. State socialism was founded on many of the same

assumptions as capitalism — the failure of state socialism reveals a rocky road ahead for its capitalist rival.

A spectre is haunting capitalism: the spectre of post-industrialism. If the mark of the industrial age has been rationalization, whereby society is organized through a division and coordination of activities to achieve ever greater productivity, then “postindustrial capitalism” is surely a contradiction in terms. With due respect to Daniel Bell (1973), it is doubtful that a society that has fundamentally rejected the assumptions of industrialism can be either capitalist or state socialist. And, if the future is dim for economic systems based on the logic of industrialism, what of the political ideologies that have matured in the industrial age?

As heirs to Enlightenment reason, both liberalism and socialism have sought to realize the ideals of liberty, equality, and community. They have based themselves on the belief that human reason could shape a better world, both materially and morally. But liberalism’s historical adherence to the principles of the capitalist marketplace has resulted in a contradiction. The right of individuals to accumulate wealth and power to satisfy their private desires has led to inequalities of wealth and power in society — inequalities that threaten or deny the very liberal ideal that all individuals should equally have the opportunity to satisfy their desires and develop their individual capacities.

This contradiction in liberalism has been the focus of the socialist critique. Socialism claims that, in hitching itself to capitalism, liberalism must inevitably fail to realize its ideals. Only by transcending the dictates of the capitalist market can the fullest possible development of all individuals become possible. But socialism too has run aground in hitching itself to an unsuitable economic system. The state, which for many

socialists was to speak and act for the interests of all citizens, has proven too often to speak only for itself.

As George Grant observed in *Lament for a Nation* (1965), liberalism proposes that the social order is merely an artificial convenience to further the right of individuals to do whatever they want. It was his thesis (p. 68) that

The impossibility of conservatism in our era is the impossibility of Canada. As Canadians we attempted a ridiculous task in trying to build a conservative nation in the age of progress, on a continent we share with the most dynamic nation on earth.

It need hardly be said that by “conservatism” Grant did not mean a doctrine that judges everything by its market value — quite the opposite.

In practice, individualist ideology — the glorification of the self — is employed to legitimize the dominance of the market in social life, not to encourage diversity of thought. Perhaps no industrialized nation has a narrower spectrum of political debate than the United States. It is indeed ironic, and instructive, that, in the country where the words “freedom” and “liberty” are chanted ad nauseam like mantras, there has been nothing politically more damaging in recent years than to be labeled a liberal.

Conservatism and socialism are distinct from liberalism in the emphasis they place on community as the context in which the individual can find fulfilment. Astutely, Grant recognized that socialism is akin to conservatism in implying a doctrine of human good: there are ways of life through which human beings can fulfil themselves and other ways through which they cannot. It is no coincidence that Canada is at once more conservative and more socialist than the United States. What Grant said of conservatism in Canada could be said of socialism in this century, for it can be argued, as William Morris did a century ago in his utopian novel *News from*

*Nowhere*, that a truly egalitarian society can take firm root only after the age of industry and progress has been transcended.

If utopian visions are out of fashion, it is at least in part because of the triumph of the liberal notion of progress as the emancipation of the individual. Progress is not seen as a movement toward a society founded on a universally accepted concept of human good, but away from everything that limits the rights of individuals. Environmental crisis is bound to undermine radically the liberal notion of progress, and to suggest instead that progress must be toward a condition of harmony between society and its natural environment. Here the maxim will be "nothing can be good that violates the sustainability of the ecosystem." With this in mind, it can be forecast that the triumph of liberalism, proclaimed as "the end of history," is likely to prove short-lived.

What we may be witnessing is the breakdown of the consensus that has governed the North's capitalist societies since 1945. This consensus was built around an alliance of the state and big business, coupled with social welfare measures designed to cushion the population at large from the worst effects of the system. Three factors — the demise of the Stalinist "other," the environmental crisis, and the threat to living standards posed by the globalization of capital — will make it increasingly difficult to sustain the internal ideological cohesion of the liberal nation-states. This breakdown currently manifests itself in the guise of widespread public confusion and cynicism; but the emergence of radical political alternatives may not be far behind.

