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Uncertain Steps: The Prospects for Contemporary Globalization

Globalization as a term attempts in a single word to conceptualize thousands of diverse processes, places, cultures, and events that remain in constant flux. The scale and complexity of what it attempts to describe do not fit comfortably into any single word. But if an easy definition for so many forms of human activity remains elusive, the phenomenon of globalization in its varied forms itself remains quite real and pervasive in our lives.

English language experts urge readers to exercise caution with words ending in ion, what they call nominalizations. The use of such words promotes ambiguity. In the case of globalization, we see that over time the noun globe was appropriated to create the verb globalize, which then became the longer noun globalization -- as if it embraced a generalization that describes persons, places, or things -- however diverse and vague -- that are recognizable, and also acknowledges all of these as parts of an ongoing process. While you will find ample analysis to help define Globalization in our Introduction, and still more in detail as you read further, you might want to note that globalization suggests opposites -- stasis and change,

The term globalization has been responsible for an entire vocabulary of concepts that accompany it, terms such as outsourcing, transnational corporations, neoliberalism, ethnoglobal, commodification, glocalization, deglobalization, global warming, deterritorialization, foreign direct investment -- each promising a glimpse through the fog of globalization but each raising its own need for definition.

The inherent subjectivity of so overarching a term as globalization leaves us aware that the concept -- its realities, and its illusions -- remains elusive. As we explore its use we understand that globalization will continue to change forms no matter how well each of us wrestles with it. And in usage, just as you feel you have firmly grasped it, expect it again to change form.
Early records from Egypt, Persia, Greece, the Levant, and China show that trading with others at a distance dates back nearly 5,000 years, to somewhere around 2800 BCE, (Before the Common Era). As geographer Jared Diamond points out in his excellent work *Guns Germs, and Steel*, societies that experience moderate to intensive trade interactions with other societies historically have done better at creating useful new technologies and at realizing their own societal and economic potential. In a way globalization reflects a reversal of the random historic process Diamond describes. We presently live in an era in which dominant societies have deliberately distributed economic, transportation, and communications technologies more or less universally to better serve their own trade patterns throughout the world. We use the word Globalization to describe how the consequences of this distribution radiate into cultures, economies, environments, politics, and practices regionally and globally, and how those generating these catalysts either recognize or fail to acknowledge how they have knitted the world together.

In his book *The Human Prospect*, authored well before globalization intensified and took its present forms, economist Robert Heilbroner observed that “all the processes of industrial production . . . have one characteristic overwhelming effect – their capability of enormously magnifying human productivity by endowing men with literally superhuman abilities to control the physical and chemical attributes of nature.” And therein lies the pressing question that globalization now raises. It has succeeded in lifting hundreds of millions out poverty and made it possible for our species to keep pace with human needs over decades during which we have added some 76,000,000 more humans annually – now a total of 6.6 billion. However unevenly those in control have distributed its benefits, globalization has registered remarkable results. On the other hand, onrushing globalization and its explosive productivity have much to account for on the darker side of the ledger. More, as it continually extends into the most remote places on earth, globalization now threatens to bring down nature, to seriously impair or destroy vast ecosystems and resources that all species cannot afford to lose. We see this frightening prospect
unfolding with the advent of global warming and sea level rise, challenges precipitated by the successes and accompanying excesses of globalization.

We have entitled this book *Uncertain Steps: The Prospects For Contemporary Globalization*, because it surveys some of the many parts of this worldwide phenomenon and its ongoing accomplishments. Nonetheless, some of the evidence you will encounter herein reveals global security being put at risk by onrushing patterns in globalization. Consequently, the authors feel it essential to ask if globalization maybe inherently self-destructive. If so, has it the capacity to limit its excesses before they topple the global natural resources on which globalization relies?

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Honolulu, August 2007
Chapter One
The Promises and Burdens of Globalization:
Contested Meanings and Implications

In speaking of globalization, we often find ourselves in a quandary. On the one hand the term is so generally used that most people feel they know what it means. On closer examination, however, it has many sides to its definition, and people talking about globalization may be referring to quite different things. Many of its definitions, while valuable and partially correct, omit significant parts of the phenomenon we call globalization. In order to clarify a general concept of globalization, then, this introductory volume starts by examining some of the more common uses of the term,

Multiple Definitions

Out of the many definitions developed for the term globalization, the following six are particularly useful to examine.

--Nothing New: Globalization as Global History. Some people do not see much value in introducing the term globalization, an attitude that the British sociologist Anthony Giddens describes as the “skeptical” view of globalization. (Giddens, 1999). Those who subscribe to Nothing New consider today’s greater interactions among nations simply as a continuation of dynamics that began long ago. For example, diverse peoples worldwide historically have used everything from camel trains to tall-masted sailing ships to trade and communicate with one another across vast distances. Sailing ships gave way to steamships and airplanes, and communications moved from letters to telegraphs and telephones to today’s worldwide instant internet connections. Nothing New suggests that all of these current systems simply have increased or intensified what has gone on for centuries. In this view, history reveals repeated episodes or “eras” of globalization, each building on those that preceded it.

The political economist Barry Gills (2001) identifies globalization in history as no different from forms of capitalist exchange present throughout the world over several millennia. According to Gills, contemporary globalization represents the “working out” of these processes developed so long ago.

--Globalization as the world capitalist system. The American sociologist Immanuel Wallerstein has created a complex analysis of the world as it has developed over the past five centuries. In this view the modern world was “created” by the powerful expansion of European power as it developed complex capitalist influences throughout the world. Organized capital, with its systems of investment and production, and its way of life, has increasingly dominated the economic and social life of each culture that European and American capitalism have contacted. This broad system approach seeks to “explain” the deep
structure of interlinked world development by examining how capital itself continually changes and reshapes the cultures and lives of peoples involved in global exchange. (Wallerstein, 1974.)

--Globalization as Extended Internationalization. Many people use globalization as a term essentially synonymous with internationalization or internationalism, i.e., how nation-states and the agencies and businesses within them interact. (Here nation-state differs from similar notions of “nations” which for unique reasons may not be identified with states, e.g. Kurds, Palestinians). Within this view globalization refers to what nations do in interacting with each other, e.g. economic trade, managing immigration flows, settling disputes, pursuing common interests, etc.

Because every populated geographic area of the world is organized into some form of government, and is usually identified by the governmental authority in charge of it, this Internationalization view argues persuasively from known points of reference. From a different point of view, however, internationalization ignores some significant changes in the forces moving globalization. For example, in the current era transnational businesses, institutions, and global processes often operate outside of the policies and interactions of nation-states that the internationalism view uses to describe globalization. As we proceed, we hope this important difference in kind will become clearer. We will reconsider it at the end of this chapter.

--Globalization as the increased circulation of goods, services and symbols. This common interpretation of globalization refers to the extent that our daily lives increasingly rely on goods, services, and symbols that we receive via trade with distant places. By the same token, what we produce is traded and integrated into the daily lives of distant peoples. In this view globalization is synonymous with the “world as a common marketplace”, wherein the “things” being exchanged and consumed range from high end industrial manufactured parts, to health products (e.g. pharmaceuticals), to clothing, food and other consumables, to information services, to a complex array of symbolic information products, (e.g. film, television, print materials, telecommunications, etc.). (Barnet and Cavanaugh, 1994)

--Globalization as Americanization. Outside the United States many people perceive globalization as just another term for the increased domination of the world’s economy by the United States through its primary transnational corporations, its control over nominally “international” bodies such as the World Bank, the World Trade Organization, The International Monetary Fund, the regional development banks (such as the Asian Development Bank), and the persistently active projection of American military power. Within this view the term globalization actually has less diversity and difference than the breadth of the term might suggest. This view sees globalization as primarily the exercise of American political, economic, military and cultural power.
Globalization as a Distinctly Modern Phenomenon. This view, held by many researchers and commentators on globalization, suggests that contemporary globalization dynamics build on all of the foregoing definitions, but that it is also comprised of many new influences created as a result of discrete and identifiable changes over the past forty to fifty years. (Giddens, 2000)

Globalization As A Modern Phenomenon

This text takes the perspective that contemporary globalization can be identified via distinctive features that have emerged over the past fifty or so years. However, it is also our view that each of the other ways of categorizing or explaining globalization contributes significantly to our understanding of it. It is not that these other views are in error, but rather that they use particular lenses that illuminate yet limit the view of some forces within the complex phenomenon that we call globalization. For example, the world has been building in many extraordinary ways from trade practices that were developed deep in our historical past, including the invention and growth of the nation-state as it affects trade. The extraordinary technological innovations of the nineteenth and early to mid-twentieth centuries set the stage for what would become called variously the “information age” or the “network society”. Nineteenth century imperialism organized the world on the basis of European and American political, economic, and military power. The wars of the twentieth century were truly "global" in terms of the aims of some the protagonists, and certainly global in terms of their effects.

The phenomena that we will cluster together under the label “globalization” arise out of this historical context. The argument of this text (and of many others) is that this current historical period of globalization includes at least the following elements:

- The invention of the multi-national corporation (MNCs). MNCs developed out of the great international corporations that arose in the nineteenth century. Modern multi-national corporations (also called transnational (TNCs) or global corporations) emerged in the 1950s and 1960s to extend the purposes of international corporations. The latter tended to be centered in a host nation, while deriving resources from global sites and selling products internationally. TNCs are located simultaneously in many nations, and seek to maximize the factors of production throughout the globe while treating the entire globe as a marketplace for their goods and services. (Barnet and Mueller, 1974) While often retaining the names established in their countries of national origin, TNCs operate worldwide, seeking profits through production and sales that increasingly have little to do with their nation of origin. TNC’s extend their unique corporate values and culture to many nations, operating as completely independent entities with their primary loyalty to themselves. It is these attributes that encourage some authors to speak of the invention of a global corporate culture, or global culture, or even “Mac-culture”. (Barber, 1996)
• *The global shift in manufacturing.* A primary feature of contemporary globalization has been the movement of manufacture out of the mature industrial countries into “the third world”, a group of newly industrial countries (NICs, signifying their vast economic changes), and the lesser developed nations (LDN’s, recognizing that some nations have lagged in this extension of industrialization throughout the world). Robert Reich could write in the early 1990s that for most important purposes significant world manufacturing had moved away from the older industrial nations, leaving behind societies caught in the dynamics of widespread economic restructuring. (Reich, 1991). For example, General Motors has invested in manufacturing Buick automobiles in China, moving jobs abroad that otherwise had been held by U.S. autoworkers.

• *Foreign direct investment (FDI).* This investment of capital from one nation directly into the ownership of enterprises in another is linked to the global shift in manufacturing and the sale of services from abroad. FDI has become a key marker of the new global economy, cited as a way to measure global interdependency and to signal the relative success of poorer nations in raising capital from richer ones. FDI also takes place at very high levels between mature industrial nations (richer nations), as well as between richer and poorer. A signal feature of contemporary globalization lies in the worldwide ownership of the capital that crosses national borders, irrespective of the relative economic status of the country receiving the investment.

• *The new global division of labor.* The availability of cheaper labor and fewer labor and environmental regulations has led manufacturing to shift from western industrialized countries toward third world nations. Initially this inexpensive labor was available primarily in the manufacturing sector (blue collar work). Increasingly, since the late 1980s, improved telecommunications capability has allowed for the global distribution of white and pink collar work. White collar work traditionally has referred to management activity, as opposed to its blue collar production counterpart. Pink collar work has come to refer to the cheaper labor force doing data entry and other service tasks needed in a computerized society, so-called *pink* because such workers are overwhelmingly female. Inexpensive telecommunications allows this work to be exported. Billing, record keeping, medical transcriptions, call centers, and other service activities are increasingly located in countries distant from the industrial countries where a higher volume of sales occur. Within English-speaking forms of work such labor shifts have favored Asian nations such as the Philippines and India, where technological infrastructure can be employed to organize large numbers of English-speaking, relatively inexpensive workers. (Krempel and Pluemper, nd)

The past two decades have witnessed vast global migrations that have restructured world labor. Within countries, hundreds of millions world-wide have been drawn from the countryside to the city, because jobs have
concentrated in cities as the nodes of global production. Between countries large numbers of workers are drawn from the less affluent to the more affluent countries in search of labor, perhaps nowhere more than the Philippines, where it is estimated that fully 20 percent of the adult labor force works outside the country. (Wright, 2002. Herod, 2002)

- **The impact of new technologies on globalization.** Three novel technologies that developed through the end of the 1950s and into the 1960s dramatically influenced the shifts in productivity and marketing that ushered in modern globalization. **One**, the creation of jet aircraft production, especially with the introduction of jumbo jets in 1969, shrank the world by allowing for a much more rapid exchange of people and goods over extensive distances. **Second**, the introduction of container ships and super-takers during roughly the same period has permitted significant reductions in the costs of moving heavy cargo throughout the world, allowing the production benefits gained from more inexpensive labor to be spread throughout the production and consumption cycle. **Third**, the invention of modern telecommunications -- with high speed, high capacity computer systems and a global internet at their core -- has made possible the development of management systems that allowed control over global production and resources in real time. Other technological advances, including the development of more complex financial mechanisms (such as the purchase of oil futures) allowed for the rapid spread of capital throughout the globe. (Neubauer, 2000)

- **Neo-liberal political regimes.** With the advent of politico-economic approaches such as Thatcherism in the UK and Reganism in the US, globalism became an essential component in a new model of political economy. With its focus on the importance of promoting markets and market mechanisms to create and sustain economic growth, neo-liberalism was also an attack on the welfare state as it had been developed in Europe and the United States in the post WWII decades. Neo-liberalism emphasizes older notions of free trade among nations, the role of competition in promoting economic efficiency, and the benefits of reduced state regulation. As developed in the 1970s and 1980s, neo-liberalism became a new political orthodoxy spreading from many western industrialized countries to lesser developed nations, a global market philosophy around which politics within nation-states could be organized. It promoted policies that reduced taxation (the better to promote private sector investment), privatized state resources (the better to promote efficiency of services), deregulated industries (the better to promote competitive industry), and overall reduced government influence on trade. Neo-liberalism continues to develop, and in the minds of many commentators, it has become the official ideology and mind-set of globalization (Stenger, 2001) Neo-liberal ideas of growth, especially as they involve trade, privatization, and market relations, have spread throughout the globe, even influencing the many ways that state-centered capitalism is practiced in various Asian settings. China’s
membership in the World Trade Organization illustrates the spread of neo-liberalism.

- **Global and regional trade regimes.** For some commentators contemporary globalization is primarily about transformations of the world's economy, with particular emphasis on efforts to establish organized free trade systems. The creation of the supra-national World Trade Organization out of its predecessor GATT (The General Agreement on Tariffs and Trade) in 1994 signaled the growing influence of global business impelling nation-states to focus foreign policy on ways that promote a more extensive global trade regime. The creation of the North American Free Trade Act [NAFTA] and the European Union and Common Market have institutionalized free trade in ways that reduce the role of the nation-state in defining international exchange. Transnational relationships such as NAFTA tend to: (1) give free reign to the movement and uses of capital (which is mobile under these circumstances and benefits most from the relationships of free trade); (2) exploit labor (which tends to be far less mobile). Some also argue that agreements like these force nations with advanced environmental and safety standards to actually lower them. We will discuss trade relations more fully in chapters to follow.

It is interesting to note, however, that *most* of the world's trade is conducted by the giant global corporations trading amongst themselves—another reason why this analysis favors *globalization* as a frame of reference rather than *internationalism*.

- **Changes in the nation-state.** Some argue that contemporary globalization is a complex zero-sum game in which the more freely that foreign direct investment is allowed to move from country to country -- with its massive amounts of private capital -- the less freedom that nation-states enjoy in directing the affairs of their own citizenry. International trade organizations and their agreements make the movement of capital easier and have provisions that sometime supersede national policies. Hence, we hear the phrase “the shrinking national state” (Neubauer, 1998), because as nation-states respond to the requirements of *globalization* or global activity they experience less control of their internal policies. A case in point: during the “Asian Flu” of 1997, when several Asian regional economies followed each other into sharp decline, mature industrial nations experienced a need to intervene economically to restore them, illustrating the global interdependency of economies. This tendency of nation-states to lack control of global or regional events has been dramatically reversed in many places by responses to the terrorist attacks on New York and Washington DC on September 11, 2001, and more recent responses to such attacks in England, Indonesia, the Philippines, and throughout the world. These terrorist incidents have forced states to tighten borders and become more regulatory, impelling them to impose many new rules and controls promoting higher levels of
domestic security. This tension between the “neoliberal shrinking state” and the regenerating "security state" is inherently unstable and will, we predict, lead to new—and as yet unpredictable—state forms over the coming decade.

- The shrinking of time and space. David Harvey in an important book about globalization, *The Condition of Postmodernity*, identifies the shrinking of time and space as the harbinger of “the condition of post-modernity,” a condition inseparable from what is here being termed globalization. One way that we can think about how capitalism grows and extends throughout the world is by measuring how much is exchanged within the capitalist system and by whom. David Harvey argues that contemporary globalization differs from all the earlier stages of capitalism in the frequency of exchanges that now occur within the system (what we could think of as its "amplitude") and the rapidity with which they occur, speeded up through the effect of modern transportation and communication technologies. He argues further that these events amount to a "shrinking of time and space," meaning that the time it takes for transactions to occur is radically reduced within the current system. From this shrinking of time and space, he concludes that the global system is producing a new kind of "symbolic economy" by which he means that the flood of advertising worldwide is changing how we create and use symbols to communicate. In this view, advertising can be seen as a global language of consumption in which text and images are linked to product brands recognizable throughout the world. (Harvey, 1990)

As the period since the collapse of the Soviet Union has made clear, capitalism is capable of emerging throughout the world in a variety of forms. Harvey's work alerts us to the notion that these dynamics of shrinking time and space affect and shape all such forms.

- The creation of novel institutions. One feature of contemporary globalization has been the creation of entirely new institutions, made possible through the use of new information technologies. For example, the development of regional equity (stock) markets throughout the world, which now allow for stock trading 24 hours, 7 days a week is one such new institution, as is global trade via the Internet. Other innovations such as a global currency market that accounts for the exchange of approximately $2 Trillion each day suggest the magnitude of some of these institutions. (Giddens, 1999)

- Global Media. The creation of vast new global media companies has changed the way peoples of different cultures view the world, think about themselves and others, and develop ideas about identity, consumption and what they hold to be important in the world. Robert McChesney finds two tiers of media companies, the Big Eight (AOL-Time Warner, Bertelsmann, Viacom, News Corporation, General Electric, AT&T Liberty Media, Sony, and Vivendi Universal) which dominate what is produced and disseminated as media throughout the world, and the second tier of some sixty or so companies that
often account for media domination within a particular country. In terms of scale, AOL-Time Warner is 50 times larger than the 50th largest global media company. Such firms increasingly refuse to be identified with their country of initial origin. AOL-Time Warner’s Gerald Levin has stated, “We do not want to be viewed as an American company. We think globally.” (McChesney, 2001) Within this global media environment the emergence of world news broadcasters -- for example, the BBC, CNN, Fox News and El Jazera -- increasingly influences how people view themselves and others. Film DVDs and music CDs are so popular that they are illegally copied and distributed globally. In addition, computer games have rapidly grown to be a pervasive communication medium in the world. In 2004 for the first time in history, global sales of computer games outsold revenues for movies. Obviously, electronic games offer a new way of “knowing” the world. Commentators are quick to ask, “what is it that people (especially children) are learning about the world from such “games?”

• Changes in Social Institutions. Anthony Giddens also points out that contemporary globalization changes many social institutions. Globalization has triggered rapid changes in customary marriage ages, changes in the social roles of elders, and levels of divorce, a rise in the trafficking in humans, greater labor migration, recruitment for sex work, recruitment of child soldiers (largely in Africa) and routine employment of children in global factories, all disturbing and reshaping traditional family structures throughout the world.

Such changes alert us to the multiple ways that the status of children is changing under the pressure of globalization.

Giddens also stresses that globalization is reshaping the role of women in novel ways, especially in the context of family structure. The nature and meaning of these changes figure prominently in people’s attitudes toward accepting or rejecting globalization. (Giddens, 1999)

Some Impacts of Globalization

No matter what lens people use to view globalization, most observers identify at least some of the attributes mentioned above as central to what the term means. We can also point more directly to some of the consequences created by globalization. Interestingly, those who tend to oppose or accept globalization, tend to identify the same global consequences. They bitterly oppose one another, however, in weighing the positive and negative impacts of globalization. We turn first, then, to a brief consideration of some of these impacts, and then to the controversies over their meaning.

• Wealth creation and distribution. Commentators on globalization, whether proponents or opponents, generally agree that over the past four decades the processes of globalization have resulted in enormous increases in wealth.
This wealth-building pattern holds true despite episodic economic cycles and crises, such as the recession among mature industrial nations in the late 1980s (and its continuance in Japan) and a re-play with the so-called dot.com economic collapse of 2000, or the Mexican currency crisis of 1994 or the Asian currency crisis of 1997. But while global economic statistics for the past four decades demonstrate a significant increase in overall wealth creation, data also suggests that income inequality has persistently grown, i.e., as a tiny portion of the world’s population grows progressively richer, huge numbers of others grow significantly poorer. One recent survey indicates that the wealthiest 1% earn as much as the bottom 57% of earners combined. These patterns of inequality appear to be occurring within nations as well as between nations. The meaning of income inequality data lies at the core of some of the more intense debates about globalization.

- **Hyper urbanization.** Globalization and the rise of the megacity are strongly correlated. The speed of growth of these mega cities is stunning. In some, e.g. Mexico City, Lima, Lagos, the rate of growth vastly outstrips the capacity of infrastructure to keep pace, resulting in fundamental breakdown of services and in many cases minimal civil order. Hyper urbanization is clearly linked to population growth. Within-country and between-country migrations form an “urban pull” that draws people out of rural areas (and subsistence economies) and into the world of goods and the job-oriented cash economies of the cities. (Douglass, 2004)

- **Migration.** Economically driven migration has become a major feature of contemporary globalization, as labor seeks survival and improved lives through mobility. Throughout the world people migrate toward plentiful job economies, and nation-states find themselves confronted with the need to regulate access to their societies by those seeking entry. Annual illegal entries by Mexican laborers and their families into the US are estimated at 340,000 people, with migrations into the EU substantially larger at some 800,000 a year. The restructuring of the nation-state system following the end of the Cold War has resulted in conflicts and forms of oppression that promote migration as a vehicle for obtaining political safety. On yet another front, the enslavement and trafficking in human beings has become an increasingly common problem in the global movements of people.

- **The growing importance of transnational organizations.** We made brief mention above of new transnational organizations, such as the World Trade Organization, as essential parts of the new neo-liberal trading regime. Another set of older institutions, the so-called “Breton Woods Organizations,” including the World Bank, the International Monetary Fund, and regional banking entities (e.g. the Asian and South American Development Banks), have developed new roles in the globalized economy.

Developed in the aftermath of WWII to provide and regulate capital
assistance to nations and institutions damaged by the war, these organizations have been instrumental in promoting what has variously been termed “restructuring” agreements for debtor nations seeking assistance. The restructuring agreements promoted by these organizations have forced recipient nations to restructure their economies along neo-liberal lines as a condition of debt-restructuring or receiving new loans. Those within nations that borrow or receive debt restructuring vary in how they see the consequences of such aid – some seeing it as beneficial and others seeing themselves as losing from the pro-market, free trade requirements they are forced to accept. (Roberts, 2002)

- **The dismantling of the welfare state.** With the growing acceptance of neo-liberalism and free market orientations, public institutions have been reshaped via attacks on the welfare state and its perceived shortcomings. While neo-liberal rhetoric differs somewhat from country to country, this stance says that the welfare state is too expensive, too inefficient in the delivery of services, and too regulatory in its constraints on the private sector. For example, contemporary Germany’s persistent high unemployment and low growth are blamed on the high cost of its welfare state entitlements. As an alternative to state control, those wanting to dismantle the welfare state advocate privatization, including the selling off of state owned property and industry to private enterprise. This approach suggests that competition and the use of markets will be a preferable alternative to government regulation and welfare provisions, providing greater efficiency, a more effective use of resources, and lower costs. As these changes occur, the costs for services and former government programs shift to the private sector, where users pay for them. (Stone, 1997)

- **The domination of economic issues.** Globalization has raised economic issues to a level of primacy over other ways of “knowing of” or “speaking of” the world. Business models now extend into the operation of all kinds of institutions, from churches to schools, to universities and hospitals, the shift justified by emphasizing the benefits of an improved “bottom line.” Values and practices that once stood outside economics, e.g. cultural performances, learning, play, have become indelibly associated with “the world of goods.” Indeed, global space itself is characterized as a “global marketplace.” What was earlier thought of as outside of economics (for example, National Public Radio in the U.S.) now must appeal for a place on public agendas in economic terms. Professionally the shift has meant an increasingly greater role for economic assumptions and economic discourse as professional and policy languages. The value of anything is increasingly perceived via its cost or the returns it may bring in the marketplace. (Grieder, 1998)

These impacts – a potentially lengthy list – provide the substance for what we characterize as the contested narratives of globalization. It warrants mention that the evidence used to support each of these narratives tends to represent a series
of snapshots of past and present conditions. Because technologies and their
global consequences create rapid change, the actual direction of each
globalization narrative might better be seen in the metaphor of a film whose
story, characters, and plot are just beginning to unfold.

Contested Narratives of Globalization

We experience globalization in the world in part as stories that are told from
thousands of perspectives. Using stories makes the immense complications and
complexities of the contemporary world understandable. Two macro stories, one
that characterizes globalization as creating progress, and the other that pictures
globalization as disaster, frame how people see the information that globalization
generates. We tell each other these stories as we react, say, to a change in
public policy, or as we experience the introduction of new uses of information in
society, or as we react to the most recent film at the local cinema, or as we
encounter a myriad of other changing social practices.

Globalization receives wide attention in the world press, and naturally it has
generated its own vocabulary. In the narratives about globalization, evocative
new words and terms spread and link among narratives. For example, since the
demonstrations against the World Trade Organization in Seattle in 1999, the very
term "Seattle" is sufficient for many to evoke images of protestors surrounding
buildings, filling streets, arrayed against riot-clad police within clouds of tear gas.
To opponents of globalization, the Seattle experience was about protesting the
role that the WTO has had in promoting globalization by enlarging free trade and
empowering TNC’s. The Seattle stories helped to fuel more protest.
Subsequently, every meeting of WTO or the regional development banks, or the
International Monetary Fund has experienced some kind of protest activity.
Seattle has been followed by protests in Washington, and Geneva, and so on. In
2001 the annual meetings of the Asian Development Bank were moved from
Seattle to Honolulu because the previous year’s meeting in Chang Mai, Thailand
produced massive protests. Honolulu was viewed as “safer” for ADB activity,
partly because it was more expensive for traveling protestors to reach. Moreover,
local authorities in Honolulu said that they wanted to avoid another “Seattle.”

Gatherings of those who influence major changes in the global economy, i.e.,
powerful international decision-makers working in quasi-public, quasi-private
transnational organizations such as the WTO, have come to symbolize the forces
against which globalization’s opponents feel they must organize.

One way to characterize these two competing narratives of globalization is to see
the story of progress as essentially what people “inside the building” in these
clashes believe and promote. The disaster story, in contrast, represents the view
held by many of the protesters, those “outside the building. “ Those inside see
themselves as agents of positive change, bringing vitality and growth to the
world’s economy, harnessing technology to create value, and making a better life
for hundreds of millions of people throughout the globe. They also see the efficiencies of globalization as a desirable, inevitable improvement in the way goods and services are produced and distributed worldwide. Those outside the building see globalization as destructive of many important cultural and life values, exploitative of labor, and a threat to less powerful people and their cultures. They see the negative consequences of globalization as generated by quasi-political elites who represent the business classes of the world using non-democratic decision-making. This disaster view sees the rich—the owners of the world’s capital—as seeking to organize the world to their own benefit and in their own interests without consideration for the dis-benefits such a course imposes on others.

These are fundamentally opposing narratives. Consequently it is essential to open up and examine each narrative to see to what the tellers of these stories mean when they tell them. Without this kind of analysis, it is extraordinarily difficult to translate the meaning of “globalization” when the term is used. The next two sections examine these two narratives.

Globalization as Progress

The progress narrative assumes that capital investment coupled with efficient technology produces greater economic growth. This combination was in the 1990s for a time described as “the new economy,” which translates as the reorganization of economic life around information technology. During the great economic boom of the US and Europe in the 1990s (which was paralleled by the spectacular growth of the Chinese economy during the same period) the notion of a new economy came to imply that new information technologies were shifting traditional return on investment characteristics, and might even be following new economic principles significantly different from those of the old economy. The collapse of technology equity stocks after March 2000 made it clear that traditional hard economic realities were still in place, and few could support claims for a new economy. Nevertheless, little doubt exists within business circles that continued global investment is required for firms to survive in an increasingly competitive economic marketplace. The “right” kinds of investment in new technology—information based technology—whether they are directly associated with “the information industries”, i.e. computer hardware and software, or with newer kinds of information-based technology, e.g. pharmaceuticals, entertainment, biotechnology, or nano-technology, are seen as essential for continued economic growth. At its core, the progress narrative is fundamentally based on economic growth as a central, compelling requirement for the successful realization of human potential in the world. The slogan of the progress narrative might be “without growth there is no progress.”

Not surprisingly, the progressive narrative also sees the combination of science and technology as marks of any successful society; societies that lack scientific and technological capacity are viewed as “backward”, “undeveloped”, and
“wanting,” in danger of being left behind in the continued march toward progress. In the progress narratives in other parts of the world, especially those countries formerly characterized as “Third World,” Africa is often discussed with a sense of distress. Those that have emerged as NCIs or have become developing countries see themselves as converging with the older industrial nations via economic development fuelled by investments in technology. Development of a science-based culture (organized around a science and mathematics-based school systems) is widely viewed as a prerequisite for acceptance into the family of developed nations. Science-based advancements also appear to improve the chances of having a civic culture based on rationality, free choice, and market-based results, as opposed to cultures controlled by traditional religion, and by political and social elites that dominate wealth, land ownership, and politics.

The globalization as progress narrative also assumes the virtue of a world organized around the economic concept of comparative advantage. When participants in the marketplace (including nations) have combinations of accessible natural resources, more efficient production capabilities, less expensive labor, better intellectual capital, or less government regulation, they are said to possess a comparative advantage. Because they have one or more special advantages that others lack, the marketplace moves to exploit these advantages through regional and global open markets. If a business in China can efficiently make lower cost, high quality washing machines in competition with a business in Sweden or the United States, then making the machines in China and trading them globally is what should happen. The prevailing globalization assumption is a world based on the reality of “free” trade.

Regional, national, and sub-national specializations that exploit such comparative advantages have become a normal feature of global competition. (For example, the Philippines has developed a novel form of comparative advantage by “exporting” labor throughout the world, and these talented Philippine nationals working abroad contribute to Philippine economy through the massive remittances that they send back to the Philippines.)

Beyond the comparative advantage/free trade organizing concept of contemporary globalization, the progress narrative expects sufficient capital to be invested where specific factors of production, such as cheap labor, can be realized in the production process. This movement of capital, called Foreign Direct Investment, has become an essential feature of contemporary globalization. FDI aggregates huge amounts of capital within a relatively small number of firms that then become progressively and globally larger, giving them corresponding market advantages. The progress narrative speaks of the capital being invested rationally on a global scale to achieve better efficiency and an improved return on investment. These outcomes could not occur if capital holders were smaller and therefore more limited in marshalling the large amounts of investment the global trade often requires.
The *progress* narrative describes economic activity as the primary value underlying social organization and human relations. Compared with older cultural and social traditions, this view of the world is fundamentally materialist, situating humans and their hopes and purposes firmly in a world of goods, almost as if humans were commodities in a world busy trading commodities. In this scenario, everything else takes second place to the economic actions that generate profits and trade advantages. In this story, economic growth and the acquisition of goods are celebrated as progress, to be striven for and taken as ends in themselves.

In the United States (which many commentators would view as the leading neo-liberal society in the world -- although Americans rarely think of themselves in those terms), vast accumulations of wealth in the hands of a few leading capitalists, and astonishing levels of income inequality rarely receive criticism. (The combined wealth of three leading American capitalists is estimated as equal to the wealth held by the *bottom half* of the American population. These three mega-capitalists are Bill Gates, the founder of Microsoft, the titan firm of the global information economy; Sam Walton’s heirs of the Wal-Mart fortune—Wal-Mart can be viewed as a portal for the distribution of global consumer goods to the American population, the wealthiest society, and thus the largest consumer market on the globe; and Warren Buffet, an equity investor extraordinaire whose ability to trade stocks, to predict market fluctuations, and to make investment decisions accordingly marks him as one of globalization’s leading economic men.) The development of a global society has as its primary value the creation of wealth, the assumption being that wealth serves all other needs and values; this message has been persistently repeated in western/global media for the past two decades.

The spread of democracy and free markets go hand and hand in the *progress* narrative. In this very western notion of a global economy only open, liberal societies can support open, competitive markets. It follows that free trade as a plan for organizing the world presumes a world moving in the direction of democratic societies. (This is the public view, for example, of the Bush regime in 2005 and is used as a justification for the U.S. incursion in Iraq.) This simple view recognizes that a large number of styles of governmental exist, from the (still) social democratic regimes of Scandinavia, to India and China, where “open market” conditions are allowed to exist within a framework of strong state control. The Clinton Administration in the United States (1993-2000) pointed with pride at the demise of numerous military regimes in Latin America during the 1980s and 1990s and to the return of civil society in these countries as they sought to meet the neo-liberal requirements advocated by US, World Trade Organization, and International Monetary Fund policies.

In the increased numbers of people enjoying the freedom to participate in global or regional markets, the *progress* narrative sees one of the primary benefits of globalization. In this regard the progress narrative emphasizes the social value
of liberty, especially economic liberty—commonly framed as freedom—over equality. In contrast, equality historically has been viewed as a primary value underlying the social and political organization of countries that see human needs as a first priority. Liberty within this narrative is focused on the relationship between the state and the individual, especially with respect to property. It is useful to recall that historical liberalism emerged out of 17th and 18th century struggles between the British crown and private wealth holders, especially the emergent capitalist class, over issues of appropriation: how much wealth in society could be claimed by the crown through taxation, and how much would remain in private hands for whatever purposes individuals chose to use it? Neo-liberalism is an effort to halt the historical flow of power in the direction of the state, a movement itself that had much to do with the callous exploitation of labor and markets witnessed in earlier capitalism, and the resulting need of governments to control them in the 19th and early 20th centuries. The need for government interventions into the marketplace was amplified by the massive failure of capital and markets during the world’s Great Depression of the 1930s.

Neo-liberal driven globalization is clearly about the re-empowerment of those who hold capital in society. It is a philosophy rebounding from the restrictions that grew out of the welfare state. Neo-liberalism sees the need for capital to control the state, thus making sure it allows the growth of free markets and globalization. To do so it seeks to restrict the state’s access to it via taxation; it promotes the value that those who are successful in accumulating capital have a right to it and its use. It comes as no surprise that those who have accumulated great amounts of capital through globalization subscribe to such beliefs, and articulate them through the narrative of progress. In this sense, globalization is the ideology and hope of the rich. In complex, relatively open societies, however, where the capture of public office holds enormous importance in bringing such beliefs into public policy, the rich (those who appear to benefit most from globalization) require electoral allies to gain and hold political power. To accomplish this, globalization must appear as a positive phenomenon, something that benefits the whole of society, or at the very least large portions of it; and ideally, it must be seen somehow as inevitable, as a way of proceeding in the world, and to do otherwise would be to lack common sense. It is in this sense that globalization as a narrative of progress has been developed. Since the advent of the industrial revolution, belief in progress itself has been increasingly one of the founding principles of liberal society, adopted to such an extent that to be against progress is to be seen as a social outsider.

Globalization as Disaster

The disaster narrative employs many of the same indicators and data to characterize globalization, but it views them through a different lens, and interprets them very differently.
The data on growing global income inequality demonstrate the point dramatically. Whereas the *progress* narrative emphasizes the overall growth of world wealth, pointing to the large number of countries and peoples made better off through globalization, the *disaster* narrative emphasizes those left behind, the worldwide increase in poverty, and the growing gap between rich and poor throughout the world. Citing data from the United Nations Development Reports, the World Bank and the International Monetary Fund, this story of globalization directly contests the promise of the progress narrative that over time “the rising tide of economic prosperity raises all boats.”

The *disaster* narrative also follows the comparative advantage argument, but to a very different conclusion. Where the *progress* narrative advocates increased capital mobility and employing technology as vehicles for drawing ever more workers into the global labor force, the *disaster* narrative emphasizes how easy it is for capital, having established itself within the labor force of one country, to shift investment and production to another should the cost of labor rise too high in the initial country. The sensitivity of global producers to rising labor costs, and the interest of national governments in receiving foreign direct investment translate into social policies that are hostile to the interests of individual workers, and more, oppose or outlaw labor’s organization. Just the threat of capital relocation often induces governments to reduce the infrastructure and operating costs that would otherwise be paid by capital (for example, through tax holidays, infrastructure and energy subsidies), costs which are eventually passed on to the rest of the population. These pressures to reduce costs to capital, and to limit the rights and working conditions of labor are said to create a “race to the bottom” in which counties compete for external investment by placing continued pressures on labor, consumers and non-corporate tax payers. This *disaster* view also sees the race to the bottom as a form of injustice visited on the poor, with direct links to the high incomes of corporate managers and owners. (Grieder, 1997)

These anti-labor dynamics exist within the mature industrial economies as well, as neo-liberal policies seek to control and reduce wage rates in order to promote global competition. Adjusted for inflation, for example, wage rates for the working class in the United States have remained relatively constant over thirty years, while real costs have increased. Indeed, over that period the proportion of national income held by the bottom two fifths of the U.S. population has actually decreased. (Jones and Weinberg, 2000) In the face of anti-labor state policies, the proportion of laborers in unions significantly decreases. Society-wide the use of contract labor (which frees employers from the cost of supporting work benefits) increases. All of these dynamics, disaster critics contend, are deliberate and unjustified strategies on the part of capital to reduce their overall costs in the production process.

The attack on the welfare state is also a part of the *disaster* narrative, which sees globalization as destroying the lives of the poorer segments of populations in both developed and less developed countries. Under the guise of promoting the
greater efficiency of their social investments by privatizing control over them, governments cut back or eliminate social welfare policies, thus reducing the opportunities that were once assumed to be part of state policy (for example, in the U.S. cutting funding for state supported education, privatizing the review of Medicare claims to reduce Medicare payments, and making disability benefits more difficult to obtain). This pattern reduces funding for social policies and shifts more financial and social burdens onto citizens, leaving many without essential services previously available via state support. Ironically, present state support of businesses (so-called “corporate welfare”) in the U.S. is (in 2006) variously estimated at between $160 and $174 billion annually in the federal budget, more than three times what the budget provides for all human welfare entitlements.

In their long term effects, such policies, some argue, recreate and institutionalize social classes, resurrecting the politics of race and ethnicity. In this view, privatization is a code for the re-creation of class differences by neutralizing the effects of state policies that promote social equality.

A central element of protest against globalization focuses on environmental issues. At the macro level this view expresses serious concerns over global warming and the generation of greenhouse gases. Growth via the steady increase of industrialization throughout the world—with rapidly rising CO2 emissions—produces disastrous results globally: rising ocean levels and temperatures, and increasingly violent weather with consequent storm damage and loss of life. As the wealthiest and highest consuming nation in the world, the United States’ unwillingness to acknowledge its role in these processes and to support multi-national treaties (such as the Rio and Kyoto accords) addressing global warming strikes some as the power of global industry in controlling public policy to serve its profits instead of the common good. Environmentally oriented anti-globalization protestors describe a disaster scenario in which global companies increase their economic value by destroying local ecosystems (e.g. logging in the Amazon, Indonesia, or The Philippines; corporate fishing fleets seriously depleting 17 of 19 major world fisheries). Such destruction of the “global commons” (e.g. polluting the atmosphere and the oceans, and causing the collapse of ocean fisheries) contributes to species destruction, increases regional poverty, and through free trade agreements, contributes to the undermining of environmental regulations in the advanced economies. The worldwide transmission of disease through the increased exchange patterns of global commerce, labor migration, and travel becomes an important sub-narrative about the negative environmental consequences of increased globalization. (Garrett, 1994)

Another disaster scenario arises out of one of the central points of pride in the progress narrative—the global movement of capital. This story sees the increased role of financial capital in the world (distinguished from manufacturing capital) as an enormous danger to national and world security. The trillions of dollars “in play” daily through global currency and equity trading are viewed as an
enormous threat to the ability of nations to protect the stability of their own currencies from the speculative urges of others, or to protect their economies and societies from being drawn into downturns that might be caused by the collapse of globally traded equities. Critics point to the peso crisis in Mexico in 1994, the Asian currency crisis of 1997 causing currency concerns in Hong Kong, and the global ripples of the US NASDAQ collapse of 2000 as indicators of what may lie in store for the world in future financial crises. Nation-state economies are so interwoven globally that when a major global business or national economy starts to unravel, other businesses and economies face serious consequences. Borrowing a phrase from the great British economist Lord Keynes, who had a similar concern about finance capital, the disaster narrative terms the contemporary global system of finance capital “casino capital” to emphasize the extent to which it is barely different—if at all—from outright gambling. Except, as it is sometimes dryly added: in this case there is no telling who is the House. (Strange, 1986)

While the progress narrative powerfully emphasizes the positive role of science and technology in creating economic value and promoting positive social change, the disaster narrative focuses on a kind of “science and technology out of control” perspective in which market-oriented societies have little inclination to control the development of technologies whose social effects are unknown. Even where they might be disposed toward precautionary postures of regulating innovations from science and technology, governments find themselves besieged by industry advocates who press government not to interfere with the market. Issues such as how to protect “the public” from the uncertain or unpredictable effects of such science driven changes (e.g., genetically modified foods) become further confused when interest groups hope that the development of specific technologies will assist them with their own problems, e.g. farmers looking for increased foreign sales via the irradiation of food products. Questions about the limits of science often involve groups that wish to exploit technology for economic gain—for instance biotechnology—or groups that desire ready access to pharmaceuticals that have not been fully tested. The debate over the use of stems cells to conduct basic biological research is a case in point, including in this instance an attempt by a conservative oriented government to prevent research in this area. Throughout the world, however, the very unregulated nature of global markets makes it impossible at some levels to control effectively the movement of untested, unproven technologies. (Garrett, 2000)

Globalization by its nature stands in contra-distinction to the local. The progress narrative emphasizes the value added to the local by the global through such advantages as lower prices; the disaster narrative emphasizes the destruction of the local by the global, with powerful global forces appropriating and overwhelming local culture for commercial purposes. This disaster narrative continues by saying that by commercially exploiting local resources and labor, globalization destroys or separates people from the values that underlie their cultural practices. (Barber 1996, Harvey 1990) From the creation of global media
icons to the pressures it creates to relocate peoples from subsistence to cash economies, globalization in all its fullness transforms everyone ultimately into a consumer, an identity over which individuals, it is argued, have limited control. In this narrative, the language of making rational choices in a free market—which is the underlying logic of the progress narrative—transforms into a bizarre perversion in which people feel the impact of globalization as their local cultural values, assumptions, and way of life are upset by intrusive global consumption practices. (Barnet and Cavanagh, 1994)

This loss-of-culture concern parallels the progress narrative’s celebration of the economic as the primary value worldwide. Within the disaster narrative, this economic primacy becomes a deeply unsettling form of economic reductionism, one in which all other social values are measured against the economic, and one’s placement in society is overwhelmingly determined by one’s control over wealth and the consumption it permits. This critique of the disaster narrative emphasizes that global forces increasingly frame life via its wealth and the consumer choices that wealth provides, while local culture creates and sustains religious, artistic, recreational, and unique cultural traditions, customs, and values (i.e., non-economic values) as central to one’s identity and happiness in life.

Finally, those outside the building protesting globalization and those inside the building constructing globalization have very different notions of what constitutes democracy. Those outside the building view organizations like the WTO as a creation of the national governments and the business elites that these governments tend to represent. National governments have ceded a measure of their authority to supra-national quasi-governmental organizations such as the WTO for the purpose of promoting a global trade regime. Those outside the building question who is inside the building, making what kinds of decisions for the benefit of whom? The very meaning of democracy is being raised by these protests, which themselves are seen as necessary to focus issues for global and national attention, to create agendas for discussion, and to gain a “place at the table” for those who represent views broader than those of the global business community. As evidence of the necessity of external voices in making decisions and the relative success of the protests, protestors point to their success in forcing the World Bank, the International Monetary Fund, and the regional development banks to make poverty reduction their primary lending concern. Their point, however, asks deeper questions about the roots of globalization—the coming-into-being of a globalized economy, the rise of its quasi-governmental organizations, and the necessity for both to have greater transparency and submit to a measure of authentic democratic control. (Bello, 2000)

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Chapter Two
The Dynamics and Processes of Globalization

A Brief History and Some Forms Globalization Takes

Globalization in the current period (what we shall refer to hereafter as contemporary globalization to distinguish it from those of previous periods) shows the features of new kinds of global interdependence, an intensification of previous forms of interdependence, and a speeding up of the processes of change. In this chapter we examine some globalization dynamics, social and cultural practices that can be identified as contributing in specific ways to increasing interdependence. We also examine various processes, ways in which this increasing interdependence takes place.

A word of caution before we begin. Globalization is in its very nature complex, incredibly interactive, and expressed through virtually every aspect of human endeavor. As an organized field of study it is quite new. By its nature studying globalization requires an multidisciplinary approach. Its relative newness as a field of study can be seen by an examination of book and journal titles devoted to the subject. In the United States and Europe where globalization first emerged as a subject of study, the number of such articles in a typical university library twenty years ago was likely to be less than one or two hundred. By 1990 the word was in common currency and the numbers of books and journals devoted to the subject had increased a hundred fold. Today as we write this chapter, a Google search of the word "globalization" produces 51,400,000 listings. It is fair to say that globalization has exploded onto the world stage.

As we saw in Chapter One, what one means by the term "globalization" is likely to vary significantly from one speaker, or one researcher to another. That chapter states our position in suggesting our preferred use of the term. We need to make another point, however, that arises from the very complexity of the phenomenon and our efforts to understand it, namely: globalization looks different from where one examines it. This the idea of using one or another "lens" to study globalization. Further, how one experiences and feels about globalization (that is, the narrative that one employs to discuss it) is very much dependent on where one is in the process. The progress narrative is favored by those who see themselves through the eyes of a globalizer, one who is largely benefiting from the process; those who are inclined to the disaster narrative see themselves the eyes of the globalized, one whose place in the world seems to be diminished by the ways in which globalization develops and produces negative impacts.

Finally, we need to realize and acknowledge that the very categories we use to discuss globalization are in the end arbitrary—meaning that we, or other scholars of the process, could often use other categories to equally valuable ends. And, these "categories" that we use to discuss dynamics or processes are not "well-
bounded”, that is, not all that we wish to say about the subject is easily or even possibly contained within the category. For example, to discuss globalization in terms of its economic or trade dynamics implies its implications for many other dynamics, processes and outcomes, such as urbanization, or immigration, or exchange relationships. This is a result of the very inter-relatedness of globalization. In a literal sense within this subject matter of globalization ultimately everything is related to everything. Sometimes this lack of “strong” categories is frustrating because the related-ness of globalization prohibits us from speaking with the greater precision we may desire. To which we need to say: so be it! This is the nature of the “thing” that we wish to study.

**Part One--Dynamics:**
Most observers of globalization begin their examination with the economic aspects of globalization. Further in this text we devote a chapter to further examining the economic dimensions of globalization. One aspect of the economic dimension is **trade**, which we see as its primary dynamic and driver.

Trade produces a common sense understanding. Country A produces a good or service and exchanges that with country B. And, of course, the process is even more rudimentary in that individual A or group A produces a good or service which is exchanged with their counterparts in other villages, towns, cities, regions, etc. Trade appears to be as old as human society. Indeed, the proponents of “historical globalization” argue that the world as we know it has been built in part on ever-expanding patterns of trade that have brought various parts of the world into increasing contact with others. The root of the empires of early civilization was the ability of a group to establish a political and economic order over many peoples and geographically large territories over which goods could be exchanged. (Significant trade in services is a more modern development that we discuss below.) Given the limits of existing communication and transportation technology, one part of the world was linked to another through trade. It was thus that Europe became aware of the advanced civilization of ancient China through trade along the famed “silk road”, made perhaps most famous in Europe by the return of the Italian Marco Polo after many years at the Imperial court. Historical globalization scholars tend to mark periods, or epochs, of globalization by the invention of new technologies, especially transportation technologies that allowed increased contact through trade of one part of the world with others.

The contemporary period has followed a similar pattern. The almost parallel development of modern jet aircraft, container ships and super tankers and computer and satellite communications have wrought a revolution in how goods (and now services) are exchanged throughout the world. The relative advance in these transportation technologies mirrored those of the 19th century when railroads and steam power ships brought about a dramatic increase in world trade, especially during the period 1870 to 1913 when world trade grew at a rate of 3.5 percent per year, compared with a total growth in overall world **production**
of 2.7 percent per year. (Kitson and Michie, 1995: 6) The system of trade developed over this period is referred to as the core-periphery system in which most international trade was driven by the core developed countries of northwest Europe and the United States. The core nations produced most of the manufactured goods while the periphery (the rest of the world) served as a supplier of raw materials and as a market for the manufactured products of the core countries. This system, based on the colonial empires of the 17th and 18th centuries and the imperialistic organization of the world in the 19th century was in place until ripped apart by the Second World War (WWII).

The period following WWII has given rise to a new map of world trade. As Dicken argues, this map “is the outcome of a complex web of political, economic, and technological processes that have evolved since the end of WWII” displacing the basic system that had been in place for the previous two centuries. (Dicken, 2002) In terms of trade integration, three periods are notable. Measured in terms of the ratio of total world exports to total Gross Domestic Product (GDP), trade integration progressed from around 1820 through the collapse of the world financial system in 1929. Integration was reversed during the pre-WW II period by the wide-spread adoption of national tariff protections, followed by the disruptions of WWII, and a rebound in the current period. The concentration of trade under the core regime was remarkable: in 1938, 71 percent of world trade was concentrated in four countries, and 90 percent of world trade in 11 countries.

Dicken describes contemporary world trade as a roller-coaster by which he means that the ratio and distribution of exports in relation to industrial output have risen or fallen in response to the increasingly interdependent nature of the global economy. The period from the early 1960s to the first global oil crisis in 1973 was one of highly expanding trade—the high of 1929 had been reached and surpassed by the early 1960s. Since the 1970’s however, measured in terms of annual growth of exports and outputs, levels have varied from a negative 3% in 1982 to a positive of almost 11% in 1995.