In the short term, radical calls to dismantle capitalist structures are unlikely to carry the day. Within the parameters of capitalism, social democratic governments are likely to flourish in the North as state intervention becomes more,

rather than less, necessary to secure jobs and living standards. Whether such governments can successfully meet the challenge of providing or maintaining a desired quality of life will largely determine the extent to which more radical ideologies take root. In the South, horrendous economic and demographic problems, which are only likely to get worse in the coming decades, will lend themselves to political instability and dictatorial leaders. Unless the North is prepared to stop draining the South's resources, the negative consequences of this will be felt by the whole world.

Where large numbers of people feel threatened economically and long for strong leadership, a resurgence of fascism is possible. Current events — such as the policy of “ethnic cleansing” proclaimed in 1992 during the re-Balkanization of Yugoslavia — dramatically illustrate the power of nationalistic and ethnic appeals. Yet despite, or even because of, the collapse of state socialism as a credible ideology, the ideal of a democratic and classless society will not be disposed of easily. A class-divided society is one that systemically privileges some groups of people at the expense of others. A classless society is one in which such systemic inequalities do not exist; thus, it allows equal opportunity for individual development. In such a society, there are no structural barriers to the enjoyment by any individual of the full range of social possibilities, although talent, skill, knowledge, decency, greed, wisdom, and folly must still affect individual development.

When the ideological challenge to capitalism from the left is renewed, the socialism that emerges is likely to be radical, democratic, and green. Radical because, unlike social democracy, it will demand the abolition and not simply the modification of capitalism. Democratic because, unlike Stalinism, it will be thoroughly committed to the political and economic

self-determination of individuals and communities. Green because its driving force will be capitalism's perceived inability to resolve the growing environmental crisis.

In its commitment to individual and social self-determination, green socialism will challenge liberalism's claim to be the viable road to liberty. Yet, committed as it will be both to individual liberty and to the harmony of individuals with each other and with their natural environment, green socialism will contain a duality — either a fateful contradiction or a creative tension between its libertarian aspect and its ecological vision. It will represent a gamble that human nature, freed from systemic political hierarchies, will choose social and ecological harmony rather than a renewed drive for domination.

One should not underestimate the potential problem posed by this duality, just as one should not underestimate the resilience of capitalism. Even if there is a strong desire among the peoples of the North for ecologically sensitive economies, it is unlikely that the peoples of the South, clamouring for their fair share of the world's economic pie, will be persuaded to abandon their claims by appeals to consider the health of Gaia or the good of future generations. Demands by the South for equality of condition with the North will provide the ultimate test of whether capitalism can provide the good life for all. And unless a way can be found to limit further degradation of the biosphere, this will provide the ultimate test of the planet's ecosystem to sustain economic growth. Certainly, it is no longer possible to see the North as the sole arbiter of its own future. What life span remains for industrial capitalism? The answer to this question depends in no small measure on the evolving relations between South and North.

Yet, the inherent problems that beset capitalism make the reemergence of utopian visions almost inevitable.

In fact, when I consider any social system that prevails in the modern world, I can't, so help me God, see it as anything but a conspiracy of the rich to advance their own interests under the pretext of organizing society. They think up all sorts of tricks and dodges, first for keeping safe their ill-gotten gains, and then for exploiting the poor by buying their labour as cheaply as possible.... Thus an unscrupulous minority is led by its insatiable greed to monopolize what would have been enough to supply the needs of the whole population.

So wrote Sir Thomas More in *Utopia*, a 16th-century fantasy decrying the new capitalism and describing an egalitarian alternative (More 1972 [1516], pp. 129–130). Henry VIII had More executed for treason after Sir Thomas refused to condone Henry's break with the papacy and marriage to Anne Boleyn.

## A NEW NORTH–SOUTH JOINT STRATEGY

*If you don't know where you're going,  
you'll wind up somewhere else.*

— Casey Stengel

In the 20th century, the North–South relationship has evolved from zero-sum, win–lose to non-zero-sum, lose–lose — mutual vulnerability. The traditional growth ethos that inspired and sustained the North for several centuries, and that the developing countries of the South sought to emulate, has become counter-productive. The planet's physical endowment does not accommodate this expansionist worldview. Instead, it is experiencing negative growth: resource diminution, environmental degradation, and species elimination. In short, society and the environment, in both South and North, are all experiencing forms of development that can no longer be sustained.