Three distinct changes in the nature of world trade have taken place in this contemporary period. First, trade has been dominated by manufactured goods, which have gained in proportion to the trade in raw materials. By the late 1980s almost 80 percent of developed country exports were of manufactures, while developing countries showed even more dramatic change rising from 20 percent to almost 50 percent in the late 1980s. (Dicken, 2002: 46) The second shift has been in the growth of intra-industry trade, trade between countries in essentially the same kind of product. This share of world trade in the developed countries has risen to over 85 percent by the 1990s compared with 45 percent in the early 1960s.
Table 2.1 Top 25 Global Corporations

<table>
<thead>
<tr>
<th>Rank</th>
<th>Name</th>
<th>Total Volume of Sales (000,000)</th>
<th>Profits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Wal-Mart Stores (US)</td>
<td>287,989.0</td>
<td>10,267.0</td>
</tr>
<tr>
<td>2</td>
<td>BP (UK)</td>
<td>285,059.0</td>
<td>15,371.0</td>
</tr>
<tr>
<td>3</td>
<td>Exxon Mobile (US)</td>
<td>270,772.0</td>
<td>25,330.0</td>
</tr>
<tr>
<td>4</td>
<td>Royal Dutch/Shell Group (UK)</td>
<td>268,690.0</td>
<td>18,183.0</td>
</tr>
<tr>
<td>5</td>
<td>General Motors (US)</td>
<td>193,517.0</td>
<td>2,805.0</td>
</tr>
<tr>
<td>6</td>
<td>Daimler Chrysler (US)</td>
<td>176,687.5</td>
<td>3,067.1</td>
</tr>
<tr>
<td>7</td>
<td>Toyota Motors (Jap)</td>
<td>172,233.0</td>
<td>10,898.2</td>
</tr>
<tr>
<td>8</td>
<td>Ford Motor (US)</td>
<td>172,233.0</td>
<td>3487.0</td>
</tr>
<tr>
<td>9</td>
<td>General Electric (US)</td>
<td>152,866.0</td>
<td>16,819.0</td>
</tr>
<tr>
<td>10</td>
<td>Total</td>
<td>152,609.5</td>
<td>11,955.0</td>
</tr>
<tr>
<td>11</td>
<td>Chevron (US)</td>
<td>147,967.0</td>
<td>13,328.0</td>
</tr>
<tr>
<td>12</td>
<td>ConocoPhillips (US)</td>
<td>121,663.0</td>
<td>8,129.0</td>
</tr>
<tr>
<td>13</td>
<td>AXA (UK)</td>
<td>121,606.3</td>
<td>3,133.0</td>
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<tr>
<td>14</td>
<td>Allianz (GER)</td>
<td>118,937.2</td>
<td>2,735.0</td>
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<td>15</td>
<td>Volkswagen (GER)</td>
<td>110,648.7</td>
<td>842.0</td>
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<tr>
<td>16</td>
<td>Citigroup (US)</td>
<td>108,276.0</td>
<td>17,046.0</td>
</tr>
<tr>
<td>17</td>
<td>ING Group (DUTCH)</td>
<td>105,886.4</td>
<td>6,608.0</td>
</tr>
<tr>
<td>18</td>
<td>Nippon Telegraph and Telephone (JAP)</td>
<td>100,545.3</td>
<td>6,608.0</td>
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<tr>
<td>19</td>
<td>American International Group (US)</td>
<td>97,987.0</td>
<td>9,731.0</td>
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<td>20</td>
<td>International Business Machines (US)</td>
<td>96,293.0</td>
<td>8,430.0</td>
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<tr>
<td>21</td>
<td>Siemens (DUTCH)</td>
<td>91,493.2</td>
<td>4,144.6</td>
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<tr>
<td>22</td>
<td>Carrefour (FR)</td>
<td>90,381.7</td>
<td>1,724.8</td>
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<td>23</td>
<td>Hitachi (JAP)</td>
<td>83,993.9</td>
<td>479.2</td>
</tr>
<tr>
<td>24</td>
<td>Assicurazioni Generali (ITALY)</td>
<td>83,267.6</td>
<td>1,635.1</td>
</tr>
<tr>
<td>25</td>
<td>Matsushita Electric Industries (JAP)</td>
<td>81,077.7</td>
<td>544.1</td>
</tr>
</tbody>
</table>

Source: Fortune, 2005

The third change may be the most distinctive and important. This is trade that takes place through the action of Transnational Corporations, which now dominate world trade. Table 2.1 identifies the top 25 corporations in the world. By UN estimates TNCs account for as much as two-thirds of the world export of goods and services. Perhaps even more striking is the vast amount of trade that takes place within transnational corporations. Not to mistake the point, this is
world trade—trade across national borders—that is counted like all other international trade, but exists within the management and ownership structures of the individual corporations. The old model viewed the nation as the “unit” doing the trading, that is a firm in China was trading with a firm in Brazil, and we viewed this as inter-nation exchange. It is now believed that between one third and one half of all “international trade” in the world consists of one part of a corporation located in one country trading goods (or services) with another part of the same corporation in another country. These data as much as any other underscore the critical role that transnational corporations have in contemporary globalization.

Changes in the nature of global trade have been accompanied by new ways of regulating it. The end of World War II saw the creation of a new set of non-governmental institutions, that were also trans-national, or supra-national. These were organizations created by agreement of many nations and based on the principle that the “old world” of nation-state behavior, the system that had plunged the world twice to the brink of catastrophe, needed to be “governed” or “regulated” in new ways. The United Nations, created in San Francisco in 1945 by the collective action of 54 nations, set about establishing multi-national activity on a wide variety of fronts including culture, health and the well-being of children. Events quickly involved the United Nations in various regional armed conflicts as it sought to keep them from spreading.

Economic behavior was addressed by the creation of two organizations, the International Monetary Fund was created at the Breton Woods Conference (held at Breton Woods, New Hampshire, USA) in July 1944 by 45 nations seeking to create a cooperative regulatory regime in the post-war period. The goal was to prevent the kind of nationalist economic behavior that contributed to the Great Depression of the late 1920s and 1930s. The original charge of the IMF was to promote international monetary cooperation through the creation of a permanent institution, to facilitate expansion and growth of trade, while also promoting monetary exchange stability and the elimination of foreign exchange restrictions by establishing a system of payments. In what would later prove to be one of the most important factors in promoting globalization, the IMF was also charged with making loans available to provide the means “to correct unhealthy economic trends without threatening national or international prosperity.” (Latitudes, V. 4)

The direct regulation of world trade was begun in 1947 through the General Agreement on Tariffs and Trade (GATT), an agreement of 23 countries to create a set of rules to govern how tariffs would be established and implemented. Over the post-war decades eight separate “rounds” of negotiations have been held by an ever-increasing number of countries to establish the basic principles that govern international trade. In 1995 the GATT countries reorganized themselves into the World Trade Organization (WTO) composed of over 130 countries. The basic rules of world trade include the most favored nation principle (any trade concession negotiated between any two member countries must apply equally to all others), the national treatment rule (which requires that imported goods be
treated in the same way as domestic goods), and the \textit{generalized system of preferences} (which granted preferential access for developing country goods to developed markets—textile manufacture was an exception.) The Uruguay Round of negotiations that lasted from 1986 to its conclusion in 1994 created the basis for the current framework of trade, including agriculture, textiles and clothing. Additional agreements were made for the first time on the General Agreement on Trade in Services (GATS), indicating the ever-increasing role that services have throughout the international trade system. Today, the rule making actions of WTO cover over 30,000 pages of regulations. (Dicken, 2002)

From the perspective of the poorer or developing countries of the world the current structure of trade through these agreements tends to benefit the richer countries at their expense. In some sense, the richer countries still make up a kind of "club" into which entry for others comes with difficulty. Joining this club can make very great differences to a country, witness China’s entry into the World Trade Organization in 2002. Despite the ideology that accompanies trade liberalization, richer countries continue to impose higher tariffs on the goods of poorer countries.

\textbf{Migration:}

The planet is in the midst of the largest migration of persons in its history: more people have relocated over the past two decades than ever before. The reasons are not hard to find. Migrations are usually associated with peoples moving toward something or away from something else, or both. Over history people have migrated in search of food, shelter and land; from relatively isolated rural settings to more cosmopolitan urban settings; as a result of natural disasters that have destroyed their ways of living; and away from areas devastated by war and civil unrest. Empire, conquest and slavery have been vehicles for transporting populations from one portion of the globe to another. But perhaps the most common reason people migrate is to seek work and fortune, to better themselves, their families and their group through relocation to what are thought to be more favorable economic climates.

Historically, migrations have been within political sub-units (a country, a nation-state, a principality, an empire) and between political units. Every epoch of technological change whether in agriculture, industry or the way that knowledge is produced and utilized by society has been accompanied by waves of migration. The countries of Europe and Asia are well familiar with diasporas—the movements of an ethnic or national group into the world in ways that extend the cultural influence of the sending group.

Migration that is economically motivated has usually been associated with an accompanying increase in urbanization. Cities, especially the industrial cities of the 19\textsuperscript{th} and 20\textsuperscript{th} century, grew up around great manufacturing enterprises. The period from the mid-1950’s to the present has been marked by a significant shift of manufacturing from the older industrial counties (primarily of northwest Europe.
and North America) to the developing regions of the world. Capital relocated to these regions, largely in search of cheaper labor. Labor tended to move toward these new centers of commerce and manufacture. The 1960’s witnessed new players in global manufacture. First the “four tigers of Asia” (Korea, Hong Kong, Taiwan, and Singapore) and to a lesser extent other Asian economies such as the Philippines, Indonesia and Thailand, joined the rebuilding economies of Japan and Germany (then West Germany). Other new players entered global production, such as Mexico and Brazil, undergoing extraordinary intensification of urban labor markets and the stimulation of migration. This, however, was merely a prelude to what would happen with the spectacular economic growth in the 1990’s of India and China.

This current migratory period has brought people into urban settings to a greater extent than every before. By the year 2000 more people lived in cities than outside them for the first time in human history. The world currently supports over 411 cities of more than a million population. This figure will rise to 550 by 2015. The growth of “megacities” those with populations greater than 20 million is represented on all continents except Australia. In reality, many of the mega cities are even larger as they become the site of giant conurbations, aggregations of cities and their surrounding population clusters, witness Mumbai, the NewYork/Philadelphia complex, and greater Tokyo. (UN Habitat, 2003.)

Contemporary globalization driven migration dwarfs preceding periods in part because of the sheer numbers involved. The enormous increases in world population that started to take effect in the 1950’s and 1960’s cascaded into the huge populations of the 1990’s and beyond. We discuss this issue further in Chapter Ten. Figure 2-1, however gives an indication of the spectacular growth in the world’s population, and especially that of the developing countries, many of which were/are in Asia, during these periods. (For further information see: www.prb.org)

Figure 2.1  World Population Growth

Population (in billions)
As global manufacturing and commerce developed throughout the world in the post-WWII period, migration from the developing countries to the developed increased as well. While the developed economies were losing jobs to the new economies (a process called at the time "de-industrialization"), the transformation of these economies into service and knowledge based economies made them attractive migration destinations for those from developing economies. Figure 2.2 demonstrates the amount of population growth accounted for by migration in the United States during the post war decades and shifts in its source regions.

**Figure 2.2 Regional Origins of Immigrants to the United States, Selected Years**

<table>
<thead>
<tr>
<th>Year Period</th>
<th>Immigrants (in thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1901–1910</td>
<td>8,795,386</td>
</tr>
<tr>
<td>1921–1930</td>
<td>4,107,209</td>
</tr>
<tr>
<td>1941–1950</td>
<td>1,035,039</td>
</tr>
<tr>
<td>1991–1998</td>
<td>7,605,068</td>
</tr>
</tbody>
</table>


The extent of between-country global migration can be gained from this *World Bank* summary:

“In 2000 some 175 million people, 3 percent of the world’s population, lived in a country of which they were not a citizen or in which they were not born. In developing countries the foreign population stock almost doubled, from 44 million in 1960 to 86 million in 2000. In high-income countries the migration stock increased from 29 million to 89 million during the same period. The net outflow of people from developing countries to high-income economies has grown considerably. During 1960–65 developing countries sent 2.8 million people to high-income countries. During 1995–2000 the number increased to 13.6 million. The greatest numbers came from East Asia and Pacific, Latin America and the Caribbean, and South Asia. In
addition to trade and investment, migration can also be important for global integration.” (World Bank Group, 2005)

**Figure 2.3: Variance of incomes (measured by GDP per capita) by Province in China (2003)**

![Graph showing income variance by province in China](image)

Note: Coastal Region ○, Central Region ▲, Western Region ◇

Within China, the pattern of income inequality (see also the next section) as illustrated by Figure 2.3 is closely related to the internal migration in China during the 1990s. This internal migration is called by some commentators the greatest migration in human history, estimated at some 150,000,000 people in a decade. Some economists argue, however, that remittances are an important corrective to this income inequality effect, and propose that greater liberalization of internal trade within China and a repeal of household registration would provide for an eventual evening out of incomes through remittance activity.¹ (Kwan, 2005)

**Inequality and questions of equity**

Another attribute of contemporary globalization, which we wish to see as one of its dynamics, are the inequalities that are being created within globalization. We will deal with this issue more fully in a subsequent chapter. For now it is sufficient to acknowledge that inequality of income, wealth, access to health care and education, etc., are all outcomes of globalization and because of the feedback loops within the global system, become drivers of the process as well. (These are often also termed “equity issues” referring to the idea that inequalities of access lead to inequities.) For example, when we examine the data we observe that over the past three and a half decades, roughly since 1970, levels of inequality,
measured in various ways, indicate that inequality has increased both between countries and within countries; and we observe that these data hold true for developed, developing and under developed countries.

Within the developed countries, the portion of wealth and income held by the top brackets has steadily increased. Worldwide we may be witnessing a transformation to the greatest period of inequality the world has ever known. For example, witness the claim of the University of California Atlas of Inequality “Global income inequality is probably greater now than it has ever been in human history. Currently, the richest 1 % of people in the world receives as much as the bottom 57 %” (UC Atlas of Inequality, 2005)

In simple terms, while economic globalization is producing ever-greater wealth in the world, the rich are getting richer and the poor poorer. This fact is acknowledged by the United Nations, The World Bank and the International Monetary Fund. What is not agreed upon is how to change this pattern. World Bank and IMF strategy has been to promote trade liberalization, open patterns of investment and the “restructuring” of developing societies to promote the private sector. These efforts are contested by those who believe that a strong state sector has been responsible in past decades for maintaining relative income inequality. This debate is very much in evidence in China where the development of private capital and economic liberalization is producing wealth for many, while others lose out (those “left behind”. ) Again, Figure 2.3 demonstrates the stark inequality of income between the coastal regions of China and the interior.

**Exchange and transactions**—Those who promote economic liberalization view the world as a global marketplace. The central mechanism of this marketplace is the exchange of goods and services. To gain a sense of how globalization is being established in some places and is advancing in others, it is useful to ask what is being exchanged in the global marketplace and by whom? This inquiry leads to a further set of questions such as how are such transactions conceived and realized? As a continuation of our discussion above concerning trade, we can see that the primary exchanges in the world involve the movement of manufactures to market, along with the natural resources and energy sources that make both manufacturing and the use of products possible.

Increasingly, however, we observe that globalization involves the exchange of services as well as goods. Increased service exchange is very much tied to the spectacular increase in the ways that information is created and exchanged, especially when information can be digitized. For many years, for example, most of what made up healthcare, a person receiving care from trained medical personnel, was thought to be an “in place service” something that was bound to the time and place of the interaction between the service provider and the client. This is no longer true, especially in radiology. The body can be scanned in many different ways producing varieties of images, which are then interpreted by a trained professional. Increasingly throughout the world this “reading of the image”
is being done where labor costs are cheaper than in the country in which the scanned image originates. This outsourcing of digitized labor is one of the principal dynamics of current global applications of labor. In a sense, whatever can be digitized can be outsourced to a cheaper labor market. Within the English speaking world, India is the leader in developing such information outsourced labor from software engineering to radiology. (For more on this subject see http://www.outsource2india.com)

The American political economist Robert Reich, who became US Secretary of Labor under President Clinton (1993-2000), refers to such knowledge workers, especially those in professional occupations, as symbolic analysts, meaning that the work they do really involves symbol manipulations and can be done without respect to a particular place location. Among those he saw in this category when he wrote in 1991 were architects, engineers, educators, etc. The numbers of occupations that fit into this category appear to be increasing with the general expansion of globalization. (Reich, 1991)

This example points to the degree that the exchange patterns of globalization can be said to involve symbols in various ways. For example, one can view the “languages” of contemporary globalization in this way as well. English has become the pervasive language of global exchange with the result that if one does not develop a capability in this particular symbol set, one is disadvantaged in the further range of exchanges that make up global commerce. (It has been suggested that in the contemporary world, one really needs four languages to “make it in the world”: one is the mother tongue, the language one initially learns within the family; the second is the national language—and which is often the language of “work”; the third is English as the language of global commerce; the fourth is some combination of computer literacy skills—which collectively can be seen to make up a “language.” Other symbolic exchanges have been embodied in new languages of global commerce such as those of global accounting in which entirely novel ways of constructing accounting regimes have come into existence with the dominance of global corporations.

**Symbolic activity**—The preceding example emphasizes how symbolic processes are central as a primary dynamic of globalization. Reich saw early in the 1990s how important aspects of global labor would be organized around symbolic activity. Educators throughout the world are becoming aware that national education needs to be geared toward preparing individuals for employment that is increasingly determined by the needs of the global economy. Recognizing that English has become the language of globalization, many Asian countries have undertaken extensive efforts to expand English language instruction. Even in countries where English is common, however, such as India, the structure of education in general (which can be viewed as an important symbolic process that has for centuries been framed by the development and needs of national cultures and their dominant languages) has been criticized for not preparing graduates for the global labor force. (Chronicle, 2005)
It is useful to view globalization as being organized around various sets of symbolic processes. Global advertising promotes images associated with particular figures (think of the association between the American golfer Tiger Woods and Nike products, or before him Michael Jordan, or Yao Ming and the promotion of the National Basketball Association.) Some scholars of how symbols organize our ways of viewing the world go so far as to see advertising as an “alternative education system” whose purpose is to teach populations a “grammar of consumption” that facilitates the sale of goods and services across national cultural barriers. (Henry, 1965) From this point of view, both positive and negative social identities are created and transmitted through the pervasive patterns of advertising. As individuals we “appropriate” these identities in ways that affect how we make other choices, e.g. how to dress, whom to admire, who to marry, etc. Older traditions of social analysis tended to see social customs and mores as a part of society that was “taken for granted”, meaning that they had their origin deep within existing social structures. Increasingly, students of globalization understand that identities and notions of self and other are socially constructed, in large part by the symbolic processes that we are describing.

**Part Two: Globalization as Processes**

In the previous part of this chapter we examined some dynamics that give shape and form to globalization. In this part, we examine some general process conceptions that can be applied to globalization usefully to illustrate how it operates and with what effects.

One of the most common processes linked to globalization has been the notion of “convergence,” the idea that as a result of the many ways that the world is interacting, a convergence is occurring producing new and increased commonalities. This is often what people mean when they speak of having a “global culture”, or what Barnet and Cavanaugh (1994) mean when they talk about the world increasingly being drawn together through common patterns of consumption. Seeing the world through a lens of convergence heightens our awareness of how many elements in the world of goods and services are shared across the world. Microsoft has become one of the most powerful corporations in the world, and its founder Bill Gates the richest man in the world, precisely because Microsoft operating systems are present on the vast, vast majority of the world’s computers. Indeed, the giant global firms have become so because they can and do operate in markets throughout the world. As the world’s stock of wealth increases (irrespective for this point of its distorted distribution) so do the capabilities of a firm operating in a larger set of markets.

The concentration of ownership of corporate assets in the world, and the relative domination of world commerce by an ever-shrinking number of firms is a feature of contemporary globalization. To repeat an instance cited in the previous
chapter, eight global media companies, dominate the production of films, television and related products throughout the world. (They are: AOL-Time Warner, Bertelsmann, Viacom, News Corporation, General Electric, AT&T Liberty Media, Sony, and Vivendi Universal. McChesney, 2002) The dominant media pattern throughout much of the globe is that these “top tier” media firms exist in relation to a “second tier” of firms that are smaller and less dominant globally, but tend to be the largest media companies within their own home nations. Over the whole sweep of media throughout the world, then, we can observe a pattern where a few large companies dominate markets. (McChesney, 1999) A recent phenomenon is video games, which now outsell movies in the global marketplace. The vast majority of video games are produced by a small number of companies, and run on a few platforms. The predicted global market in 2008 is approximately $55.6 billion with an annual compounded growth rate of 22 percent. Three platforms dominate the market: Sony’s PlayStation 2, Microsoft’s Xbox, and Nitendo’s GameCube. The annual sales market for platforms is estimated to be $3.5 billion in 2007. (Ulmer, 2005)

This concentration in ownership can be illustrated in other areas as well.

- Pharmaceuticals: The top 10 companies control an estimated 53% market share of the world's leading 118 drug firms.
- Biotech and Genomics: The top 10 firms account for 54% of the biotech sectors' $42 billion annual revenues.
- Animal Pharmaceuticals: The top 10 companies control 62% of the $13.4 billion world market.
- Seeds: The top 10 companies control one-third of the $23.3 billion annual commercial seed market.
- Pesticides: The top 10 firms control 80% of the $27.8 billion annual global pesticide market.
- Food Retail: The top 10 firms control 57% of the total sales of the world's leading 30 food retailers.
- Food and Beverage Processing: The top 10 companies account for 37% of the revenues earned by the world's top 100 food and beverage companies; the top 20 account for 53% of the top 100's total.
- Nanotechnology: Public & private sector investment in nanotechnology is an estimated $5-$6 billion per annum. (Organic Consumers Association, 2003)

Other examples of convergence can be easily identified in such diverse fields as medical care and technology, fashion, construction equipment, etc. Interestingly, one place where convergence has not occurred is where economists during the so-called “development decades”—the 1960s and 1970s—thought it would occur, namely throughout country economies. As we saw in the section above on inequality, whereas overall world economic production and growth have continued, economies have not on the whole converged. (World Bank, 2005)
Differentiation—When we adopt the lens of differentiation, however, not surprisingly, we see a different view of globalization. The convergence lens draws our attention to the many highly different aspects of globalization and looks for similarities. Differentiation encourages us to examine the ways in which globalization promotes difference. Interestingly, globalization often tends to promote convergence in the context of difference. Let us illustrate: if a society, a country, or a region is at a given point in time itself highly homogenous, the intrusion of styles, products, goods and services from “outside”, for example abroad, the initial impact may be to differentiate the new from the customary. However, it is often then the case that the intrusive elements begin to change the society, thereby triggering off a move toward convergence as “local” actors adopt the social patterns of the “outside”—the globalizing outside—and make them their own. This pattern of the global outside intruding on local customs and behaviors is sometimes seen from an elevated view part of ways in which “global integration” occurs.

However, as global influences enter societies, the overall effect may be to trigger reactions against them, as well as moves to embrace them. This process is familiar in the tension that people often see between the global and the local. When the global is viewed as originating from the actions of large global corporations whose wealth and ways are themselves “foreign” to the local, it can provoke resistance. The focus of such resistance is to preserve ways of life associated with the “ways the world was” before the intrusion. This characterization evokes the notion of “conservative”, and indeed is appropriate: it seeks to conserve values, customs and ways of life that were common before their displacement by the global. We discuss this further below in our section on change. Here, it is useful to note that differentiation can be viewed as “what was there” before globalization intruded, or as values and behaviors that arise in reaction to globalization, which is why we characterize it as a process through which globalization acts in the world.

Innovation—Innovation is one of the principal features of contemporary globalization. We can all easily point to innovations in a wide variety of areas, e.g. technology, architecture, science, communications and administrative practices, etc. As we saw in the previous chapter, for those who adopt the progress narrative, innovation and its exploitations are the basic drivers of global wealth creation. Innovation is commonly focused in the areas of science and technology. Indeed, throughout the research community of the most developed countries, the measurement of innovation by various indicators of gross domestic expenditure on research and development (GERD) signifies the extent to which an economy is “advanced”.

With a little effort we can appreciate that innovation is taking place throughout the global system. Our previous discussion of symbolic exchanges points to how innovation in accounting systems were responsible in part for the successful expansion and dominance of multinational corporations, through which the major
accounting firms of the US and Europe became multinational corporations in their own right.

It is something of a challenge to examine global commerce and patterns of exchange and not be impressed with the role that constant innovation plays in their continuation and advancement. Innovation in organization routines is one instance that might be easily overlooked. We discuss this below when we focus on globalized economies. For example, “managerialism” emerged in the 1970s and 1980s as a complex set of ideas about how firms in mainly private sector economies should be run in order to maximize labor force usage, produce large and consistent returns to invested capital, and facilitate the complicated arrangements necessary to run far-flung global corporations. (Many of the largest transnational corporations for instance, have as many or more employees working outside their country of origin than within it. General Electric, to take one example, the ninth largest corporation in the world in terms of income, has 310,000 employees worldwide, approximately 158,000 of which are employed in the United States, while 152,000 work out outside the U.S. (Note that in a continuing pattern of seeking to obtain organizational efficiency, GE has eliminated more than 150,000 jobs worldwide. Fortune, 2005 and GE Union, 2005) Managerialism’s spread throughout the world means that as countries develop, especially as a result of foreign direct investment (FDI), the form and the practices of the leading corporations in any country will follow those dictated by managerialism. This signals to us that innovation as a process is closely linked to diffusion.

Table 2.2 Top Global Corporations by Dollar Volume

<table>
<thead>
<tr>
<th>Top Global Corporations</th>
<th>1. Exxon Mobile</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Most Profitable Corporations</td>
<td>2. Royal Dutch/Shell Group</td>
</tr>
<tr>
<td></td>
<td>3. Citigroup</td>
</tr>
<tr>
<td></td>
<td>4. General Electric</td>
</tr>
<tr>
<td></td>
<td>5. BP (British Petroleum)</td>
</tr>
<tr>
<td>Top Five Asia Corporations</td>
<td>1. Toyota Motor</td>
</tr>
<tr>
<td></td>
<td>2. Nippon Telegraph &amp; Telephone</td>
</tr>
<tr>
<td></td>
<td>3. Hitachi</td>
</tr>
<tr>
<td></td>
<td>4. Matsushita Electric Industrial</td>
</tr>
<tr>
<td></td>
<td>5. Honda Motor</td>
</tr>
<tr>
<td>Top Five European Corporations</td>
<td>1. BP</td>
</tr>
<tr>
<td></td>
<td>2. Royal Dutch/Shell Group</td>
</tr>
<tr>
<td></td>
<td>3. DaimlerChrysler</td>
</tr>
<tr>
<td></td>
<td>4. Total</td>
</tr>
<tr>
<td></td>
<td>5. AXA</td>
</tr>
</tbody>
</table>
Diffusion—Diffusion refers to the process by which an innovation spreads from one place to another. Models of diffusion have been developed that are used in applications as diverse as the introduction to a new product (e.g. athletic shoes), to new technologies (e.g. the internet) to the spread of disease (e.g. SARS). Diffusion models focus on predicting the ultimate level of distribution or market penetration of the thing being studied. (Ultimately full penetration would equal saturation—everyone in the market would have the thing in question. When this situation occurs, the overall diffusion model predicts new innovations will enter the market to encourage new consumption.) These theories of diffusion of innovations consider how a new idea or a new kind of behavior will spread throughout a market during time.

Diffusion mechanisms represent powerful forces for change in the world. In various ways, of course, innovation and diffusion have always been part of human society, as discoveries, diseases and customs spread throughout the world. What is new in contemporary globalization is the speed with which diffusion can ripple throughout societies. We see this spectacularly in the spread of infectious diseases. For infectious diseases to spread from one population to another, they require a host—a living organism, either human or animal, an appropriate set of environmental conditions and a suitable means of transmission. (Diseases that originate in animals and spread to humans are called zoonoses.) Modern transportation systems assure that infected hosts can move from one part of the planet to another with the speed of air travel, as demonstrated in recent years by the spread of SARS and Ebola fevers. Diffusion models permit epidemiologists and public health officials to predict how disease will spread. From this information, they can develop interventions designed to interrupt the diffusion pattern. Table 2.3 demonstrates the rate of Internet diffusion among subscribers in contemporary China.

Table 2.3 Internet Subscribers in China

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Users</th>
<th>Population</th>
<th>% Pen.</th>
<th>Usage Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>22,500,000</td>
<td>1,288,307,100</td>
<td>1.7%</td>
<td>ITU</td>
</tr>
<tr>
<td>2001</td>
<td>33,700,000</td>
<td>1,288,307,100</td>
<td>2.6%</td>
<td>ITU</td>
</tr>
<tr>
<td>2002</td>
<td>59,100,000</td>
<td>1,288,307,100</td>
<td>4.6%</td>
<td>ITU</td>
</tr>
<tr>
<td>2003</td>
<td>69,000,000</td>
<td>1,288,307,100</td>
<td>5.4%</td>
<td>CNNIC</td>
</tr>
<tr>
<td>2004</td>
<td>94,000,000</td>
<td>1,288,307,100</td>
<td>7.3%</td>
<td>CNNIC</td>
</tr>
<tr>
<td>2005</td>
<td>103,000,000</td>
<td>1,289,664,808</td>
<td>7.9%</td>
<td>CNNIC</td>
</tr>
</tbody>
</table>
The diffusion of innovations within economic systems differs in that these models tell those who are seeking adoption of the innovations about the kinds of things they can do to maximize the probability of adoption. It is in this arena that we observe how the “shrinking of time and space” by modern communications as well as transportation technology come into play. In many ways, as suggested in the previous chapter, these dynamics are one of the most dramatic features of globalization and are doing much to accelerate the process of change.

Coherence and Conservation—Events over the past two decades, especially since the development of the internet, emphasize an important counterpoint to innovation and the information explosion. The vast spread of information creates a new need to make sense of all this information. For example, the number of medical articles produced in medical journals throughout the year exceeds one million. Under these conditions of information proliferation, traditional means of search and organization are overwhelmed. The Internet quickly gave rise to the development of search engines, which in turn were winnowed down to a surviving few, with Google emerging as the clearly dominant search engine by the year 2000. As this chapter is being written, other major players in the information search and coherence business, especially Microsoft and Yahoo, have invested billions of dollars in research and design in an effort to develop comparable devices. One measure of the importance of this function is the fact that when Google sold its initial shares to the public (a process that is known as IPO—initial public offering), its opening share price was the highest in the history of the New York Stock Exchange. Making sense of the world’s information has turned into one of its major businesses.

Along with the need to impose coherence on the information explosion comes the need to conserve it. This need has produced an entire industry, for example, for the back up and preservation of electronic information. It also raises very important questions about what information will be conserved by whom and for what purposes. These issues, not very much debated in discussions of globalization, will, we believe, come to be of extraordinary importance in a world in which the “production” of information not only includes information that is deliberately produced (e.g. newspapers, television, research reports, etc.) but extraordinary amounts of information gathered through highly varied processes of surveillance. The terrorist events in London, England in 2005 remind us of the commonplace use of surveillance cameras in public places, a growing trend in many of the world’s cities. The capture of electronic communications by both governments and private companies has reached dimensions unimaginined as recently as a decade ago. In the United States a number of important court trials have been decided on the basis of email correspondence that was several years old, and which was believed by those who wrote it to be destroyed, but which had been saved in central servers. The combination of this deliberate
conservation of information and unintended surveillance is an important feature of how globalization dynamics are changing the world in which we live.

The changing nature of information conservation also raises questions about the relationship of information to knowledge. Information refers to the production and dissemination of content through many different technologies and sources. To be informed in the modern world means to have access to and to be a recipient of numerous information sources, especially those that are relevant to one’s important social groups. (What it means for a chemist to be informed and what it means to be informed as a citizen, or a sports fan involve different bundles of information, although they can overlap in important ways.) What constitutes knowledge is a different matter. That term has meant in the past not only the capacity of being informed, but being conversant with a body of information ordered by coherent constructs, especially that which is highly regarded by some group in society, and often that which is revered as being of special value. Thus, the knowledge of science, literature, medicine, philosophy and culture, just to name a few, have been deemed by societies to be of particular importance, and indeed, are the kinds of things that institutions of “higher learning” such as universities have been organized around.

The information explosion creates enormous tensions between those “knowledge traditions” honored in the past and what is considered important information in the present. All universities, for example, are under pressure to re-evaluate their curricula to assure their relevance, especially their relevance for preparing people for employment in the global marketplace. Of equal importance are challenges to our understandings of how people learn and how educational systems should be organized to “maximize” learning. Here, we want to emphasize that these processes by which societies determine what information will be conserved and what not. will do much to determine the kind of world we live in five, ten, fifteen years from now.

References for Further Study:

Keeping up with the kinds of changes taking place in the global system is beyond any single person, or research organization’s capacity. However, various organizations publish websites that provide very useful data than may be of value to provide further illumination of the kinds of relationships discussed in this chapter.

Worldometers publishes a variety of data in real time. For example, by clicking on the website you can watch the world’s population change, second by second, or the rate that top soil is eroding, or the cumulative hours in a year people wait for websites to download, and many other facts that help to document the rate of social change in various dimensions. http://www.worldometers.info/
References:


 Future Toolkit, 2005, [www.futuretoolkit.com](http://www.futuretoolkit.com)


UC Atlas of Inequality, [http://ucaтратas.ucsc.edu](http://ucaтратas.ucsc.edu)


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1 In an attempt to stimulate its economy through market expansion, China is striving to sign free trade agreements with neighboring countries. Standard economic theory suggests that the greater the interdependence among members of an FTA, and the stronger the complementary relationships among them, the larger the "trade creation" effect will be. It is the various regions within China, rather than China and its neighbors, which meet these conditions most fully. However, regional trade barriers still exist in China, and it has yet to become a unified market. In order for the economy to develop further, China should vigorously pursue an FTA that brings together its own provinces before seeking such agreements with other countries. This would also help correct regional disparities.

In particular, if the barriers restricting the flow of labor, such as the household registration system, were to be removed, workers would most likely flow from inland and rural areas where wages are low to the coastal and urban areas that are rapidly industrializing. Production will increasingly become concentrated as a result, but income levels in the country will tend to equalize. This is because remittances by migrant workers can provide an important source of income for inland regions. In addition, the inflow of labor can help curb increases in wage levels in the coastal regions while in the inland regions the outflow of labor will help raise wages. More than 100 million people are already said to have become migrant workers, but because these people do not have permanent residency in the places to which they have moved to work, they face various forms of discrimination including medical care, education for their children and social security. The current household registration system, which restricts the flow of people, must be revised to allow the free movement of people so that these problems can be corrected.

ii For those interested in the mathematics of the model: A purely innovative process has no contagion - members of the population spontaneously adopt at a certain rate. The process is:

\[
\frac{dY}{dt} = p^*(S-Y)
\]

where \(Y\) is the number who have adopted, \(S\) is the saturation adoption (some members of the population may be "immune", so \(S\) is usually less than the total population); \(p\) is the rate of adoption. At any instant, \((S-Y)\) is the population at risk and \(p\) is the hazard rate.

This innovative process yields the modified exponential:

\[
Y = S^*(1 - \exp(-p^*t))
\]

A purely imitative process has contagion only. The process is:
\[ \frac{dY}{dt} = q'(Y/S)(S-Y) \]

the population at risk is \((S-Y)\) as before, but the rate of contagion increases as people become infected: \(q'(Y/S)\).

This imitative process yields a logistic \((S\text{-shaped})\) growth curve:

\[ Y = S/(1 + C\cdot\exp(-q't)) \]

The Bass model contains both innovation and imitation:

\[ \frac{dY}{dt} = (p + q'(Y/S))(S-Y). \]

When few people have adopted, innovation drives adoption. As more consumers adopt, awareness will grow, acceptability and social pressure will grow and contagion starts to drive growth.
Chapter Three: The Levels of Globalization.

In this chapter we introduce the idea of “levels of analysis”. Specifically, we recommend the use of six levels of analysis in seeking to understand how globalization can be understood:

- the global,
- the regional
- the nation-state
- the sub-state
- the local
- the personal.

Science and discourse follow a basic principle of inquiry, that the higher the level of analysis one employs, the more one sacrifices detail. Conversely, the more one focuses on detail, the more one sacrifices the larger view. This principle appears generalizable across all levels of observation: moving up and down the scale of generality gains one kind of information while losing others.

By advocating the use of these six levels of analysis, we seek to encourage readers to appreciate the complexity of globalization. As you read, we urge you to concentrate first at one level of analysis, then compare your finding with those from one or more other analytical levels.

As the most comprehensive level of analysis, the global incorporates, networks, forms of exchange and processes that exist trans-nationally, extending throughout the world. They are authentically global in character in that they are operating in similar ways simultaneously across the globe. Contemporary telecommunications networks, currency values, standards of weight and measure, airline transport protocols, and containerized shipping offer ready examples of this global reach, as do the various financial networks that tie global cities together as important nodes for such networks. In our chapter on urbanization we refer in detail to the circuits of exchange or the circuits of globalization. It is the global movement of goods and services, information, wealth, people, etc. through these circuits that requires this level of analysis.

Regional analysis focuses on the different forms that globalization takes in various regions of the world. Globalization in Africa expresses itself quite differently from globalization in Europe or Asia, even while sharing many things in common. Increasingly countries are organizing themselves within regional associations of one form or another, for defense, trade, education, health, etc. The emergence of the European Union (EU) over the past several decades from the Common Market represents the most dynamic example of this process. The advantages to member states are many. Collectively, for example, the EU
constitutes an economic and trading unit larger than the United States. The Association of Southeast Asian Nations (ASEAN) is an entity with similar goals, but to date has not achieved the regional integration of the EU. In various later chapters we will refer, for example, to changes in current trade patterns showing both pauses and expansions in the growth of global trade through the World Trade Organization (WTO) and its major global agreements, including since 1995 the General Agreement on Trade in Services (GATS).

Globalization is sometimes discussed in terms of the tensions that exist between the nation-state and the transnational phenomena. Hence, the need for analysis at the level of nation-states. Responses to the pressures of globalization differ greatly among nations even in the presence of their commonalities. In our later chapters we will make a distinction about nation states based on their viability, their ability to organize, provide order, establish legal frameworks that generalize across populations and are enforceable, and create the minimal social requirements for their populations: infrastructure such as roads, power and transportation facilities; meet public health requirements of minimal food security, clean water, adequate sanitation and minimal health and medical care. States that are unable to do these things are termed “failed states”, and their existence in the world severely compromises how globalization takes place.

Analysis at the sub state level level, however, allows analysis of particular strengths in large nation-states where a country’s internal regions may retain strong economic differences, customs, and traditions, including language differences. In Brazil, for example, the influences of globalization on cities such as Sao Palo differ markedly from those on the cattle ranchers and farmers in the Amazon rain forest. In the United States, the pressures of globalization on industrial centers such as Michigan and Ohio differ greatly from those affecting grain-growing areas such as Nebraska, Iowa, and Kansas. It is also often at sub-state levels that one finds different historic patterns of wealth creation and distribution, often based on patterns of land holding, and access to capital. Many nation states in the world seek to move toward higher levels of national economic integration to respond more effectively to the full range of globalizing influences that travel through them. Sub-state regional differences are often embedded in the domestic political status of nation states, in which often one region possesses a relative advantage over others. When one or more area of a state develops substantially greater wealth others, the resulting unequal economic development leads to different pressures from the circuits of globalization. For example, while Michigan in the U.S. loses jobs overseas in the competition for car sales, growing demand for the grain from Nebraska, Iowa and Kansas increases their global sales. In China the failure of farming in drought-ridden areas of the north has led to labor migration to the cities in the southeast. In many countries the combination of local and global pressures often triggers rapid urbanization, moving populations at the sub-state level.
Local geography, populations, and cultures have distinctive features of their own, and consequently a local level of analysis allows readers to examine the influences of globalization in what is the most familiar around them in their own lives. For example, the poverty, violence and lack of government control that have become commonplace in Lagos, Nigeria appear at odds with the rise of Nigeria as a source of oil on a global scale. In our discussion, local is a subjective distinction that individuals employ depending on their individual and group frames of reference. Local narratives in local idiom that describe or explain one’s local existence as a familiar view of the world provide a distinctive contrast to views of the world that demonstrate the impact of globalization on local daily life. More on this below.

Finally, we focus on the personal as a level of analysis. Irrespective of everything else, we experience the world and globalization, as persons. In this particular instance we are interested in examining some of the ways that the ideas of person, self, and other are constructed by global processes, including—again, ironically— notions of the local.

Two Case Studies of Levels of Analysis:
In the following pages we provide two case studies, one involving the competition on the part of the world’s two largest aircraft companies to develop a new generation of passenger aircraft, the other efforts on the part of various states to control immigration. Each offers a classic globalization issue. The first case reviews how the world’s two surviving aircraft giants seek to gain and hold position in the highly competitive market for passenger aircraft. The second looks at the global flow of persons as they move from one nation state to another, an outcome largely occasioned by the flows of capital that change job mixes in one set of countries and create new jobs in others.

The Aircraft and Airline Industries--Global

Consider the production of large airliners used globally, then examine the international agreements and protocols by which airlines with global routes operate. Both the production and use of air transportation equipment reflect truly global operations.

Two major transnational manufacturers - Boeing and Airbus - dominate sales of major airliners, with the second tier producers including Northrop Grumman, McDonnell Douglas, Fokker, Tupolev, Short, Saab, Caravelle, and Convair. Through the first 9 months of 2005, Boeing received orders for 641 airplanes worth some $98 billion, Boeing’s sales, representing a key part of exports that the U.S. counts on to counter balance the flow of imports. Without Boeing’s global sales, the U.S. trade imbalance world grow ever more precarious. Among Airbus’s orders for 150 planes in the first six months of the 2005 was one for 50 planes from China.
The aerospace industry in the US creates approximately 1.8 million jobs, mostly high-skill, high-wage jobs, paying on average 45 percent more than manufacturing as a whole. (Downey, 1997) Airbus production and other aerospace work in places such as Germany and France also employ substantial numbers of highly skilled workers and engineers. But such highly valued jobs are now migrating overseas, as the suppliers of Boeing and Airbus seek cheaper labor and less restrictive regulations. Consequently both Boeing and Airbus have consciously distributed some part of airliner production to suppliers in countries around the world, thus linking sales into those countries to the continuing employment of engineers and others in the labor forces of these countries. Boeing has as much as 30% of its parts for its 777 airliner produced by suppliers in countries such as Italy, Russia, and South Africa, and it has recently shrunk its suppliers from 3800 to 1200. (Avery, 2006) Both Boeing and Airbus also recently have moved some of their production to China.

Both Boeing and Airbus receive subsidies in some form from the governments of their originating countries - the U.S. and France. Both supply aircraft for military purposes and thus are linked into the defense budgets of a variety of countries. Both have services and training partners who sell pilot and maintenance training into the global air transport market, necessary accompaniments of the airplanes they sell. And on a global basis both use video streaming for training personnel and computerized databases for parts to assure compliance with airplane maintenance, safety requirements, and replacement part availability.

Boeing and Airbus are evolving transnational corporations, each with strong foreign policy support from its nation of origin helping it to compete as it sells into a global market. Both work with international air traffic controllers to set and improve safety requirements. For example, the latest giant airliner from Airbus carries so many passengers that airport gates and fire equipment must be changed to accommodate passenger flow and safety. The new Airbus plane offers an example of global commerce in which changes in aircraft design require costly improvements in infrastructure, safety equipment, and training at airports around the globe.

At any given time commercial air transport has approximately 61,000 passengers aloft in the United States alone, and many more thousands aloft on a global scale. Rising demand for air travel has moved nations to add airports and to develop and follow uniform global agreements on air traffic control, systems impact that localities and that travelers take for granted. Protocols internationally for air traffic require pilots and air traffic personnel on the ground to use the English language as a default language, another mark of the homogenizing influence of globalization. Pilot standards, flight attendant requirements, and mechanics' training are also standardized globally by manufacturers and nations to assure safety. And, on a global basis the dominant Boeing/Airbus oligopoly in aircraft production marks a maturing stage in a global industry. Production of the
new Airbus plane will require an estimated $10 BILLION for development. (Reuters, November 24, 2006) Hence, entry into aircraft production now carries prohibitive costs, and second tier producers and anyone seeking entry must seek niche markets, such as those for regional aircraft.

Beginning in the 1980’s both Boeing and Airbus began to “outsource” aspects of their manufacturing to other labor markets. This strategy made sense in bringing to bear less expensive labor, but it also had the additional benefit of courting the key business circles and governments of those countries to whom they wish to gain orders and sell planes. Thus, in a sense, all such airliners (as with many other complex manufactured items such as automobiles) are truly global in that their component parts are manufactured throughout the world. China has recently taken a large step toward perhaps becoming an eventual player in the global aircraft market. In November 2006, the state-owned China Aviation Industry Corporation I (AVIC-I) announced that it had entered the regional jet market with the sale of 60 of its MA60 turboprop and 30 of its ARJ21 turbofan jets. This announcement came a day after those of Jin Zhuanglong, the deputy commissioner for science, technology, and industry for national defense, announced that China would design and manufacture large aircraft within five years. At the same time Airbus signed a joint venture contract with AVIC-I and AVIC II to operate the Airbus engineering center in Beijing. A final assembly line for the Airbus A-320 will be completed in Tianjin in 2009. Laurence Barron, the Airbus China president in making the announcement remarked, “There would be no difference between the A 320s assembled in China and those in Europe. (Chen Hong and Lu Haoting, 2006)

While many air carriers confine operations within a nation or region, carriers with global routes must coordinate maintenance infrastructure, crew housing, and operations throughout a global network. Global airlines typically establish national centers or hubs out of which they command operations for a nation or region, thus affecting the economic growth and employment in that region. As global air travel demand has risen, for example, United Airlines, Japan Airlines, and British Airways have evolved from national airlines to regional then global airlines. Global air transport has played a major role in weaving the interdependencies of the globalized world, and an understanding of global transport requires that both equipment production and operations be examined from global as well as regional, national, and even local perspectives.

Regional Analysis

In the pocket of every airliner is an in-service flight magazine, at the back of which is almost always a route map for the carrier. With these visuals, a moment’s inspection reveals the geographic reach of the airline, its “hubs” that originate and receive the most traffic, and the most heavily trafficked routes.
It is more difficult to imagine a single route map of all of the world’s carriers. Were such a visual available, it would demonstrate two things very quickly: one, the incredible “density” of airline travel throughout the world -- especially between its primary cities; two, that regional air traffic represents a substantial part of total air transportation. Statistics are not commonly gathered on within-region travel, but Table 3-1 indicates the extraordinary amount of air passenger travel clustered by region. In addition to the more than 2 billion passengers who flew in the past year, airlines also shipped 51,873.8 thousand metric tones of goods, of which 34.946.3 thousand metric tones were classified as international. (Airports Council International, 2006)

<table>
<thead>
<tr>
<th>Geographic Region</th>
<th>12 month period ending May 2006</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INTERNATIONAL PASSENGERS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AFRICA</td>
<td>22,985,000</td>
<td>6.9</td>
</tr>
<tr>
<td>ASIA PACIFIC</td>
<td>255,294,000</td>
<td>6.8</td>
</tr>
<tr>
<td>EUROPE</td>
<td>610,074,000</td>
<td>5.7</td>
</tr>
<tr>
<td>LATIN AMERICA CARIBBEAN</td>
<td>33,367,000</td>
<td>1.7</td>
</tr>
<tr>
<td>MIDDLE EAST</td>
<td>20,244,000</td>
<td>13.1</td>
</tr>
<tr>
<td>NORTH AMERICA</td>
<td>119,962,000</td>
<td>3.2</td>
</tr>
<tr>
<td>ALL REGIONS</td>
<td>1,061,926,000</td>
<td>5.7</td>
</tr>
<tr>
<td><strong>DOMESTIC PASSENGERS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AFRICA</td>
<td>21,388,000</td>
<td>12.6</td>
</tr>
<tr>
<td>ASIA PACIFIC</td>
<td>254,871,000</td>
<td>7.5</td>
</tr>
<tr>
<td>EUROPE</td>
<td>173,350,000</td>
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</tr>
<tr>
<td>LATIN AMERICA CARIBBEAN</td>
<td>47,076,000</td>
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</tr>
<tr>
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</tr>
<tr>
<td>ALL REGIONS</td>
<td>1,077,812,000</td>
<td>4.1</td>
</tr>
<tr>
<td><strong>TOTAL PASSENGERS</strong></td>
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<td></td>
</tr>
<tr>
<td>AFRICA</td>
<td>44,373,000</td>
<td>9.6</td>
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<tr>
<td>ASIA PACIFIC</td>
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<tr>
<td>EUROPE</td>
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<tr>
<td>LATIN AMERICA CARIBBEAN</td>
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</tr>
<tr>
<td>NORTH AMERICA</td>
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</tr>
<tr>
<td>ALL REGIONS</td>
<td>2,224,303,000</td>
<td>4.6</td>
</tr>
</tbody>
</table>

(Definitions: International = traffic passengers PROVIDED between the designated airport and an airport in another country/territory. Domestic = traffic PROVIDED between two airports located in the same country/territory. ) Source: Airports Council International, 2006

Regional air traffic is one important mechanism (along with other modes of transportation and communication, of course) by which regions come to develop identities, establish affinities, and trade goods and people. The massive effort to expand and construct new airports throughout the world, especially in Asia, owes equally to international air traffic which is highly regionalized. Often, countries will
specify some airports as domestic and some as international, but clearly the
trend is for an expansion of international destination airports, again, with a
primary goal of meeting the steadily increasing demands for regional travel.

With China emerging as a major manufacturer of aircraft, and some of its aircraft
intended specifically for the shorter range regional market, we see a
phenomenon simultaneously having different effects at the global and regional
levels. If China continues to emerge as an economic superpower, its aircraft will
be given priority status in the purchasing plans of countries with regional air
transport needs, following the pattern that emerged earlier with Boeing (and
McDonald Douglass before it merged with Boeing) and Airbus.

Aircraft and air travel readily allow similar kinds of analyses AT the national and
sub-regional levels. The ability of a country to develop sufficient capital to create
and sustain modern, safe, dependable air travel at reasonable cost is a major
requirement to becoming a modern state. Such air travel influences national
economic and social integration. The benefits that accrue throughout societies
with such air travel include: the rapid and efficient movement of business and
public administrative persons; the relatively inexpensive rapid shipment of freight;
the ability to create order throughout countries, especially those that are large.