When we examine the ideological underpinnings of this era, it becomes clear that current economic behaviour — articulated by such buzz words as “competitiveness” and “leaner and meaner” — is based squarely on the transfer of biological concepts in Darwinism — “adaptation” and “survival of the fittest” — to the societal domain. Hence the validity of the term “Social Darwinism.” Relating Social Darwinism to game theory, we can see that countries in the North have engaged in Social Darwinist, win–lose competition among themselves, with some players winning, and others proportionately losing. Yet, taken together, the countries of the North have thus far been winning at the expense of the South's developing regions. Now, however,

South and North progressively find themselves in a lose-lose relationship.

In their attempts to make a 180-degree swing to mutual sustainability, governments and international agencies such as the World Bank will be challenged to adopt an economic strategy consonant with the recommendations of the Brundtland Report (WCED 1987). This includes efforts to enable the South to mount developmental programs in its attempts to catch up from its historical lag and dependency, and requires the North's assistance through a mixture of aid and trade.

The Brundtland Report calls for a five- to tenfold increase in industrial and economic development to ensure that the South raises its living standards materially. Yet, the Report does not call for the South to reach parity with the North, which, for its part, has not been asked to cut back on its own resource consumption. With this kind of scenario, we can expect that the countries of the North will continue to compete with one another as well as with Southern economies. At the country or "micro" level, the winner-loser split will continue. Similarly, the industrializing countries of the South will also be competing at the "micro" level — in turn, producing winners and losers. However, at the global or "macro" level, both the North and South hope to be winners.

So far, so good. But, disregarding the large number of "ifs," we must remember that this scenario is based squarely on the concept of "growth," specifically, the myth of superabundance of physical resources. Continued belief in this myth is no longer credible. The planet's resources and ecosystem cannot indefinitely sustain the existing situation: negative growth. Consequently, the spectre of non-zero-sum, lose-lose must sooner or later — and in all likelihood, sooner

— haunt the “macro” North and South segments of global society: non-zero-sum, lose-lose is certain to dominate the relationship between the planetary environment and our global society.

To borrow a cliché from the economists: what is our “bottom-line” conclusion? Any feasible, 180-degree turn-around inevitably has to encompass two elements:

- Sustainability of our global environment and
- Sustainability of our global society.

We must begin by getting our priorities straight. First, even though critical ecological problems may start in a given country, they do not respect national boundaries. Consequently, no government can logically claim that it is devoid of responsibility to the world community for how its activities affect the environment.

Second, our planet came into existence billions of years ago; the biosphere, with its multitude of faunal and floral species, in turn existed millions of years before our genus evolved. And it can continue to exist without us — arguably, it might be far better off. But the converse does not hold: we cannot exist without the biosphere of which we are an integral part. In the final analysis, humanity’s own survival must depend upon giving first priority to the continued viability and well-being of our planet’s environment.

Third, we must adopt a new attitude towards “nature.” Back in 1864, the American conservationist, George Perkins Marsh, warned that only a strong commitment to conserving the forest and other natural resources could save the United States from destroying its ecological endowment. “Man has too long forgotten that the earth was given to him for usufruct alone” — that is, to enjoy the benefits of property belonging to another — “not for consumption, far less for profligate waste” (Marsh 1967 [1864]). As John Muir and

later preservationists have emphasized, the environment is not ours to destroy in the name of “progress.” Instead, our role must be one of stewardship to preserve and enhance it for all species and future generations.

Making the global environment sustainable is the first, and primary, half of the equation. The second half calls for making sustainable the economic and societal development of both North and South. Here, we have to address a crucial question: as called for in the Brundtland Report, just how sustainable is “sustainable development?” This term, now repeated devoutly by the North’s politicians and economists, makes sense only on the basis of the following criteria:

- It must be grounded on the primacy of environmental sustainability;
- It must enable the South to develop so as to sustain economic growth and retain cultural autonomy; and
- It must recognize the necessity for the North to cut back on its current disproportionate and profligate consumption of global resources.

Fulfilling these criteria challenges fundamentally the definition of “development” that the North has promulgated. The history of technological and developmental strategies has all too often failed to account for the needs of specific cultures, especially in the South, and their long-term effects on ecological systems. Again too frequently, “development” has become “maldevelopment” with the imposition of the North’s agenda upon its recipients. To judge a culture or society to be “underdeveloped” implies that there is only one acceptable route of societal evolution, one that has already been demonstrated by the North’s industrial countries. Because of this ethnocentric hubris, an inferior status is assigned to those regions that are still “developing” — a status that will remain until some measure of economic and

technological parity with the North has been achieved. Meanwhile, to define development in terms of the North's nomenclature is to subscribe to the expansionist worldview and its economic strategies, which are currently raising havoc with much of the planet's endowment of resources and its homeostatic processes.

We need a new, globally oriented definition of sustainable development and, with it, an overhauling of our traditional concepts of "aid." It is increasingly apparent that many of the "poor" areas of the South constitute the planet's richest regions in terms of biological and environmental diversity as well as indigenously invented skills for managing regional ecosystems. These skills have all too often been ignored as "prescientific" and hence unscientific. But, belatedly, a growing appreciation of traditional knowledge and techniques is taking place. Consequently, instead of regarding "foreign" aid as basically unidirectional, emerging strategies for societal and environmental sustainability should be recognized in terms of "mutual" aid. The appropriate transfer of environmental strategies and ethics, social relationships, and scientific and economic technologies should be regarded as two-directional on a South-North axis.

The ideologies of the industrial nation-state appear incapable of coping with modern-day developments. Until recently, faith in science, technology, and the mechanistic view of Newtonian and Darwinian theories remained dominant. It was expressed in a conjoined set of beliefs: that infinite economic growth is both feasible and desirable; that what is technologically possible is also humanly beneficial; that individual interest and public good coincide; that humans are basically economic actors; that no responsibility attaches to long-range consequences; that the Earth is

practically inexhaustible and always redeemable; and that nations are independent and autonomous.

However, the classical paradigm of modern industrial nation-states no longer corresponds to reality. The evidence before us shows that we must change our technologies. This is especially true for energy-generating technology. Although the rate of energy use can increase into the foreseeable future, it must stop short of surpassing the thermal and radiation pollution thresholds of the biosphere. This is also true of the extraction and use of raw materials. Recycling and substitution can extend the life expectancy of nonrenewable materials, but upper thresholds are certain to be reached. Moreover, our capability of environmental control must shift from unreflective exploitation to a carefully calculated harmonization of environmental limits and human interests. Population growth curves cannot indefinitely continue.

We are already suffering from information overload. The historical curve of the information explosion is not infinitely sustainable. Our facilities to produce, transmit, and store information have grown exponentially, but our brains — the receivers of all this information — are still roughly those of our Neolithic ancestors. They cannot continue to be overloaded without adverse consequences. Even the amount of information that machine systems can process has its upper limit, notwithstanding growing sophistication in electronic technologies. For these reasons, complexity in social organization also has upper bounds. At some point beyond foreseeable levels, complexity is no longer able to generate order but breaks down into chaos.

We are today in the midst of yet another quantum shift in societal evolution, one of seismic proportions. It is occurring on a global scale; it is transforming our planetary environment; it is changing forever the lives and prospects of all

peoples in both the South and the North. Given the evidence that humanity has evolved not only its technologies but also its values and beliefs throughout its turbulent history, there is no reason why it should be incapable of doing so again within the next few generations. We are at a crucial juncture — humanity has, for the first time, reached the global stage of societal development. It can no longer grow without thought and discrimination; it must henceforth carefully chart its own evolution. Men and women everywhere need to recognize this ecumenical state of humanity and adjust their goals, beliefs, and values accordingly. History has led us to where we are today. We must now find the way to a sustainable and humane future.

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They face an uncertain future.**

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