We encourage readers to examine and list the consequences of aircraft
production and air travel that arise at the national level, at the sub-national level,
at the local, and at the personal.

With respect to local and personal levels of analysis, innovations that transform
the rapid movement of peoples across large distances quickly are likely to
produce significant levels of social change. In the terms we have used
throughout this text, these are boundary-altering, or boundary-destroying
phenomena. Just as modern communication media can eliminate boundaries
and transform societies, effective transportation and especially air travel create
powerful transformative energies within societies that are the heart of social
change. However much people as individuals and groups are grounded in
traditional local behavior and pursuits, such travel allows outside influences to
become routinely and mundanely present alongside the local. Similarly, modern
transportation has the capacity to move the individual from the local to the
regional and global. Combined with instant modern communication, these forms
of transportation lie at the core of the shrinkage of time and space. David Harvey
nominates this attribute as perhaps the central feature of globalization. (Harvey,
1990) Across all the levels of analysis, the combined effects of modern
communications and transport also shape the transformation of personal
identities, a major change that increased global interdependence has brought to
the world.

Again, the reader is encouraged to continue this exercise by exploring how
aircraft manufacture and transportation affect their worlds at the level of the
national, sub-national, local, and individual. We also suggest that you ask yourself how similar analyses would differ – including personally -- in the absence of such convenient air travel.

**Case Two: Globalization at Multiple Levels--The Southern Border of the U.S.**

Global, regional, national, and local levels of analysis also apply simultaneously to the historic flow of immigrants, which is a primary characteristic of contemporary globalization. In recent years immigration on the southern border of the U.S. mirrors some of the cross-border migrations throughout the world. Mexican and Central American immigration into the U.S. has raised primary questions about open borders in a globalized world. (Here again, Thomas Friedman’s notion of contemporary globalization, asserting that the “world is flat” [that is, increasingly without borders and boundaries of conventional form], deserves scrutiny and challenge. See Friedman, 2005)

Most of the immigration in question comes from Mexico and Central America across the southern border of the United States. Labor migration – an ongoing global issue in many parts of the world – reflects globalization *nationally* in the Gross Domestic Product of the US -- *locally* in employment and the productivity of many regions in the US, and *personally* in the remittances of money back into Mexico, Guatemala, and other Central American countries from which workers make their way into the US. In addition to the legal and illegal (or documented and undocumented in much current usage) migrations into the US, globalization since the 1960s has changed the nature of this border. TNC’s early on located their *Las Maquiladoras* assembly plants on the Mexico side of the border to gain access to cheaper labor and less stringent environmental laws. Drawn initially to these border factories to find work, millions of workers from Mexico and Central America over the subsequent decades continued on their journeys north to join the US labor force. (Sable, 1989)

At the global level, immigration is part and parcel of the global migration of labor, discussed further on in our chapter on labor. Labor migration is linked to transformations in the global nature of work, the distribution of capital investment, governmental agreements on migration, the decisions of transnational firms on where to locate production and develop trade, and a variety of other considerations, such as the ease of illegal border crossing, and the willingness of employers to employ both legal and illegal aliens.

At the regional level, migration across the U.S. southern border is mirrored in Asia by the multiple flows between countries. In most cases the causes of this migration trace back to transformations in the way of life in rural settings, rural inhabitants needing greater amounts of currency to navigate within a cash economy, and the concentration of the jobs and opportunities in urban centers.
As we discuss in our chapter on urbanization, some migration is provoked by the demographic unevenness of the world wherein members of younger populations (e.g. the Philippines, China) move toward older populations (e.g. U.S., Japan) as service providers. In Asia, Europe, and North America, as we discuss below, most migration is "demand pull", that is, demand for cheaper labor in one country or region motivates the movement of labor from poorer countries and regions. These patterns of migration dominate movements from the middle-east and eastern Europe to western Europe, as well as from Central America to North America.

Continuing within the frame of this example, at the national level, in the United States 30 percent of all legal immigrants come from Mexico. Like all nations, the United States struggles to determine legal criteria for admission to the country and how to deal with illegal immigrants, for the promise of wealth and abundant life attract many people to the US from all over the world. Over the past four decades, the U.S. has struggled through several immigration reform laws, as is the current pattern in numerous European countries. These struggles tend to pit domestic interests against one another in complex ways. For example, the U.S. is an immigrant country beginning with western European immigrants, followed by the importation of African slaves, then sizable populations from Mexico as the U.S. acquired territories formerly held by Spain and Mexico. A major influx of immigrants followed from Europe in the mid-19th century. Historically, it has sought to limit immigration from other countries in favor of immigrants from northern European protestant countries. For example, subsequent restrictive legislation severely limited entry by those from Asian countries as well as those from Africa. Domestic political confrontations within the U.S. have pitted those who favor the influx of cheaper labor against those who oppose it for social, cultural, religious, reasons, or for the demands immigrants make on U.S. education and other social services. In recent years US immigration quotas have very much favored those with specifically desirable professional qualifications. (For a review of current U.S. immigration policy see HHS, 2006)

Over the past several decades, however, the paramount immigration issue involves illegal or undocumented migrants from Mexico and Central America, who presently account for as many as 9.2 million members of the U.S. labor force, filling jobs in agriculture, construction, fire fighting, domestic work, food service, clothing production, day labor, and a variety of other roles.¹ From these

¹ Alternately some 3,000 US citizens work legally in Mexico. From 2004 on an agreement to coordinate Social Security systems between Mexico and the US allows these US citizens to stop paying into both Mexican and US Social Security systems, and gives them a choice of one system into which to pay (for ten years in the US, for 24 years in Mexico to achieve vested payments), and later to draw on these funds in retirement. Some 37,000 Mexicans who work legally in the US will now have rights to draw on US Social Security for nearly $1 billion under this agreement.
workers many families in Mexico in 2003 received $13.3 billion a year in remittances, 25% more income than Mexico received annually from the international sale of Mexican oil. (Federal Reserve 2004)

According to the narrative from those who favor the present flow of undocumented workers across the US-Mexican border, these Mexican workers in the US:

• relieve poverty via remittances returned to Mexico,
• supply essential labor for jobs that US workers decline,
• keep food prices lower in the US because of the dominance of low paid Mexican workers in US agricultural harvesting,
• supply 38% of workers who fight fires annually in the US western states,
• keep construction costs from rising more rapidly,
• are only claiming their cultural rights in regions that historically belonged to Mexico.

This positive narrative reminds us that Mexican workers pay tens of billions into the US Social Security system that as non-citizens they can never draw upon. (Kassabian, 2005) Many also pay into federal and state income tax systems. In this narrative, the absence of Mexican workers at low wages would amplify inflation in the US, and raise food and construction prices in particular. Workers crossing the border illegally have done so for generations, and have become a recognized and necessary part of the U.S. work force. Some later apply for citizenship and become normal, useful American citizens; their children born in the U.S. automatically are U.S. citizens with the rights and protections that US citizens deserve. These children have rights to draw on food stamps and other forms of federal and state poverty assistance. This narrative adds that the workers crossing the border need U.S. protection from those who smuggle them in, as some have been forced into prostitution or sweatshop labor.

The fate of Chinese workers smuggled into the U.S. is often as grim. Most illegal Chinese immigration is targeted at New York or San Francisco, where such migrants can blend more easily into the relatively numerous Chinese populations of these cities. While the exact size of illegal Chinese migration is unknown, estimates are that many thousands each year pursue this path. The benefit and risk arguments made on behalf of such immigrants parallel those for Latino migrants. (Wang, 2001)

The US minimum wage continues at $5.15 per hour (approximately $10,700 a year, or 62% of the US poverty level income), and remains unchanged to reflect inflation in the last nine years. It does not apply to many jobs taken by illegal immigrants, many of whom work for cash.
A contrary or negative narrative holds that these illegal aliens make expensive demands on U.S. federal, state, and local services. Those offering this narrative say that Mexicans and other Central Americans in the U.S. illegally:

- use false Social Security numbers to draw on U.S. Social Security services and funds and other forged documentation to gain entry to jobs and benefits;
- make demands on state unemployment funds, on local school systems where their children attend classes, and on emergency rooms, hospitals, and health care systems such as Medicaid.
- add substantial costs to border patrols and security,
- as immigrants without background checks, they pose threats of terrorism.
- by accepting lower pay, they drive US citizens out of the jobs that they take,
- by sending money to Mexico, they diminish funds which would increase the circular flow of the economy in the U.S. and create still more US jobs.
- by accepting cash for their work, they illegally dodge paying taxes,
- the remittances that they send out of the U.S. enlarge the balance of payments deficit of the US.
- Finally, because most of them enter the country illegally, break our laws, and induce employers to break our laws as well, they introduce an element of lawlessness that negatively impacts American society. (Rabe, 2006)

At the state level, some citizens along the U.S. border with Mexico have taken it upon themselves to post themselves along routes used by undocumented immigrants and report these people to border patrol agents. U.S. Border Patrol agents routinely have to rescue undocumented immigrants from dying in the desert of America's southwest, and at cost to the U.S., must daily ship hundreds of them back to Mexico, which offers them no support. The individual narratives of those undertaking this dangerous journey are clearly the personal, linking their life and death struggles with global labor dynamics.

With the U.S. Congress locked in disputes as it tries to establish new national immigration policies to deal with this flow of illegal immigrants, the U.S. president has been forced to try to bridge differences between those holding these opposing immigration narratives. However, even as the national government seeks to address the issue, local issues and impacts quickly overtake the political conversation. Mexican-Americans throughout the U.S. have repeatedly demonstrated in most major cities, and have formed a loosely knit political block to protest U.S. mistreatment of immigrants from all over the globe. Given their numbers, this block of voters must now be addressed effectively by those running for elective office nationally, within states, and at local levels. The immigration issue will continue to influence the outcome of elections in the United States and in turn U.S. relations with Mexico. How the U.S. Congress and President formulate new immigration policy will also affect the many U.S.
businesses and industries that have come to rely on this immigrant labor as a part of the U.S., regional, and local economies.

The two opposing narratives provide very differing views on whether illegal immigrant labor drives down wages for low end jobs, or to the contrary, supplies desperately needed labor for difficult, low paying jobs that Americans refuse to take, and consequently lowers the cost of food in the U.S. for and many, many services. At the local level, it is worth inquiring what would happen to wages in cities such as Phoenix, San Diego, and Los Angeles if immigrant labor from Mexico disappeared? The answers to these questions sit pending resolution to the ongoing dispute between the two opposing narratives of this immigration across the southern border of the U.S. On the global scale, similar disputes must be dealt with in the European Union, where immigrants from around the world come seeking a better life.

Again, at the sub state level of analysis, strong ideas of the local develop particular strength, especially in large nation-states where a nation’s internal regions such as the U.S. southwest may retain strong customs and traditions, including language differences linked to Mexico. In our analysis we treat the local as another level of analysis in and of itself, recognizing that elements of the local can certainly be associated with a country or a sub-region within a country. In our discussion, local is a subjective distinction that individuals employ depending on their individual predispositions and frames of reference. For example, global climate change manifests in local droughts in northern China. Throughout Southeast and South Asia it has become necessary to investigate and pursue entirely new crops that can adapt to chronic changes in the amount of moisture available for agricultural success.

Finally, we focus on the personal as a level of analysis. Irrespective of everything else, we experience the world and globalization as persons. For example, a person in the European Union, including immigrants, . . . can now look to the EU-wide regional system known as REACH which prohibits the sale of chemicals harmful to humans. As indicated throughout our discussion of migration, ultimately the decision to leave one’s home, locale, culture, and society to seek employment elsewhere is an intensely personal decision, one which makes the phenomenon of globalization immediate and tangible.

Any useful understanding of globalization requires a willingness to explore various points of view and levels of analysis. Those undertaking a study of globalization should recognize that opposing narratives often characterize events, situations and policies quite differently. Like a newspaper reporter with high standards, you will need to attribute information to its sources, and weigh reports and evidence objectively, examine the validity of varying claims, and exercise patience and persistence in delving into the authoritative nature of sources that make claims and supply information. Using these critically important skills and investigative techniques combined with the various levels of
globalization analysis rehearsed in this chapter will prove useful in thinking about and discussing globalization
References


This chapter is about change and some ways to view it. We make no pretense that these are the only useful ways to look at change, but simply some forms that change takes in the contemporary global environment. This chapter, then, invites the reader to begin examining the complexities of global change.

Here are five ways of thinking about change, each in some way keyed to the dynamics of contemporary globalization.

**Novelty**—Globalization is producing some new ways of “experiencing the world,” creating entirely new global forces, processes, and institutions. For example, global stock and bond markets permit traders to invest on a 24/7 basis instead of Monday through Friday during limited hours. The Internet is another innovation that has profound implications for how we communicate, create, and retrieve information globally. Innovations such as these, along with their consequences, make it useful to ask how novelty affects the overall processes of change.

**Combinations**—Globalization also changes the world by combining older ways of behaving with what’s new, sometimes combining two or more ways of doing things. On-line banking and shopping, for instance, bind together traditional shopping and banking with 24-hour high-speed computer access from home or anywhere in the world. This new combination eliminates the need to travel to shop or bank, producing new ways to accomplish these traditional activities, ways that have considerable impact on individual time management, social organization, jobs, consumption patterns, etc.

**Extinction**—While globalization brings some practices, values, or institutions into being, it also causes others to disappear. The notion of extinction becomes visible within the United States, for example, when WalMart and other “big box” retailers overwhelm and extinguish local retail stores.

**Predicaments**—The term predicament refers to complex situations in which it is difficult or impossible to come up with a predictable solution. Conventional change notions tend to see change either as reductionist science (how the part affects the whole), or as an essentially step-by-step, linear process (beset with significant, often catastrophic interruptions) that societies and institutions use to identify “problems” and in one way or another “solve” them. Complexity theory and chaos theory, however, offer us new ways to view the world and its dynamics of change. These new approaches examine how highly complex systems can generate single or simple outcomes and resist anything you might call a solution. For example, while billions of individual cells form a human body
and need to survive, they coordinate in ways that allow that body to operate as a unit, signaling when it needs food or water, rest or action. But examining one human cell would not tell you how this cell could coordinate with other cells to maintain body functioning. Complexity theory investigates how flocks of birds naturally turn together in flight, and how schools of fish moving in synchrony through the sea. Complexity theory examines how something happens when large numbers of individual units come together and interact with each other, which makes it useful in studying globalization.

*Globalization leads societies to face situations that are better described as predicaments than problems, i.e., situations from which there is no clear way to proceed. We explore this notion of predicaments to introduce the idea that the process of change itself may be changing. Predicaments are associated with the politics of crisis decision-making.*

**Status quo**—Some things don’t change very much despite the global pressures on them to do so. The forces of change represented by globalization may actually create resistance to change, which reinforces the values of the status quo sufficiently to sustain the status quo in the face of change. People or institutions trying to preserve traditional economic practices or religious and social customs must deal with the tension between forces trying to initiate change and the value people assign to the status quo.

**Changes Created by Novelty**
Novelty and innovation are, of course, closely related. We use the term novelty to speak of an innovation that has come to be adopted throughout much of the world. Since the early 19th century innovation and novelty have radically changed the world, giving rise in the 19th century to industrialism, and in the 20th to such things as the internal combustion engine, aircraft and air travel, radio and television, satellite communications, the transistor, the revolution in consumer electronics, nuclear power…The list goes on.

If we use the concept of novelty as a lens, what important novelty elements appear as forces shaping the contemporary era of globalization? To illustrate the value of using novelty as a tool for global analysis, we turn to how communications and networks operate in the contemporary world.

Novelty in the areas of communications, bio- and nano-technology, or the properties of international finance, has led to all of these forms of human endeavor becoming inter-dependent and based on other innovations and inventions. All of these areas make use of the computer, which means that all make use of micro-processors. Contemporary communications is built on its predecessor technologies, the telegraph and telephone of the 19th century, etc., which offer a way to see globalization as the extension of earlier innovations. The advent of the microprocessor has led to huge changes in related fields. What makes these innovations novel and important, however, are (a) their scale and
widespread distribution, (b) their very inter-relatedness and (c) their cumulative impacts on human behavior. Let us illustrate.

Contemporary communications includes everything from channels of mass communications, to the internet, to cell phones, to satellite surveillance and transmission, to digital television and radio, to medical imaging, etc. In short, global communications includes all information production and gathering that is accomplished through technology, electronic as well as non-electronic (e.g. print media, which are increasingly produced through electronic means). The phenomenon also includes all other communication that take place through non-technological means, e.g., face-to-face communicating networks. As new technologies appear (e.g. cell phones), human behavior changes as a result. For example the world gains an immediacy through the accessibility of people through cell phone networks, contributing to the shrinking of time and space as one part of the world is immediately available to another. New patterns of life are made available through the work and leisure created and altered by communication technologies. The American sociologist Manuel Castells calls the combined effect of these things the network society, an outcome that emerges from the organizations and reorganizations that take place as people explore, employ, and extend the ranges of these communication technologies. (Castells, 1996)

Networks are perhaps as old as human society, but social analysis of them is really the product of the last three decades. Networks analysis can be studied and understood from all the six levels discussed in the earlier chapter on levels of global analysis (global, regional, nation-state, area, local, personal). Networks exist at all these levels, and appreciating how they work assists one in understanding how globalization works. For example, the Internet is a global network, created by linking millions of computers throughout the world in accordance with a common protocol. Telephone networks are created through a similar mechanism. Hardware and software create the physical network capability that links sources of information and allows the flow of information. The human agreements that set communication standards and develop and deploy protocols are the result of other kinds of networks of people, organizations and international agreements. The outcome is a loosely organized structure of cooperation that provides the many members of the network benefits that are superior to any they could have provided for themselves, i.e., the whole serves its parts.

Networks attract individuals and groups to join them because participation provides a benefit they could not obtain through their own resources. Networks that do not provide expected benefits over time tend to fail. People withdraw their support to seek alternatives that will supply such benefits.

At the personal level, an individual can simultaneously be a member of any number of networks. Unlike other kinds of social groupings (what sociologists
might term “tighter groupings”), the looseness of networks does not imply that those with whom one interacts in one network need to link with those in another.

No one knows how many networks have grown up in the world, as many are built on the capabilities of the largest communication networks. Were one able to know how many networks exist, that number would be obsolete within moments. This is Castells’ point: organizing society around networks creates a dynamic that has its own capabilities and change properties, many of which are unpredictable. As globalization sometimes demonstrates, networks are difficult if not impossible to control directly, or in many cases to regulate. The blogosphere is a term not even known a decade ago, but one which now refers to the millions of personal internet communication pages that occupy a significant portion of the internet, continue to grow with extraordinary rapidity, and which are developing their own search vehicles. (See for example http://blogosphere.com) The network “capacity” of individuals, groups, societies, or the world at large creates an open-ended set of possibilities for association, re-association, and change. It represents true novelty in the contemporary world and is inseparable from what globalization has become. Networks represent one of the ways that globalization has promoted a “boundary-less”, low-bounded or “flat” world. (Friedman, 2005)

**Combinations**

When an innovation designed for one use or application migrates to another, or when two or more innovations are bundled for a new use, much change takes place. Distance education is one example of combinational change. Electronic distance education uses one of two sets of combinations: a) synchronous media such as television, combined with the Internet or over telephone lines, put people separated by distance together electronically in real time; b) asynchronous techniques allow people to communicate via a common forum, but free them from the requirement to interact at the same time. In this situation a standard educational practice, for example, the classroom and its methodologies, is combined with various combined technologies to overcome the place and time limitations of the traditional classroom. To facilitate these practices, specific software applications, such as WebCT and Blackboard, were developed. To use them, one had to purchase the software, a constraint on educational institutions with limited means. To clear this hurdle, the Sakai Foundation in 2004 initiated the Sakai Project to develop a community source software program to develop a Collaboration and Learning Environment (CLE) which builds on the open source model made famous by Lenix, Mozilla, Apache and other non-commercial oriented products. As this example suggests, combination changes operate by creating multiplier effects: for example, whatever the number of persons or actions involved before the new combination, the numbers of those involved enlarge after the combination, sometimes many times over. Further, when combinatorial changes take place, they often have the side effect of transforming the institutions using them. Sometimes combined changes create new
institutions altogether, as in some schools whose students are taught completely online. Both transformed institutions and innovative institutions have developed with on-line distance education, especially in higher education applications.

On-line banking and ATM machines represent another combinatorial innovation that links the concept of the credit card (itself a major innovation of the global decades) to individual uses of credit and bank accounts. Prior to this combination, personal banking was indeed personal—one had to present oneself at a bank with documentation to access one’s deposited cash. The ATM machine revolutionized this process and gave individuals access to their accounts any time they wished to do so. This service soon coupled with credit cards, as the bank access card became a credit card, permitting cash access in thousands of international locations. Recently, this arrangement has coupled again with the sponsoring bank cards (e.g. Visa or Mastercard) also functioning as debit cards to one’s bank accounts.

Electronic linkages also now permit one to pay bills, purchase materials, seek loans, and engage in a wide-variety of other bank related functions online. These innovations grew out of the so-called “dot-com” revolution of the late 1990’s when the commercial applications of the world wide web and Internet were rapidly exploited, opening up the world to what has come to be termed “e-commerce”, shopping on-line, and auction sales via such exchanges such as E-Bay. Although global data are probably unreliable, Visa International reported that in 2004 global e-commerce transactions would reach $150 billion, up from $96 billion in the previous year. (Visa 2004)

These particular combination changes illustrate the shrinking of time and space, and suggest the complexities of economic behaviors and institutional transformations that can arise from combinations. In discussing the phenomenon of outsourcing in an earlier chapter, we observed that whatever information can be digitized can also now be outsourced, and illustrated that point in part with the global commerce in medical radiology. (Outsource2India, 2005) Outsourced radiology, however, is only one portion of a growing industry termed variously telemedicine, or telehealth, which provides a broad range of health services at a distance.

Developed for populations located at long distances from medical treatment facilities (e.g. among island groups in the Pacific, ships at sea, or sparsely populated rural areas), telemedicine is designing applications for specific treatment situations. Telemedicine also now functions in urban settings. For example, the Central area of Los Angeles, California is home to many persons without medical insurance. A common problem among poorer populations is poor eye health and undiagnosed eye problems in children. One alternative solution to locating expensive facilities in this area has been to install an eye-scanner that can be operated with a brief orientation. The actual eye scan takes only a few moments. The images are then captured in a “hold and forward” mode and
transmitted to a medical center (in this case in New York City) for review at a later time by an ophthalmologist, who then conveys his reports back to the clinic in Los Angeles. This arrangement proves to be economically efficient and brings a needed service to a population that would otherwise be forced to do without. This practice of “scanning at a distance” is but one element of expanding telemedicine applications that include psychiatric counseling, health surveys, and even surgery. (Telemedicine Information Exchange, 2005) The use of digital cameras to capture and review surgeries can be seen as another instance of these combination dynamics.

Some recent examples illustrate how simple extensions of combinations can produce significant global change in the global economy. Tape recorders and recording tape grew out of an “office culture” needing to record voice data. They were adapted to music recording and playback in the 1950s, but did not become a significant market and begin to change consumer habits until they shrunk significantly in size, and until 8 track recording technology gave them a sound quality comparable to that of disks. The recorder/tape technology then moved laterally to recording video as well, replacing film and transforming live video presentations into later, better edited presentations of recorded shows and news on video. Much smaller audio-cassettes became available, and the entire music industry was transformed, following which video cassettes appeared as well. Standardizing formats made all of these combination technologies a global information phenomenon. Multiple uses such as surveillance recording cameras in retail stores and the sale of dramatic films of video-cassette soon followed globally. Change via technological combinations has continued with MP3 players, and more recently with those devices that began as “cell phones” but now are multi-media devices with a broad range of applications, including re-transmission of television programs. As we write these words, this basic device that began as a cell phone or I-pod is developing into a complex device that will store and in many cases transmit almost any kind of digitized information.

The events leading up to the Iranian revolution in 1978 surprised the world as it discovered the role that cassette recorders were playing in bringing the voice and speeches of the Ayatollah Khomeini to the Iranian people. The Shah’s regime had been relatively successful in controlling conventional media, i.e. radio and television, but not the underground phenomenon of audio recordings.

**Extinction**

Somewhere in every discussion of technological change someone will raise the example of how the internal combustion engine and automobiles did away with horse drawn buggies. In discussions about technology eliminating jobs, the paradigm example is the “buggy whip maker,” a job no longer required when cars replaced horse drawn buggies. This example also demonstrates how every technological change of significance alters its surrounding forms of social organization. Cars led to huge changes in city planning, land use, driving as recreation, trucks for use in commerce, deaths and injuries from accidents and
tied motorized transportation to what would be the global industry of energy creation and distribution. As adoption proceeds and succeeds, it may displace and eventually extinguish other practices, institutions, arrangements, actions, beliefs, and values. As we discussed above, the dynamic between the global and the local continues, and all the levels of application in between them. A good portion of the politics of globalization extends from the organization and mobilization of those who perceive their interests being threatened by impending extinction. Extinction naturally accompanies the varieties of change generated by globalization.

Consider, for example, language extinction. The pressures that the dynamics of political and economic higher-order “integration” place on language uses have resulted in significant language extinction. As nation-states have grown over the past two and a half centuries, regional, group, tribal, and ethnic languages have given way to national languages, a process that has been radically accelerated in the last 70-80 years by the homogenizing influence of broadcast media. National media tend to marginalize “local languages” by providing content in the national language.

The administrative and organizational behaviors of integrated national economies including providing national education create powerful incentives to teach and use the national language, crowding out local languages. The data on language extinction are stunning. Linguists now see the threat to linguist resources as a worldwide crisis. As many as half of the estimated 6000 languages in the world are classified as “moribund”, meaning that they are spoken by adults who no longer teach them to the next generation. An additional 40 percent may be threatened. “In other words, 90 percent of existing languages today are likely to die or become seriously embattled within the next century.” (Crawford, 1998)

As the global economy continues to move to higher orders of integration, we see regional, less integrated economies imitating the patterns of the national economies that dominate global trade. English has progressively emerged as the de facto language of globalization. Nations wishing to be fully engaged in the global economy have quickly discovered that they must develop a workforce fluent in the English language. Many nations have placed great importance on teaching English in the schools and in post-secondary education. Consequently, even greater pressures are brought to bear on those at the local level who keep sub-national languages alive and in active use. In the terms we are using, one outcome of globalization is language extinction.

**Predicaments**

Like so many features of globalization, the idea of change has a common sense meaning to it that leads us to believe that not only we, but others as well, know what we mean when we say the word change. But as we discovered with the term globalization, a word and its concept have differing meanings with different people. Moreover, where one lives has much to do with how these “meanings”
are brought together and applied. So, too, with change. It can have numerous meanings depending on a host of variables, such as the speed of change, how many people are affected by a given change, cultural attitudes toward the status quo, where change is taking place, how a specific part of change alters social structure and processes, etc. One of the more puzzling things to be said about change and globalization, however, is that the processes of change themselves may be changing within globalization and as a result of it.

People who make these claims about the nature of change are influenced by recent investigations into both chaos and complexity theories.

Globalization and its speed of change raise questions about the stability of world systems, and raise the need to use complexity theory and chaos theory to examine how complex systems function. The stability of a complex social or economic order competes with the forces of change that tend toward chaos, leaving order and chaos seeking a sensitive balance or equilibrium. Too much order stifles the creativity and change that bring the benefits of novelty and greater efficiency. Too much chaos means more creativity, but the destruction of the order and known patterns we rely on to feel secure and accomplish anything. Observers now use complexity theory and chaos theory to determine how complex systems such as globalization function and produce results. These theories are also used to identify the tipping point where either too much order or too much chaos takes over. Chaos theory relies on sophisticated mathematics and uses of computers to examine the multiple variables of complex systems. (Gladwell, 2000)

Global economics and population growth suggest why people have come to associate globalization with chaos theory. Some assert that the extremely large numbers of variables and interactions that characterize globalization as a complex system may cause it to behave in random ways. Complexity theory is a term sometimes used to refer to computational complexity theory, a field of theoretical computer science. It is more generally used to refer to the behaviors of complex systems that include subjects such as chaos theory, artificial life, or genetic algorithms. Scientists now use complexity theory to study subjects such as neuroscience, meteorology, evolutionary computation, or earthquake prediction, often seeking “non-linear coupling rules” that lead to complex phenomena, rather than merely describe them. Human societies and human brains—in this view—are complex systems in which “neither the components nor the couplings” are simple. (Wikipedia, 2005) (For a further discussion of complex systems see: Science, Vol. 284. No. 5411 1999, which is a special issue devoted to this subject.)

The important thing to gain from this brief discussion is that globalization can be seen as a new order of complex systems whose rules of interactions, or “non-linear couplings” we are just beginning to observe and understand. Consequently, as we seek to comprehend globalization, we need to develop
models that are built on this level of complexity and interaction. Again, in the language of this science, we seek to be led to these relationships, not merely to describe them.

Some philosophers of complexity tell us that by predicaments, they mean that under conditions of complexity, making a decision requires different thinking and actions. In a linear world, they argue, even in conditions of relative complexity, situations can be viewed simply as problems which can then, under the right conditions, yield to predictable solutions. Indeed, this simpler cause-and-effect oriented approach is probably the more common way to see the world. If we can generate solutions to what we see as our problems, then virtually all of us will think highly of ourselves and our institutions. Complexity theorists, on the other hand, say that this confidence may be misplaced under conditions where the issue has less to do with providing solutions to problems, and more to do with making decisions in predicaments. The latter require that individuals make choices among various possible courses of actions the outcomes of which are uncertain.

To illustrate, we commonly speak of global warming and the depletion of fossil fuels as if they were problems requiring solutions. Rather, they are predicaments created by the ways societies have organized themselves for the past several hundred years.

For example, there is no way that the world can continue to employ fossil fuels at the current or predicted rates and avoid continued global warming and all of the catastrophic results that it will bring. Were we to see global warming as a problem (as many do), the solution would be either to drastically cut back on the use of fossil fuels and/or to rapidly develop low emissions renewable fuel alternatives. Many large-scale complex systems, like ocean liners, cannot be quickly turned about. Scientists estimate that even if radical changes were made today in slowing the growth of fossil fuel emissions to the atmosphere, this would not stop the melting of the polar ice caps or arctic permafrost. Were the Greenland ice cap or the Antarctic Ross Ice Shelf to completely melt, sea levels would rise from 14 to 20 feet (approximately 4 to 6 meters), bringing about catastrophic effects to the world’s coastal areas, where most of the world’s people live. Further, any solution via sudden, radically reduced fossil fuel emissions would mean sacrificing our current models of economic growth and our personal aspirations for economic advancement. The worldwide use of fossil fuels has created a complex system that has spawned sets of consequences. While some of these outcomes were (perhaps) foreseeable in the past, many—like current weather patterns—can now be seen as only one event that arises out of the complex situation we have collectively created. In yet another example of the essential inter-relatedness of these phenomena, pine forests throughout the northern latitudes from British Columbia to Mongolia are being destroyed by pine beetle infestation, as many as 20,000,000 acres (approximately 8.1 million hectares). The beetles are no longer dying off in the winters which are no longer
as cold as they once were. Examples abound. This, then, is the global warming predicament.

Another example is world hunger. Were this viewed as a set of problems, we could move readily to solutions. We know how to grow enough food to feed the world. But, in the ways we finance, innovate production, grow, and distribute food, we have created the world hunger predicament, which can only be resolved if collectively the world engages the issue differently. To address the predicament of world hunger, we collectively have to change the ways in which the complex world food system operates. We rely on food producers who are themselves caught up by rising oil prices, producers who also damage the environment with pesticides and topsoil loses, yet we must have their food. The perceived needs, values and interests of those who are producing, processing, transporting and selling food make significant claims on the world's resources, creating the world food predicament.

One way to think about predicaments and how they are different from problems, is that in order to address predicaments effectively, we cannot continue doing what we are doing and significantly alter the course of the predicament. Altering its course requires one to re-conceptualize the situation, to understand anew how doing one thing in the complex situation produces a possible set of consequences, and then acting in ways that we believe will produce the “best” outcomes. Predicaments are uncomfortable because in addressing them, we can act with only partial information (because complex systems produce both unintended and unpredictable consequences) and with a limited assurance of success. For societies that have lived with notions of problems and solutions, this lack of certainty in pursuing outcomes is unsettling. Seeing the world as a set of problems has been in large part reinforced by the nation state system of borders and boundaries that permits a “people” to look inward to its own society and national governments as a primary frame of reference. Global theorists who emphasize the boundary lessening nature of globalization emphasize that this perspective may increasingly be obsolete, and that we may need to develop more “ecological” models of the world that emphasize how its structural parts interact.

Finally, because complex systems are difficult to understand and predict, one human tendency is to ignore the complexity and uncertainly that go with making the “best” choices under these conditions. Instead, many facing a complex dilemma just go forward until a crisis is produced and then respond to that crisis. Governments often behave this way. Policy analysis often suggests that to gain perceived “good outcomes” for society on a given issue, for example, obtaining cleaner air in the midst of increased fossil fuel use, various interests (consumers, producers of automobiles and fuel, etc.) will have to change their behavior in costly ways. They resist such change and organize in the political process to oppose such policies. Government at this point is often hamstrung by political considerations and can do little. But then a crisis occurs where everybody is
negatively affected to the point where these opposing interests must give way. Government can act under conditions of crisis in ways that it cannot under so-called normal conditions. Public health offers multiple examples where government resists intruding on interests that benefit from behaviors that endanger public health. Only when a crisis breaks out, for example, when a deadly infectious disease emerges, is government “empowered” by public sentiment to take the actions necessary to meet the public health threat. (Stone, 1997)

We will continue to discuss predicaments and crisis decision-making throughout the subsequent chapters.

**Status Quo**: To include consideration of the status quo in a discussion of change may strike some as ironic, given that the term’s root meaning is “to stay the same”. However, one can argue that a preference for maintaining the status quo is an attitude toward change that often involves taking action to maintain situations, and is therefore a kind of change dynamic.

As we have seen throughout the current and preceding chapters, globalization is marked by the extent and speed of the changes it is producing. Resistance to these changes can come from any number of groups. Some resistance comes from those globalized at the bottom of the income scale, people who believe that they are losing out on the benefits of globalization, and who would prefer things to remain at least the same. (Often they would prefer a situation that precedes the changes that globalization has brought.) Other kinds of resistance can come from those whose economic interests are displaced by global forces, such as small local, regional or national businesses that cannot compete with transnational corporations. Resistance can come from environmental groups who perceive that globalization threatens the ability of the planet to effectively sustain life and social organization. (Gills, 2000)

Another common form of resistance lies within the conjunction of culture and belief, often where religious values are involved. These predispositions for the status quo are articulated as religious conservatism or fundamentalism. In general the phenomenon commonly termed fundamentalism is a reaction within any belief system to change. One can find fundamentalists in business organizations, political parties, or on sports teams. The core attitude is a belief in a value system that existed at one point in time and that is viewed to be superior to alternatives and modifications that arise out of social change. Fundamentalism is often tied to texts or practices identified with charismatic individuals, especially the case within religious fundamentalism.

Political conflict over globalization frequently takes the form of some kind of status quo view serving as the basis for resistance. Coalitions of resistance may bring together individuals and groups whose reasons for opposing globalization may be quite different. This feature is common to the dynamics of political
opposition, where the coalition of those opposed to a given manifestation of power may contain as many basic differences as commonalities; they are brought together in the moment by their opposition to a particular force or regime.

**Conclusion**: We offer five ways of conceptualizing change as tools for examining how globalization dynamics operate in the world, affecting us all in myriad ways. Our observation is that for most of us, most of the time, change is something that we tend to take for granted. It is a concept we learn as children and adapt in various ways to new situations as we mature. Unless we mark it off in particular knowledge sub-fields, such as the sociology of change, we tend to assume that we know what change means and are relatively confident in our individual abilities to acknowledge and interpret it. This chapter seeks to challenge some of this common-sense acceptance of change. In line with the arguments made in previous chapters, we suggest to the reader that globalization is more than a convenient term to discuss some things going on in the world. Rather, it is a set of powerful forces that are changing many of the ways we know and operate in the world. Learning to be self-conscious about change, to *think* about change in new ways is a considerable challenge that we need to build into our systems of education and policy making.
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Appendix to Chapter 4:

This excerpt from the Sakai website indicates the origins and intents of the project:

The Sakai Project is a community source software development effort to design, build and deploy a new Collaboration and Learning Environment (CLE) for higher education. The Project began in January, 2004.

Goals The Sakai Project's primary goal is to deliver the Sakai application framework and associated CMS tools and components that are designed to work
together. These components are for course management, and, as an augmentation of the original CMS model, they also support research collaboration. The software is being designed to be competitive with the best CMSs available. The tools are being built by designers, software architects and developers at different institutions, using an experimental variation of an open source development model called the community source model (see below). To provide a support system for institutions that want to be involved in the Sakai Project, either by adopting Sakai tools or by developing tools for inter-institutional portability, the Sakai Project has also formed the Sakai Educational Partners Program (SEPP) and the Sakai Commercial Affiliates Program.

Origins The Sakai Project has its origins at the University of Michigan and Indiana University, where both universities independently began open source efforts to replicate and enhance the functionality of their existing CMSs. Soon after, MIT and Stanford joined in and, along with the Open Knowledge Initiative (OKI) and the uPortal consortium, and a generous grant from the Mellon Foundation, they formed the Sakai Project.

Community Source Development Model The Sakai Project follows what is called the community source model, which is an extension to the already successful, economically feasible, open source movement forged by projects such as Apache, Linux, and Mozilla. Based on the goal of addressing the common and unique needs of multiple institutions, community source relies more on defined roles, responsibilities, and funded commitments by community members, than some open source development models. For another review of developments in asynchronous on-line education, see: http://www.sloan.org/programs/historystatus.shtml.

“In mathematics and physics, chaos theory deals with the behavior of certain nonlinear dynamical systems that (under certain conditions) exhibit the phenomenon known as chaos, most famously characterized by sensitivity to initial conditions [such as the butterfly effect.] As a result of this sensitivity, the observed behavior of physical systems that exhibit chaos appears to be random, even though the model of the system is ‘deterministic’ in the sense that it is well defined and contains no random parameters. Examples of such systems include the atmosphere, the solar system, plate tectonics, turbulent fluids, economies and population growth.” (Wikipedia, 2005)
This chapter presents a review of some significant changes in global economics:

1. The emergence of China, India and smaller South East Asia nations to compete with the US and the EU in industrial power;
2. Governments acquiring and running huge transnational corporations, controlling key commodities such as oil and natural gas, and setting off intense competition for resources on a regional and global scale; in addition, newly wealthy nations seeking investment options in their Organization for Economic Co-operation and Development (OECD) customer countries.
3. A credit meltdown contributing to a developing global recession. Global inflation suddenly raising food and commodity prices worldwide, posing extremely serious threats of major food scarcities, which already have set off a range of social and political problems such as spreading food riots and restrictions on international sales of grains; and
4. Growth, newly seen as a market failure, as it is now clearly tied to global warming, an urgent global problem on a scale that now threatens civilization itself. Consequently the belief in growth, and its reliance on fossil fuels now faces an urgent need to change, to find ways to achieve sustainability.

A Shift in Economic Balances.

Global economics appear to be moving from the existence of a single global market dominated by western industrial nations toward a heavy reliance on Asia as the primary producer of consumer goods. It follows that Asia is becoming more powerful politically and more of an investor globally.

Some observers say that the growing dominance of a handful of huge economies such as the U.S., China, the EU, and India carries the global consequences of such growth and its underlying consumerism too far. For example, as an economy, the U.S. presently produces roughly $13.4 trillion a
year, roughly 27% of everything produced in the world for 4.5% of the globe’s population. Yet the U.S. also acts as a major buyer, supporting the exports from the rapidly rising economies of China, India, and other global exporters. As the December, 2007 conference on global warming and CO2 emissions held in Bali, Indonesia demonstrated, the governments behind these growing major economies have begun recognizing that humanity has over-reached the limits of the natural resources supporting globalization – the tide of rising growth and consumption. The major nations now meet regularly in a United Nations sponsored attempt to develop a global treaty on greenhouse gas (GHG) missions, hoping to complete it by the end of 2009. We are experiencing what biologist Garrett Hardin called *The Tragedy of the Commons*, which we explore later in this chapter and in the following chapter on *The Revolution: Toward A Sustainable Environment and Global Economy.*

The extraordinary growth in Gross Domestic Product [GDP] in the economies of China (9.8% in 2008) and India (9.4% in 2008) illustrates a dramatic shift of industrial production toward Asia – what World Bank President Robert Zoelick calls, “new poles of growth . . . new stakeholders in globalization. . . . a welcome diversification of the sources of growth.” (The Economic Times, 2008) Growth data for the region emphasize the pattern:

- Global firms plan to locate 77% of their new Research and Development facilities in China and India;
- Chemical companies recently have closed 140 facilities in the U.S. and plan to locate 50 new facilities of $1 billion or more in China.
- Foreign students, many from China and India, now exceed in number American students in U.S. science and engineering graduate programs. (Augustine, 2008)

To explain the immense scale of China’s exports, James Fallows writes that from:

“Hong Kong and Shenzhen harbors, cargo ships left last year carrying the equivalent of more than 40 million of the standard 20-foot-long metal containers
that end up on trucks or railroad cars. That’s one per second, round the clock and year-round—and it’s less than half of China’s export total " (Fallows, 2007)

As a result of their growth, China, India, and smaller producer nations such as Indonesia, Thailand, Vietnam, Bangladesh, and Singapore all face a struggle to put their growth on more economically, socially, and environmentally sustainable paths. The balance of Asia’s growth versus its negative global consequences reflects an intensifying global pattern – growth triggering tipping points leading to severe damage and disasters in the environment.

Rapid growth in Asia, however, has created a new wealthy class, and moved hundreds of millions of people into a new middle class. Their increased demand has, as expected, set off serious inflation and contributed particularly to a serious inflation of food prices. By the spring of 2008, for example, pork prices in China soared as more people can afford grain-fed meat regularly in their diets. In 2008 China faced crop losses, serious water shortages, soaring oil prices, and rising grain imports as it sought to up for its own grain shortfalls of 10%. (Economist, April 19, 2008). India scrambles to feed 17% of the world’s people with less than 5% of earth’s water and 3% of its farmland. (Economist, April 19, 2008) These food challenges result partly from a global pattern that includes, “the food riots now spreading across the planet because the prices of staples are soaring, while stocks of basics are falling. In the last year, wheat (think flour) has risen by 130 percent, rice by 74 percent, soya by 87 percent, and corn by 31 percent, while there are now only eight to 12 weeks of cereal stocks left globally. (Klare, 2008)

Despite a 2008 government claim by China that it had 40% of a year’s grain demand in storage, global grain reserve stocks are at an all time low. As one observer put it, they are one bad harvest away from food scarcity spreading the kind of political and social failures that have recently set off food riots in 33 countries
Food and commodity prices also explain why inflation runs over 8% in India, and 7.4% in Indonesia, nations where growth also creates more demand. After observing a decade-long flow of inexpensive export goods from cheaper labor in Asia, global economists now describe inflation as Asia’s most significant export. That means prices are rising worldwide.

With 1.1 billion people and rising middle class of 325 million, India has huge growth underway despite, “inadequate infrastructure, a cumbersome bureaucracy, corruption, labor market rigidities, regulatory and foreign investment controls, and high fiscal deficits. India eliminated quotas on 1,420 consumer imports in 2002." (Travel Document Systems, 2008) At $1 trillion of annual GDP, India’s economy is now the 12th largest globally. Its largest trading partner and investor is the U.S., with rapid growth in services such as outsourcing and
software production leading the way. Two thirds of the population, however, still depends on agriculture for income. (Travel Document Systems, 2008)

China and India’s national governments struggle to deal effectively with population growth and the rapid rise of private industries. For example, “the average farm size in China . . . has fallen from 1.5 hectares in the 1970’s to barely 0.5 hectares now.” (Economist, April 19, 2008) Moreover, in China centrally planned economies co-exist in an imbalance with market based economies. While the central government controls the production and distribution of electrical power, and has attempted to control inflation by cutting energy prices, coal suppliers in China are allowed to set their own prices as private businesses. When these coal prices rose responding to demand, electrical suppliers cut coal purchases, which in turn led to cuts in electrical power supplies, and the U.S. economy matches that efficiency, power outages, and losses in production. (Victor, 2008)

Sidebar: China’s Oil Demand

China’s oil demands rose 86% in the last decade, from 4 million barrels a day in 1997 to 8 mbbl/d in 2008. This demand left China importing 4 mbbl/d. At its present growth rates, China will need 12 mbbl/d by 2020, and 27 mbbl/d by 2030, with imports reaching 10.8 mbbl/d by 2030. By contrast U.S. oil demand remains static at roughly 21 mbbl/d, efficiencies in use covering growth in production.

Peak oil is arriving, and the world probably cannot sustain more than 100 mbbl/d of production, much less the CO2 from burning that much oil. According to observer Michael Klare, strong global competition for remaining oil reserves may take the form of China and the U.S. rattling swords or forming cooperative ventures such as super light weight vehicles and advanced forms of biofuels not based on food crops. (Klare, 2008)
“Economic activity, by design, is shifting away from state-owned enterprises and central planning. But Beijing doesn't have structures in place to control those aspects of the economy it doesn't own outright. Market reforms are making Beijing less and less relevant to what's really going on in the economy, threatening to turn China into a "weak state." And it's not just China—India, too, is having trouble regulating its industry and economy. The phenomenon is a dark cloud on the Asian century.” (Victor, 2008)

Parallel problems with energy distribution obtain in India, where the government adjusts prices for political reasons, supplies some with free power, and does little to stop the theft of power in urban settings. (Victor, 2008) Parallel problems with energy distribution obtain in India, where the government adjusts prices for political reasons, supplies some with free power, and does little to stop the theft of power in urban settings. (Victor, 2008)

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The intense growth in China, India, and other Asian producers also remains grossly inefficient in its rising demands on scarce oil, driving global oil prices higher, and intensifying global warming with higher CO2 emissions.
Whereas the mature, energy efficient economy of Japan consumes .8 bbl of oil for every $1000 of GDP, and the U.S. economy reached that same level of oil efficiency in 2000 and is now surpassing it, Australia and New Zealand use 2.1 bbl per $1000. The rest of Asia is extravagant in its demands on oil resources. India uses 3.7 bbl and China uses 5.1 bbl of oil for every $1000 worth of GDP. In their commerce, Malaysia, Thailand, Vietnam, and Indonesia consume oil at rates close to that of India. (Wu, 2007) With global warming now a dominating issue, clearly energy efficiency technologies and expertise must become a significant export that western industrial countries supply Asia’s producers as the competition continues for diminishing oil resources.

As a subset of this problem, it warrants noting that the massive global commerce in freight and food is responsible for an estimated 3% or more of all CO2 emissions. Under “the Convention on International Civil Aviation, signed in Chicago in 1944 to help the fledgling airline industry, fuel for international travel and transport of goods, including food, is exempt from taxes . . . There is also no tax on fuel used by ocean freighters.” (Rosenthal, 2008) Because massive trade reliant on fossil fuels contributes significantly to global warming, the EU is presently moving to include fuel taxes on such shipments into and out of the EU, the world’s biggest customer. (Rosenthal, 2008)

With oil demand roughly static in the U.S., oil sellers cite increasing Asian demand as a principal cause of oil prices soaring as much as 20% in less than four months in 2008. The Organization of Petroleum Exporting Countries (OPEC) indicates they see no drop in oil prices, and Asian businesses have no clear plans to improve energy efficiencies.

Byproducts of Growth and Inflation

With rapidly rising U.S. federal deficits and trade deficits, the dollar continues to devalue with surprising speed on international markets. Partly because of rising oil demand and threats of shrinking oil supplies, and partly because oil is denominated in dollars, the global price of petroleum tripled in two years (April 2006-2008) to $120/bbl. As a result goods and food from China and
India exported to the U.S. and the E.U. bear significantly higher prices. By the spring of 2008 in the face of a U.S. banking crisis, with housing prices shrinking, a new recession, and slowing demand for high value items such as cars and household furniture, China and India have been forced to confront a whole new set of domestic and global economic circumstances.

As of 2008, workers in China are guaranteed pensions, collective bargaining rights, and long term hires (turnover of personnel in Guangdong factories is 70% annually), sending wages spiraling up, raising operating costs for factories by up to 40%. Add to this picture the fact that demand in the U.S. dropping in an unfolding recession, and the result is that over 10% of Guangdong Province’s 70,000 factories are closing, as are factories elsewhere in China. (Roberts, 2008) The single province of Guangdong employs some 18 million factory workers, 4 million more than the total number of U.S. factory workers, (Fallows, 2008) Many producers in China indicate that they will move the work toward lower labor and inflation rates in Vietnam, India, and elsewhere in South East Asia. (Roberts, 2008).

Simultaneously unrest in China is intensifying amid its growth. “On March 30, Singtaonet.com reported on a rare breakdown of government statistics on “mass incidents” — a euphemism for public protests — for the first eight months of 2006. It revealed that around 19% of them were triggered by wages, welfare conditions and other basic survival issues; 15% by land acquisitions and forced evictions; 8% by corporate restructuring and corporate bankruptcy; 6% by civil disputes; 5% in relation to other disputes involving land, mines, forests and water; and 2% by shares and stock market capitalization issues. Beijing has revealed that there were 87,000 mass incidents in China in 2005. (Cheng,2007)

Just as China establishes a dominating global position for its industrial capacity, its own domestic demand and changes in global economics create a new set of imbalances that test its claims of leadership. Oil prices combine with China’s greater domestic demand to produce a high inflation rate of 11%, contributing as well via overseas sales to fast rising prices in both food and
global commodities. According to Le Boucher in *Le Monde*, “The "dragon" swallows half of global pork production, ditto for cement, a third of steel production. Its oil consumption will triple between now and 2030. Hence the surge in energy, metal and food prices.” China has yet to find ways to:

- limit its inflation;
- balance government owned versus private industries;
- regulate effectively in the provinces;
- deal with growing differences in wealth,
- manage the environmental consequences of its growth;
- stem the tide of civil unrest.
- Solve its long-term food security problems. (Le Boucher, 2008)

Nonetheless, as measured in ever-greater economic growth, China presently constitutes a major success in the shifting balance of globalization.

Combine those challenging circumstances with a recession engulfing its principal customer, and a global crisis in credit, and it is understandable why thousands of China’s factories are going out of business, and producers in Asia face pressure to shift production elsewhere. These recent changes in domestic and global commerce also explain some of the pressures creating the civil unrest cited earlier. India so far seems to be weathering these same global changes well except for growing food scarcities.

**Governments as Major Global Investors and Transnational Corporations**

The transnational corporations that have dominated globalization are now seeing competition from the advent of state-owned enterprises such as Gazprom and China Petrol (the latter now the world’s largest company at $1 trillion, owned by the Chinese government) that can seriously influence regional and global energy supplies. Consider the political and economic reach of these new giants:
“China’s Sinopec, for example, has established a strategic alliance with Saudi Aramco, the nationalized giant once owned by Chevron and Exxon Mobil, to explore for natural gas in Saudi Arabia and market Saudi crude oil in China. Likewise, the China National Petroleum Corporation (CNPC) will collaborate with Gazprom, the massive state-controlled Russian natural gas monopoly, to build pipelines and deliver Russian gas to China. Several of these state-owned firms, including CNPC and India’s Oil and Natural Gas Corporation, are now set to collaborate with Petróleos de Venezuela S.A. in developing the extra-heavy crude of the Orinoco belt once controlled by Chevron. In this new stage of energy competition, the advantages long enjoyed by Western energy majors has been eroded by vigorous, state-backed upstarts from the developing world. (Klare, 2008)

Wealth and political power gravitate toward those who control oil and gas resources, and have the enviable role of exporters. 82% of proven oil reserves exist in just ten countries: Saudi Arabia, Iran, Iraq, Kuwait, the United Arab Emirates, Venezuela, Russia, Libya, Kazakhstan, and Nigeria. (Klare) And with 56% of natural gas in just three nations – Iran, Russia, and Qatar – nearly a trillion dollars flowed to oil and gas producer-exporters in 2006 (Klare). With oil and gas prices substantially higher in 2008, this transfer of wealth to petrochemical producers is becoming an exaggerated centerpiece in global commerce, the oil oligopoly nations in concert transforming rapidly into a financial powers with which the U.S., the EU, China, and India must cooperate.

The huge flow of money to six Gulf states selling oil and natural gas -- over $400 billion in 2007 -- is also creating massive wealth reshaping the six nations of the Gulf Cooperation Council – United Arab Emirates, Saudi Arabia, Oman, Qatar, Bahrain, and Kuwait. With an estimated $2.4 trillion accumulated recently, these countries have set off on ambitious plans to build news cities, develop new ports, create hundreds of thousands more jobs, and invest abroad in more aggressive ways. (Economist, 2008)

Some of this oil money returns toward its sources. For example, Citigroup, the huge American bank, sold the Adu Dhabi Investment Authority $7.5 billion and Kuwait Investment Authority $12.5 billion worth of it shares (Klare, 2008), tying these overseas sovereign wealth funds to American credit markets. While the U.S. government in the 1980’s outlawed any investments that the U.S.
decided might threaten *National Security*, sovereign wealth funds continue to invest in struggling American banks and investment banks. The EU wants a set of rules for investments in it by Sovereign Wealth Funds, plus an IMF code of conduct for them. Meanwhile, the list of exporting nations whose sovereign wealth funds invest in global trade is mounting.

China presently has over $1.5 trillion in dollar reserves that are growing by $1 billion a day. It has created the China Investment Company (CIC), a sovereign wealth fund, which wants to invest in the U.S. According to economist Peter Navarro. However, the U.S. fears that as part of shift in power to Asia, China will, "strip companies of jobs, research, development, and technology... As he told a Congressional panel in February, his fears grow out of China's pattern of behavior: its unfair trade practices, currency manipulation, technology espionage, and a refusal to crack down on counterfeiting." (60 Minutes, 2008)

Naturally China protests that it has no such intentions and promises transparency in its dealings. So far the CIC has invested $5 billion in U.S. investment bank Morgan Stanley, helping it acquire a collapsing investment giant Bear Sterns, and it has $3 billion worth of investment firm Blackstone, whose stock has rapidly lost value. The question of further investments in the U.S. or the EU by China remains unresolved, but as a recession unfolds, capital to shore up sagging credit markets will be much sought after.

To keep these recent shifts in perspective, it would seem only fair to recall the long tradition over the last three hundred years of early globalization in the forms of colonialism, imposed regimes, and absentee-owner foreign policies by western imperialist nations such as Portugal in the 15th and 16th centuries. European nations and the U.S. later pursued the exploitation of natural resources and cheap labor in nations around the world, including China—witness in the history of China the Opium Wars of the 19th century and the Boxer Rebellion at the turn of the 19th Century, reactions against foreign domination. An implicit threat now appears when newly rich governments, in the form of sovereign wealth funds such as those of Dubai or Kuwait, or via major enterprises such as
Petro China or Gazprom, take control of firms or whole industries that then – through losses, poor management, or political intent -- impair the economic balance or strength of the countries where they purchase or sell. Gazprom’s recent threats to limit natural gas supplies to parts of Europe have pushed the EU toward rapid installation of renewable energy. China, in turn, has become such a major buyer of soybeans from Brazil that it has influenced farmers to deforest extensive parts of the Amazon jungle, and moved the Brazilian government to improve roads and harbors to aid the flow of soybeans to its exporting harbors.

Global economics and politics already intermingle visibly in such seriously troubling issues as the U.S.-led war in Iraq, where the unannounced intent of the invasion lay in control of major oil resources, the resolution to which remains an open-ended question. And as we will see further on in this chapter, rising global free trade, growth, and improvements in living conditions are now threatened not just by a serious worldwide economic downturn, but also by the environmental and social consequences of industrial civilization pursuing growth at any cost.

The Global Credit Crisis

In mid-April of 2008 the New York Times reported that, “The collapsing of the housing bubble in the United States is mutating into a global phenomenon,” citing real estate prices collapsing across parts of Europe – Britain, Ireland, Spain, Poland -- and as far as northern India, where prices have fallen 20%. (Landler, 2008) Flawed sub-prime mortgages sold in investment packages called Collateralized Debt Obligations (CDOs) have turned up on the books of U.S. investment banks, hedge funds, pension funds, and European and Asian banks, leaving these firms and funds with bad loans, shrinking assets, and the housing on which they hold mortgages losing value.

The crisis has taken the form of a sinkhole, enlarging almost weekly with new revelations of still more bad mortgages and over-leveraged investment firms caught with massive losses. For example, having already posted some $22 billion in losses, Citigroup announced another $5 billion bad debt write-off, then
laid of 700 employees. (New York Times, 2008) Wachovia and other smaller banks are also expected to announce major write-offs of bad loans. And in a companion piece of news, retailers large and medium sized around the U.S. have begun closing down tens or hundreds of stores, or declaring bankruptcy. The cause: sinking demand and loans no longer available from newly cautious banks. (Martin, 2008)

The Federal Reserve bailed out investment bank Bear Sterns by underwriting, as collateral, the loans of its investment bank buyer, Morgan Stanley, a move which constituted a policy shift within the United States – the government seeing a private investment firm as too big and influential to allow to fail for fear of the entire financial system collapsing. (Landler, 2008).

Inflation, A Food Crisis, and Civil Unrest

A combination of causes, then, have set off inflation on global scale: a population increasing by 70 million or more a year; the relentless rise in demand for everything from metal ores and cement, to water, natural gas and oil, to food. With new wealth creating a much bigger middle class in China, India, and elsewhere, and increasing discretionary income, we see added demand for key commodities such as oil, natural gas, and water (which is growing more scarce or difficult to acquire), driving up their prices and the price of any commerce reliant on them. For example, “According to the World Bank, global food prices have increased by 83 percent in the last three years.” (Martin, 2008)

Moreover, as Keith Bradsher writing in the New York Times in mid-April, 2008 observed,

“the food price index of the Food and Agriculture Organization of the United Nations, based on export prices for 60 internationally traded foodstuffs, climbed 37 percent last year. That was on top of a 14 percent increase in 2006, and the trend has accelerated. In some poor countries, desperation is taking hold. Just in the last week, protests have erupted in Pakistan over wheat shortages, and in Indonesia over soybean shortages. Egypt has banned rice exports to keep food at home, and China has put price controls on cooking oil, grain, meat, milk and eggs.
According to the F.A.O., food riots have erupted in recent months in Guinea, Mauritania, Mexico, Morocco, Senegal, Uzbekistan and Yemen.” (Bradsher, 2008)

The market for food is now relentlessly global, with the highest bidder receiving the products from however distant a source, and the poor left outside of what economists label as effective demand, unable to buy because of poverty. Upwards of 3 billion people live in threat of having too little or no food. Regional resource shortages such as droughts in northern China’s grain-growing areas, and in Australia’s wheat farming regions, plus overtaxed aquifers have reduced grain available in the face of rising demand. For seven of the last eight years, the world has now consumed more grain than it has grown, drawing down reserve stores to a record low of 55 days worth of supply. (Brown, 2008) Grain shipments in effect are also water shipments, as it takes 1000 tons of water to grow one ton of grain, and 1500 to 2000 pounds of water to grow one pound of beef. (Worldometer, 2008) Consequently the World Food Program urgently sought an additional $500 million atop the $3 billion it has been promised because prices have been moving food out of its reach on behalf of the poor. (Weisman, 2008) Diminishing economic stability obviously threatens social and political stability. In 2008 thirty-three countries faced civil disturbances over scarce food. (Bradsher, 2008)

“‘Robert B. Zoellick, president of the World Bank. “We have to put our money where our mouth is now, so that we can put food into hungry mouths. It is as stark as that.’ . . . Dominique Strauss-Kahn, the managing director of the International Monetary Fund, said the food crisis posed questions about the survivability of democracy and political regimes . . . World Bank and I.M.F. officials noted that political instability had already hit countries as disparate as Haiti, Egypt, the Philippines and Indonesia because of food shortages, forcing some countries to limit food exports.” (Weisman, 2008)
As you can see in the preceding United Nations Food and Agriculture Hunger Map, the darker the color, the higher the percentage of the population that is hungry. As the world presently produces enough food to feed its 6.7 billion people, this huge imbalance in food distribution represents a massive failure of global markets to distribute to those most in need. As we further detail in Chapter 10 on Food security, the data represented here bring our attention to other
related food economic and security issues, including: subsidies being offered by
government for grain to be turned into fuels such as ethanol and biodiesel which
have exacerbated food inflation by an estimated 25%; and with oil involved at
every stage of food production from planting and fertilizer to harvesting,
processing, and distributing, the dynamics of oil production and distribution are
contributing to global starvation.

Three Views of Globalization

Amid these dramatic economic changes we offer two distinctly different
stories of global economics, the same phenomenon seen from different
perspectives, each of which makes claims about the next uncertain steps we
may expect from globalization.

Proponents of globalization describe global economics as a system of
maturing free trade in an evolving, cohesive global market – the first time
producers and consumers around the world have had global markets for nearly
everything. Opponents describe the same economic phenomena as a market
failure on a scale more massive than any the world has ever seen. In this
negative narrative, market-based global problems now threaten not just a serious
worldwide economic downturn, but through advancing global warming, also
threaten the entire system of civilization as we know it. The sheer scale of the
threats posed in the negative narrative and the urgency to act that it demands
make it difficult for many to grasp what it presents. The problems threatening
current global economic systems and nature worldwide act as the catalyst for
developing an entire new global economic system, one that readjusts production
and consumption to operate within the limits of nature.

The Pro-Globalization Economic Scenario

Globalization relies on a widespread belief in markets, which the pro-
globalization narrative describes as flexible, self-adjusting, and highly effective,
operating better with ever more information among buyers and sellers, and few
or no regulations. Modern industrial economies can look back on roughly two
hundred an fifty years of experience in refining how markets work. Through history markets have experienced long term periods of strong growth, followed by cycles of serious economic decline. While there is no mechanism to deal with these market surges and declines on a global basis, nations have moved to avert the downturns with fiscal and monetary policies – tax cuts or raises, and changes in interest rates – both affecting demand. The pro-globalization viewpoint relates how markets--in everything from autos and energy, to food and information services--balance changes in supply and demand to serve producers and consumers.

In this story, both sellers and consumers have and use the critical ingredient in all markets -- abundant information about products, services, quantities, quality, and prices to make well informed choices possible. Behind these individual choices by sellers and buyers sits the invisible hand, the ebbing and flowing aggregate of all of the choices being made, a process that is overtime meant to achieve an equilibrium. It was this critical attribute, cited by Adam Smith, the original free market proponent, as the power that makes markets self-adjusting systems. This pro-free trade, market-based story, then, suggests that in one form or another, markets can always adjust to the changes they create.

Unfortunately, this positive version of global markets tends to accept but ignore a range of factors including: normal losses of enterprises going out of business; inequalities of wages, which result in large segments in poverty in some countries; whole industries collapsing in the face of innovation or resource depletion; sizable investments and savings being lost when markets suddenly shift; labor being exploited, thus continuing widespread poverty; stock markets suddenly plummeting; and inflation destroying the livelihoods of vast numbers of citizens – all of these and more being some of the normal, yet critically important risks that markets entail.

The neo-liberal, pro-globalization narrative that we have explored through much of the book tells us that the World Trade Organization(WTO), the Organization for Economic Cooperation and Development (OECD), plus regional
agreements such as the North American Free Trade Association (NAFTA) all ostensibly work toward free trade – promoting countries to remove barriers to trade such as tariffs, quotas, and informal arrangements that exclude or limit foreign trade. These international organizations represent the willingness of competing nations to pursue the benefits of comparative advantage, each nation deciding what forms of production serve it to best advantage amid robust competitive global trade.

This market-based narrative of global trade also has underlying assumptions about what should be measured to judge success or failure, and it is these gross measurements that commonly appear as business news -- Gross Domestic Product (GDP) – the total dollar value of goods and services produced by a country – plus figures for unemployment, export versus import trade balances, stock market index values, currency values, changes in consumer prices, and yardsticks for industrial production. For example, in 2006 the world total GDP, a measure of total worldwide market production, amounted to $48.5 trillion, with $13.4 trillion of that produced by the United States, and $2.6 trillion produced by China. (World Bank, 2008) Notably, the U.S. presently has a huge and growing trade imbalance, spending nearly $827 billion more on consumer goods and services than it produces, much of that outflow going for overseas oil, and for goods and services purchased from China and India.

The Anti-Globalization Economic Narrative.

In contrast, the contrary view of markets and their standard measurements tells us a dramatically different story of global economics. Critics of globalization tell us that these standard measurements fail utterly to tell us all of the frightening costs of growth. Of this global economy that has grown so heavily dependent on U.S. deficit spending around the world, former Chairman of the U.S. Federal Reserve Board Paul Volcker says, using the past tense, “It was not sustainable,” that is, the global market could not continue sustained growth based on deficit spending by the U.S. The level of spending developed in the United States was created through massive borrowing to live beyond its means. (Volcker, 2008)
measure of this is the fact that U.S. household debt presently sits at 139% of discretionary income. Another observer, Lester Brown, presents a breathtaking, yet still darker view:

“Our early twenty-first century civilization is on a path that is destroying and disrupting the natural systems on which it depends. We are consuming renewable resources faster than they can regenerate. Forests are shrinking, grasslands are deteriorating, soils are eroding, water tables are falling, and fisheries are collapsing. . . We are discharging greenhouse gases into the atmosphere faster than nature can absorb them. As a result earth’s temperature is rising, ice sheets are melting, and the sea is rising. (Brown, 2008)

The negative narrative of globalization emphasizes that human economics relies on natural resources – oceans, rivers, air, soil, forests, and weather – to make commerce and growth possible. Economics and markets on any scale are actually extensions of the larger natural systems that make them possible. Ironically, the traditional measurements of growth have excluded the calculation and inclusion of external costs. For example, if all of the U.S. military and government expenditures to secure oil globally for the U.S. were counted, as well as all of the devastation to the environment and the health problems oil entails, the cost of gasoline presently would have to add in $12 per gallon more worth of externality costs to its current price. (Brown, 2008). Sometimes this is referred to as the “real cost” of gasoline.

Ironically market measurements of growth also omit other hard realities -- the death and destruction caused by wars, losses of human life in epidemics, deaths caused by industrial pollution, and losses via crime – all of these involving costly damage to human life, health, productive capacity, and nature. Some of these very real massive losses appear instead as elements to be counted as contributing to growth. For example, war gives employment to soldiers who train, kill, and destroy, but we count only their wages as part of GDP. We also count as growth the profits to arms manufacturers, ignoring the damage and vastly costs in human lives and property that these arms create. Income to health care providers and pharmaceutical companies helping the sick and injured also counts as growth, but in the Union Carbide disaster at Bhopal, India, where thousands died from the accidental release of an industrial toxin, we have a classic example
of the real costs in lives and money that growth statistics ignore. The fines subtracted from the Union Carbide accounting for this disaster measured as a loss in production, but the health care and associated legal costs caused by the disaster were included as growth in GDP. And so it goes with misleading measurements. So these calculations mean that standard measures of growth keep those who read these measurements from seeing the much larger and very real total costs that economic behaviors actually include.

According to the negative narrative of global economics, the $300 billion dollars or more of annual income to international crime also go largely unmeasured and unreported, and ironically the cost of police worldwide to pursue and suppress crime is measured as growth, not as a loss caused by people breaking the law.

From one viewpoint these one-sided measures supply businesses, investors, and consumers the information that makes markets possible. From the point of view of critics of globalization, however, because these measures omit the alarming burdens of industrial life on humanity and on nature, they lead consumers, producers, and policymakers to believe that these damages have no significant bearing on economies and life. In this view, what isn’t in the measurement does not truly matter. Widespread human poverty, however, and disastrous declines in nature have followed the rise of globalization, showing us that the opposite is the case.

Standard market measurements such as GDP lead those reading them to ignore such serious phenomena as:

- Intergovernmental Panel on Climate Change data showing a speed up in global warming, polar ice melting, and sea level rise that threatens hundreds of millions of residents in shoreline areas with disruption and displacement.

- The cause, emissions of greenhouse gases from industrial-based societies;
• The growing number of failed states propelled by population growth, crime, the maldistribution of goods, collapsing environments, failures by governments, and globalization itself;
• Defense industry oligopolies profiting heavily from wars, with a handful of transnational corporations controlling the global production and prices of weapons systems;
• The massive number of annual deaths and illnesses caused by industrial pollutants, raising health care costs;
• The abject poverty of some two billion humans, too poor to participate in most markets, their natural resources depleted, their labor often exploited, their misery ignored;
• Massive pollution of seas, shoreline waters, urban air, rivers and other fresh water sources, and waste disposal sites; (oceans globally now have 300 identified dead zones).
• Vast areas of deforestation and desertification caused by market-based abuses of vital natural resources;
• Species extinctions, and fisheries depleted to the point where they cannot repopulate.

In short, each of these disasters represents a failure of markets to consider the full costs of their operations, and to introduce these costs into pricing and resource conservation. As indicated above, one needs to add to the list a 2008 global banking crisis, an impending collapse of the dollar, rising inflation, food shortages, and a recession spreading from the United States through global markets. These market failures will actually appear as diminishing some measurements of growth, but not for what they are which is parts of a complex puzzle that carries threats not just to globalization, but to civilization itself.

Only in the last several years have observers begun to juxtapose the growing number of alarming negative phenomena against the standard
measurements of how economies serve world populations. We now face Hardin’s Tragedy of the Commons,

In what follows directly, imagine the world, its resources, its atmosphere, and its oceans as the *commons*. Imagine each business – small or large – seeking gain in the commons as a *herdsman*, bringing a flock of animals to graze. Here is how Garrett Hardin described what he called The Tragedy we face.

“If a pasture is run as a commons open to all, the right of each to use it is not matched by an operational responsibility to take care of it. It is no use asking independent herdsman in a commons to act responsibly, for they dare not. The considerate herdsman who refrains from overloading the commons suffers more than a selfish one who says his needs are greater. Christian-Marxian idealism is counterproductive. That it sounds nice is no excuse. With distribution systems, as with individual morality, good intentions are no substitute for good performance…If everyone would only restrain himself, all would be well; but it takes only one...to ruin a system of voluntary restraint…Further growth of population and growth in the per capita conversion of natural resources into pollutants require that the system of the commons be modified or abandoned in the disposal of ‘externalities,’…drifting toward ultimate ruin.” (Hardin,1974)

Consequently, a frightening larger picture of global economics emerges. In it civilization itself is now imperiled by the results of global markets ignoring their huge and very real external costs – global warming, sea level rise, and the *feminization of nature* through chlorinated hydrocarbons and pharmaceutical residues. Add to this list the burden of massive dislocations of people and commerce just in its initial stages of creating new burdens for the environment. As author Lester Brown puts it, “One thing we do know is that business as usual will not continue for much longer. Massive change is inevitable. Will the change come because we move quickly to restructure the economy or because we fail to act and civilization begins to unravel?” (Brown, 2008)

Brown captures the essential dilemma facing globalization, reinforcing the anti-globalization narrative, yet positing the beginnings of the third narrative of global economics -- *how innovation and effective changes can resurrect a new form of growth that encompasses all of its costs and supports the nature on which it relies*. For a review of how such a transformed global economy might
address its current problems effectively and create a new sustainable
globalization, see our next Chapter on *The Revolution: Toward A Sustainable
Environment and Global Economy*.

**For further investigation and information**


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Chapter Six: Education for a Globalized World

We have argued at several places throughout this text that one of the profound dilemmas of contemporary globalization is that the pace and unpredictability of change have resulted in a world “out of balance.” The globalized world is one of contradictions in which sometimes within the same countries-- China, India and Indonesia could be examples--we find many of the same social, cultural and economic practices that have existed for centuries, while other parts of the society are rushing headlong into the 21st century, propelled by the science and technology that are engines of constant change.

Nowhere are these contradictions more evident than in education. In the rural areas of many countries, there simply are no schools and children go entirely without organized schooling. In yet other places, schools are rudimentary at best. Elsewhere, and sometimes in the urban centers of these same countries, schools and tertiary education link students to a rapidly emerging linked knowledge community of scholars, researchers and students. It is the unevenness of it all that renders the issue so daunting and complex for educators and policy makers seeking to address education issues.

This chapter is organized into four parts.

1. Changing paradigms. We examine the idea of paradigms and trace them back to their political-economic underpinnings. We associate schooling as understood within the industrial paradigm and outline elements of emergent paradigms in the growing knowledge economy.

2. The call for reform throughout education. We link this to the tensions between the older, dominant paradigm and emergent paradigms, noting reform elements common to many countries.

3. The issue of access. The dynamics of globalization are radically changing who lives where, and who does what in rapidly changing economies. We link these globalization changes to efforts to ensure access to education.

4. The issue of global linkage of education in the knowledge economy. One way to understand globalization is through its information and knowledge pathways. How does education function and how is it changing as a globalized knowledge pathway? These questions link to issues of learning and relevance. In a rapidly changing world of the internet and instantaneous communications is the relevance of learning as understood changing?

Part One: Education paradigms

Seeing the world in terms of paradigms allows us to examine ways in which knowledge is constructed in the broadest ways to organize our thinking. The idea
of paradigms has been most famously used to discuss the ways in which “scientific revolutions” have come to be understood. The Newtonian revolution, named after the English mathematician Sir Issac Newton (1643-1727) gave rise to the dominant western science of the 17-19th centuries, based on the laws of motion that allowed for predication and explanation of the observable world at higher levels than that of other scientific systems that preceded Newton, e.g. Chinese, Greek, Indian and Arabic. Viewing the world in this way gave rise to a whole range of scientific disciplines including physics, chemistry, and astronomy and to a lesser extent biology. By the end of the 19th century, however, the limitations to the Newtonian paradigm became obvious to thinkers examining both extremes of the “natural” world, the very small and the very large. Max Plank (1858-1947) and Niels Bohr (1865-1962) working independently developed insights into the nature of matter that led to what is now known as quantum physics, a view that challenges many of the assumptions of the Newtonian paradigm, especially at the sub-atomic level. At the other end of the physics scale, Albert Einstein (1879-1955) developed a set of understandings concerning time, space and matter that led to what is commonly known as the theory of relativity, a view of the world that suggests that reality is knowable only relationally by taking account of the perspective of particular observers. These later views have been responsible for whole new branches of science including modern biology, communications sciences, nano-science, sub-particle physics, and modern astronomy. Together, it is argued they constitute a new paradigm of science. Similarly, it can be argued that ideas of science developed out of Chinese or Indian cosmologies constitute different paradigms of science from either those of Newton or Einstein. (Green, 1999)

The French thinker Edgar Morin suggests that in general paradigmatic thinking involves the following:

All knowledge operates through the selection of meaningful data and the rejection of data that are not meaningful. It does so by separating (distinguishing or disjointing) and unifying (associating, identifying), and by organizing into hierarchies (the primary, the secondary) and centralizing (around a core of master notions). These operations, which use logic, are in reality driven by “supra-logical” principles of organization of thought, or paradigms: the hidden principles that govern our perception of things and of the world, without our being conscious of them. (Morin, 2006)

Paradigms exist for science and other constructions of knowledge, one of which is education itself. In seeking to understand how paradigms both guide and constrain us, it may be useful to think of paradigms as principles of thought and practice often hidden or unconscious that govern our perceptions and actions in the world, and that involve us at all times in the process of selecting meaningful data and rejecting others that we hold not to be so meaningful.
The argument in this text is that within education the dominant paradigm is beginning to weaken. The ability to conduct society’s business, to develop and provide education relevant to the world that is being produced by contemporary globalization, is increasingly limited by the conventional and accepted ways of conducting education.

Before proceeding, we wish to examine this way of looking at the world, which is in part hidden and unconscious, and yet in other ways glimpsed, yet fully institutionalized in the ways that we think, speak and act out our educational thoughts, plans and actions. The major argument of the chapter is that education as currently constructed does not work very well to prepare people for the contemporary world. In countries throughout the world, developed and developing included, calls are raised to “reform” education. These calls arise from the shared perception that education as “done” is falling short of what are held to be its purposes and tasks. The dominant educational paradigm no longer meets major social needs, much in the ways that the Newtonian paradigm failed to explain important parts of the natural world that increasingly became available to inquiry during the 19th century.

Educational paradigms arise out of what have come to be the dominant ways of thinking about politics and economics in societies. Our argument here is that one can point to three basic paradigms: the classical paradigm, the industrial paradigm (currently the dominant –although weakening–paradigm) and the emergent post-industrial or knowledge society paradigm. It is this emergent way of thinking and organizing the world toward which we are moving, and it this paradigm that is beginning to shape a world to which we are just beginning to make accommodation.

Both the classical and industrial paradigms have many variations, articulated through different cultural structures and arrangements. What we are terming the classical paradigm emerged out of societies that were hierarchical and dominated by elites that produced cultural knowledge that was conserved and transmitted through some set of social structures. (The dominant knowledge group was often a form of priesthood or sacred class, since much classical knowledge has a religious basis.) We use the term classical to note that all dominant cultures over periods of time cull and refine a set of knowledge elements based on discovery, cogitation, disciplined inquiry, revelation etc. and seek to maintain this body of knowledge over time. There are no doubt better terms for this, but the notion suffices to cover such diverse historical experiences as the Greek classical tradition, the Roman, the consolidation and preservation of knowledge by the Church of Rome and its Orthodox equivalents, the Arabic Enlightenment, the Chinese and Japanese classical traditions, etc. The point to be made is that overwhelmingly they were agriculturally based social hierarchies and the primary function of education was to ensure cultural knowledge within the socialization of ruling elites and their closely held subordinate classes, which in specialized ways included the military.
Industrialism changed this structure significantly, acknowledging that the transitional period lasted almost 250 years, from the stirrings of organized science in the early 17th century to the explosive growth of industrialization in the 19th century. Across a wide range of countries, agriculturally based wealth hierarchies in time became subordinated to those based on commerce and industrial production. A commercial wealth class, often reflecting capitalist modes of acquisition and accumulation, arose supplanting that based on land wealth. The right to exercise social and economic power based on social status was gradually replaced by that based on achievement and wealth acquisition. Middle classes, including professional middle classes emerged, as did industrial working classes. From the 18th century on, in part because of these macro shifts in the political economy, political democracy (liberal democracy) entered the stage to meet the demand for more broadly representing social groups other than the landed class in social power structures.

Education changed in concert with these transformations in the political economy. In the west scientific inquiry arose out of an extended contest with the church and its presumptive monopoly over education and “correct knowledge’. Paradigmatically, inquiry based on empirical investigation and the application of reason replaced revelation and doctrine as the primary knowledge tools. The Renaissance and the Enlightenment recovered and reinterpreted elements of other classical traditions, primarily the Greek and Arabic, and integrated them into the new framework of inquiry. During the transitional 17th and 18th centuries, education was still experienced by only a small part of the population, and continued to serve its class reproduction functions, altered as we have indicated, by openings to the new scientific and philosophic intelligencia arising out of the turmoil of changed class relationships.

Mass democratic education made its appearance in the 19th century, leading in some countries to mass compulsory education intended to create educated work forces, including most importantly, the professional classes—scientists and engineers—required to build the factories and organizations of the emergent industrial society and its all important cities. It was not until the last quarter of the 19th century that the education process began to “take off” and develop the characteristics that now extend in numerous ways throughout the world, diffused in part by the mechanisms of European colonialism. Extension of educational needs into the working class, an explosion of urbanization, and the infusion of society with technology changed the way people lived, worked, recreated, earned money, spent money, sought shelter and food etc. The invention of urban lighting and the building of electrical utility networks changed the way people occupied the day and night. The internal combustion engine and the creation of roads, along with railroads, shrank time and space, making the transportation of goods and people, in relative terms, cheap and easy. (Morris, Birth of the Modern—finish)
Education was fashioned to meet the needs of this changing society. In the United States, for example, it was not until the creation of The Johns Hopkins University and the University of Chicago during this critical period—the latter 19th century—that the modern university made its American appearance. Up to that time the most famous American universities—Harvard, Yale, Columbia, Princeton, the University of Pennsylvania—were still operating in the classical “reproduction of elites” model. The full embrace of creating science and technology based education for the middle classes and the rapidly emergent professional classes was accomplished to a significant extent by the “new” state universities, themselves a creation of the federal government legislation of the Civil War period.

One can enumerate the characteristics of the education paradigm that emerged from this industrial political economy and its projected needs. In doing so, it is important to acknowledge the tensions placed on the paradigm by inventions and discoveries that in reality span the 20th century, such as relativity and quantum theory. While these notions have radically affected knowledge, as have the more recent revolutions in computing, mathematics and biological science, these novel ways of seeing the world have not much affected the institutions of education themselves, which continue to be organized in terms of the earlier industrial paradigm.

The reference point for the comparison between social organization for the industrial and post-industrial paradigms should be the core institutions of the production and consumption and political processes themselves, inasmuch as it is these that are meant to be served by education.

On the production side, as noted in previous chapters, the locus of manufacturing production has moved from the older industrial countries with their relatively high wage labor forces to the newer industrial, developing countries with their less expensive labor forces. Capital has driven this shift and followed it, developing entirely new mechanisms of production and its control in the process. The most significant of these is the shift from the older industrial modes of assembly line mass production (which resulted in huge amounts of capital being tied up in plant, equipment, production materials and inventories)—what is often called the Fordist mode of production after Henry Ford whose company did so much to

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1 To a large extent it has been the little noticed field of “production engineering” that made possible the massive shift in manufacturing from the older industrial nations to developing ones, especially in the decades of the 1960s-1980s. The engineering task was to relocate complex and sophisticated manufacturing tasks from the high labor costs countries to the lower labor costs countries. The latter often lacked well educated working class populations, so engineers had to re-imagine and design equipment that could be run by workers with few educational skills, but possessed of “quick minds and nimble fingers” as one industrial executive remarked at the time. This, for example, describes the migration of the computer chip industry to Asia during these decades. The revolutionary awareness for business elites during this period is that this process could be accomplished by by-passing the need to sink vast amounts of social capital into the education system in order to produce an appropriately educated workforce. (Neubauer, 2000.)
perfect the techniques of mass production—to *flexible or just in time* production. (Grieder, 1997)

The goal in flexible production is to use as efficiently as possible the combinations of capital and production by tailoring production to consumption tastes, and limiting inventories as much as possible by producing to meet only predictable demand in available markets. In this process, outsourcing is a major element as producing firms of end products seek to invest as little of their own capital as they can in the actual ownership and operation of manufacture.

Modern computer and communication systems tie production closely to demand on the one side, and on the other allow modern advertising to invent consumer demand that can then be satisfied by the creation of the desired product. The consumption side of the equation is thus brought into line with the production side. We have become so accustomed to this model of production and consumption in the past twenty years that it is difficult to appreciate how radical the difference is with earlier models. Classical micro economics, for example, for the whole of the 20th century assumed demand to be largely “given”, a result of the vast complexity of preferences that a society produces and that producers of goods seek to satisfy. The American economist John Kenneth Galbraith was one of the first to recognize that one of the primary features of modern capitalism is its ability to create the very demands that its firms then seek to satisfy. (Galbraith, 1973) Globalization’s contribution to this process is to extend it throughout the globe, in large part through the activities and reach of the modern media and advertising firms that were among the earliest transnational corporations.

Table 6-1 Elements of the Industrial and Post-Industrial Paradigms

<table>
<thead>
<tr>
<th>Elements of the Industrial Paradigm-Fordism</th>
<th>Elements of the Post-Industrial Paradigm-Flexible Production</th>
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</thead>
<tbody>
<tr>
<td>Standardization and universalization—one size fits all, and a “unit” for every person</td>
<td>“Boutique adaptation”—design products for those who need and want them—tailor to individual needs</td>
</tr>
<tr>
<td>Linear, predictive models of cause and effect</td>
<td>Non-linear, probabilistic models of association and consequence</td>
</tr>
<tr>
<td>Education based on the acquisition of relatively constant elements of agreed-upon “knowledge”</td>
<td>Education addressed to rapidly increasing knowledge quotients (knowledge explosion) and</td>
</tr>
<tr>
<td>Relatively rigid professional hierarchies</td>
<td>Flexible associations of capabilities brought together in networks</td>
</tr>
<tr>
<td>Ideology of formal education=progress</td>
<td>World viewed as more complex—</td>
</tr>
</tbody>
</table>

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2 This is how housing is now built in American markets. The contractor designs housing, advertises it to potential buyers, takes deposits for desired units and then commits to the actual construction. Many automobile companies custom build autos the same way for consumers, seeking to keep inventories of their many models to a minimum, sufficient to satisfy only those buyers who seek immediate gratification of on-site purchase.
and development formal education one element among many; world a more contingent place

Concentrate productive capacity in vertically integrated hierarchies Production distributed throughout world to maximize economies in factors of production

Primacy of manufacturing capital Primacy of finance capital

While the world moves rapidly toward one organized around a political economy of flexible production exhibiting many of the characteristics detailed in Table 6-1, educational systems on the whole are still organized around the values and routines of an industrial political economy. This is the major source of the “disconnect” between contemporary education and the economies that educational system exist ostensibly in large part to serve. It is also the source of the clamor for reform in education heard in countries throughout the world.

Part Two: Contemporary schooling derived from the dominant paradigm is, as John Hawkins argues, recognizable everywhere...we all know what schooling is and is about. Tyack and Cuban have termed this the grammar of schooling. (Tyack and Cuban, 1995). In western developed nations, particularly in the United States where public education (schooling) has been under pressure to reform for many years, the complaints have a commonality among them. One list compiled from the literature by Hawkins identifies these problematic features of schooling:

• An authoritarian relationship as the core of the teacher-learner interaction;
• Teachers are insecure due to poor pay and lack of training;
• Teaching method benefit little from knowledge about cognitive psychology and child development;
• Teachers discourage discussion and questioning and adhere to textbooks;
• The main function of schooling is to select entrants to the next educational level;
• The selection is through a highly competitive examination system that requires the reproduction of rote learning rather than critical thought; tracking becomes a permanent feature;
• The main activities of the formal school system are directed toward preparing pupils for these examinations;
• The student and parents are preoccupied with certificate-status rather than with the essence of what is taught. (Hawkins, 2007; Tuqan 1983; Oakes 1985)

This list could easily be expanded and we encourage the reader to do so from his/her own country experiences. Globalization, as we will explore further in the next two sections, has a complex relationship to both the spread of the common schooling grammar and to reform efforts. As Carnoy writes:

“It is true that education appears to have changed little at the classroom level in most countries...teaching methods and national curricula remain
largely intact. Even one of the most important educational reforms associated with globalization, the decentralization of educational administration and finance, seems to have little or no effect on educational delivery in classrooms, despite its implementation.” (Carnoy, 2002)

Hawkins adds: “Globalization assures the spread of the dominant paradigm while at the same time altering it to suit the needs of the globalized economy.” (Hawkins, 2007)

That this is so results in large part from the great inequalities present in the global system. As the current global system developed in the years following World War II and as colonialism gave way to the establishment of new independent nations, the imperial/colonial international economy progressively broke apart. Taking its place was a complex of different economic trajectories that were conveniently summed up as “First World, Second World, and Third World” economies. The first world, or developed economies, were in reality very different, ranging from those rebuilding from the devastation of war (e.g. Germany, Japan, Great Britain, France) to those whose relationship to economic “mother countries” was being restructured, e.g. Canada, Australia, New Zealand.

The so-called Second World made up largely of socialist economies and dominated by the Soviet Union also comprised great differences in economic capacity and development, with Russia among the most developed and countries such as Albania barely beginning along the road to industrial development. What was blithely referred to as the “Third World” represented enormous differences in economic structure and capacity. Some countries, such as Argentina, were mainly agricultural and raw material producers for the manufacturing countries; others such as Brazil and India were complex mixtures of a relatively advanced industrial centers and vast and much less advanced agricultural regions. Economists in the post war decades accurately employed the term “uneven” development to characterize these vast differences. Further complicating this world in the “development decades” was the reality of revolution in countries such as China and Viet Nam as socialist regimes sought to launch their societies past the constraints of colonial or post-feudal control.

In the development decades education came to be viewed not merely as a “development tool” but as the development tool. (Hawkins, 2006) At the core of every development proposal in all three “worlds” irrespective of their empirical state of development, education lay at the core of the strategy. For developed countries, education was the capacity that would leverage societies toward the achievement of abundance, technological sophistication, and prosperity; for developing countries, education was the single most important “thing” that would make people of those countries more “like them”, meaning developed economies and societies. Given the structure of global uneven development these elements have persisted, ensuring as we note citing Hawkins and Carnoy above, both the
spread of the dominant paradigm through globalization and the tailoring of the dominant paradigm to meet the needs of an increasingly globalized world.

Reform movements within countries emerge largely out of these two basic tensions. They are either calls for schools to “modernize” more quickly and effectively to link the whole of society with its more rapidly developing cores, or such movements are—especially within developed countries—efforts to align education with the workplace needs of post-industrial societies. (Throughout education policy debates, this has come to be referred to as the “alignment” issue.) Reform efforts are expressed for basic as well as tertiary education, with calls being raised in many countries for schools and universities to align curricula to meet common societal needs.

As globalization has spread throughout the world carrying with it the common package of neoliberal elements that we have discussed in preceding chapters, these elements have entered educational reform debates as well, especially as they have focused on aspects of school administration. Schooling and higher education are expensive to support on a society-wide basis, often constituting the largest single element of national or sub-national unit budgets (e.g. states, provinces, municipalities.) Efforts to meet neoliberal political agendas by reducing national and sub-unit budgets (and thereby reducing taxes and “leaving” more capital within the private sector) have focused in equal amounts on “outcomes”—seeking to gain assurances that schools and universities meet workplace needs—and “administrative efficiency”. This latter discourse has borrowed liberally from the managerial revolution, the movement within capitalist countries, spurred by global corporations to move them from organization forms appropriate to industrial organization into those more appropriate to post-industrial/global corporate structures. (Cuban 2004) As Hawkins points out, from

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3 One of the first efforts to initiate this discourse in the United States was a publication supported by the well-known Carneige Foundation, Nation at Risk (1980) that sought to create a national debate over making schools relevant to workplace needs. This in turn sparked a good deal of complementary reform focused effort, perhaps the most significant of which was John Goodlad’s exhaustive study of US schooling in the 1980’s. The reader is referred to both of these as historically relevant texts in the global reform debate. (Goodlad, 2004)

4 Examining the school reform movement in the United States since the 1980’s Larry Cuban finds several sets of assumptions held by business leaders who have driven much of the movement for reform. Citing the business roundtable in the farm state of Iowa, Cuban notes these three assumptions: “The first is that the schools were terribly flawed. The second was that teachers, administrators, and support staff in the system were the obstacles to fixing it. The third is that if we would just run schools like businesses, they would work.” Cuban points out that other key assumptions lie behind this view of the schools including (1) the belief that strong economic growth and increased competitiveness in global markets depend on a highly skilled workforce; (2) that Public schools are largely responsible for equipping the population with the knowledge and skills required by an information based workplace; (3) that all public schools are doing a poor job preparing students for college and the workplace and among them urban schools do the worst job of all; (4) Schools are like businesses and should be run on business principles to produce better achievement on standardized tests; which (5) are the appropriate measure for success—higher test scores in school mean better performance in college and the workplace. (Cuban, 2004, pp. 26-7.)
these reform efforts globalization has imposed a new language on education policy makers, including elements such as:

- Privatization
- Marketization
- Corporatization
- Strategic planning
- Decentralization
- Branding
- Accountability
- Assessment (Hawkins, 2006)

A review of the literature on education reform suggests a weak case and a strong case explanation for why reforms have proved so difficult to accomplish. The weak case stresses issues of insufficient resources required to make essential changes; the relative political power of teachers in resisting change, especially when they are organized into unions; the historic structural conservatism of education as a social enterprise; and cultural resistances to change. The organizational/accountability elements cited immediately above are good indicators of efforts to provide reform within this weak case framework. (Goodlad, 2004)

The strong case emphasizes the extent to which the dominant paradigm is embedded in deeper social, political and economic structures such as those that constitute the political economy. This view argues that the changes that are operating to change the political economy are fundamental and have far greater implications for society than those represented by contemporary reform. Reform fails, it is argued, in part because it necessarily lags behind the rapid social changes being wrought by the complex combination of globalization/post-industrialism and the emergent knowledge/information/network society.

The weak case model of reform sees reform as a problem to be solved by marshalling appropriate resources targeted at specific elements of the educational endeavor. The strong case approach views contemporary education as in a predicament wherein the tensions of keeping up with the changes taking place in the broader society are more or less constant. There is no definitive solution to educational reform, only approaches that satisfy some goals and needs but not others. The weak case approach to reform seeks to achieve reform within the basic assumptions and practices of the dominant paradigm; the strong case recognizes that the dominant paradigm is no longer sufficient to meet social needs and seeks to identify elements of new paradigmatic approaches to educational needs. Clearly, the approach taken in this chapter seeks to illuminate aspects of the strong case.⁵

⁵ The forthcoming volume by Hershock, Hawkins and Mason (2006) delineates both sides of the paradigm debate.
Tables 6-2, 6-3 and 6-4 illustrate some of the features of schooling under the dominant paradigm, typical actions taken to reform educational practices, and some elements that may be more directly linked efforts to forge a new paradigm for education more consistent with the underlying political economic structures of flexible production. These elements have been drawn from the literature on school reform in the United States. Examples are provided for schooling, teacher education and higher education. The reader is encouraged to develop a similar exercise for his/her own country.

Table 6.2 School Paradigm Elements

<table>
<thead>
<tr>
<th>Old Paradigm—Schools</th>
<th>Reforms—Schools</th>
<th>Emergent Paradigm--Schools</th>
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<tbody>
<tr>
<td>Standardization of experiences</td>
<td>Greater parental involvement</td>
<td>Class content recognizes values of youth culture</td>
</tr>
<tr>
<td>Common curriculum</td>
<td>Charter and magnet schools with focused subject matter</td>
<td>Team learning</td>
</tr>
<tr>
<td>Compulsory state education</td>
<td>State support of private schools</td>
<td>Mixed aged instruction</td>
</tr>
<tr>
<td>Hierarchical organization</td>
<td>Closer community ties</td>
<td>Student-focused learning: guide on the side replaces sage on the stage as teacher model</td>
</tr>
<tr>
<td>Assessment through standardized testing</td>
<td>Student tracking and advanced placement</td>
<td>Shift from memorization to critical thinking</td>
</tr>
<tr>
<td>Most instruction is by talking; most talking is by teachers</td>
<td>Internet based learning</td>
<td>Recognition and acceptance of networks as both “naturally occurring” and “purposeful”</td>
</tr>
<tr>
<td>Technology is an add-on to to curricula and pedagogy</td>
<td>Focused “schools within schools”</td>
<td>Central emphasis on learning to learn model of education</td>
</tr>
<tr>
<td>Domination of linear learning models and curriculum sequences</td>
<td>Early childhood education</td>
<td>Acceptance of differential intelligence learning models</td>
</tr>
<tr>
<td>Schooling by age grades</td>
<td>Mixing age groups</td>
<td>Mixed age instruction</td>
</tr>
</tbody>
</table>

Table 6.3 Teacher Training Paradigm Elements

<table>
<thead>
<tr>
<th>Old Paradigm Teacher Training</th>
<th>Reforms-Teacher Training</th>
<th>Emergent Paradigm—Teacher Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender bias—more</td>
<td>Link teachers to mentor</td>
<td>Team teaching with</td>
</tr>
<tr>
<td>women in lower education grades</td>
<td>teachers after college training</td>
<td>common student cohorts</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-------------------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Poor salaries and poor prospects for advancement</td>
<td>Provide greater mobility and incentives</td>
<td>De-centering the teacher from authority to guide/learning coach</td>
</tr>
<tr>
<td>Gaps between school needs and education supplied by “teachers colleges”</td>
<td>More international content</td>
<td>Deep diversity as a curriculum structure including differential intelligence models</td>
</tr>
<tr>
<td>Student teacher apprentice in existing classrooms—reproducing problems</td>
<td>Expansion of internship programs to link classrooms to workplace relevance</td>
<td>Center teacher in critical thinking/problem solving classroom interactions</td>
</tr>
<tr>
<td>Model of teacher as curriculum monitor</td>
<td>Diversity training and cross cultural education</td>
<td>Mainstream technology education components</td>
</tr>
</tbody>
</table>

Table 6.4 Paradigm Elements in Higher Education

<table>
<thead>
<tr>
<th>Old Paradigm—Higher Education</th>
<th>Reform—Higher Education</th>
<th>Emergent Paradigm—Higher Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research privileged over teaching</td>
<td>New colleges and schools within universities dedicated to learning</td>
<td>Specialized start up institutions addressed to “new problems”</td>
</tr>
<tr>
<td>National hierarchy of institutions</td>
<td>Increased international education</td>
<td>Interdisciplinary teaching and research</td>
</tr>
<tr>
<td>Highly professionalized professoriate</td>
<td>Impose private sector management tools</td>
<td>Abandon the 4-year BA model in favor of targeted achievement</td>
</tr>
<tr>
<td>Organized by academic disciplines</td>
<td>Develop explicit productivity standards for faculty</td>
<td>Significant instruction and experience outside university settings</td>
</tr>
<tr>
<td>Often isolated from “society”, yet highly responsive to research agenda from political economic institutions</td>
<td>Outreach activities to surrounding communities</td>
<td>Routine curriculum shuffling to promote adaptation to social change</td>
</tr>
<tr>
<td>Competence=grades and units completed</td>
<td>Competence=meeting empirical outcome measures</td>
<td>Learning assessed through qualitative and quantitative measures</td>
</tr>
</tbody>
</table>

Another effect of globalization for education has been its inclusion into the General Agreement on Trade and Services (GATS) that treats education as another commodity in the global economy. Education services are included in the current negotiation round that began under WTO in 2000. Trade in higher education services including exchange of international students is a billion dollar
industry and growing rapidly as the demand for higher and adult education, especially in the professions and in non-traditional delivery modes increases. Jane Knight points out that as demand expands, the capacity of the public sector in many countries is insufficient to meet it. This condition supports groups seeking to expand the education marketplace through privatization. (Knight, 2002)

In countries such as India, Thailand and China private institutions are rapidly emerging to meet several aspects of market demand. In these settings private institutions often enjoy the advantages of less government regulation, the ability to select their own students and faculty, and the ability to tailor curricula to meet perceived needs, either in enhancing the student’s progress to the next education level, or by providing an education package of particular interest to business organizations. Recent studies suggest that in many countries the deep structural problems of public education result in a wholesale abandonment of it for private education. Stories abound in countries like India and Nigeria where parents pass up free public education of low quality to seek more effective private education. In India, for example, daily teacher absenteeism can average 25% across the system, a situation which when compounded with vastly overcrowded classrooms devastates education performance. In these situations, private sector solutions are eagerly sought by parents as options. (Rodriguez, 2006)

**Part Three: Access and Equity**

As discussed in the previous section, the structural inequalities of the post-war development decades have been intensified by globalization. Some countries of the world are seeking to put in place the basic elements of schooling and tertiary education common to the more developed world. Some of the largest countries of the world, most notably India, Indonesia and China, are textbook cases of within-country uneven development as the advanced cities, critical nodes in the global economy, provide examples of the most up-to-date education, while depressed rural areas often struggle to gain the most rudimentary educational capacity.

Population growth, migration and other structural factors such as civil unrest and disease impose enormous burdens on governments seeking to provide universal education. Education for All (EFA), the United Nations effort to mount a world-wide campaign to assure educational opportunity has monitored world progress in educational access since 1990 when representatives from 155 countries met in Jomtien, Thailand ‘to universalize primary education and massively reduce illiteracy before the end of the decade.” (UNESCO 2005) The meeting of the World Education Forum in Dakar in 2000 created six goals around which national and international education was to be directed.  

---

6 The six EFA goals are:
conference 104 million children were without schooling of which 57% were girls, and two-thirds of the 860 million adults without literacy were women. By 2005 EFA expected that gender disparities in primary and secondary education would be eliminated and that by 2015 overall gender disparities would be eliminated throughout education. (UNESCO 2005-1)

Of the many equity issues involved in global education that of gender constitutes the largest and most persistent instance of discrimination. EFA data indicate that whereas enrollment for girls is increasing (measured by gross intake for grade one), largely as a result of the abolition or reduction in school fees and charges, genuine declines in recent years have occurred in Algeria, the Congo, the Islamic Republic of Iran, Oman, Saudi Arabia, the Sudan, Thailand and the United Republic of Tanzania. The overall data on enrollment, however, reveal a mixed picture with enrollment of girls on the rise along with total gross enrollment, which rose from 596 million in 1990 to 648 million in 2000 (an overall increase of 8.7%). Much of this increase occurred in Sub-Saharan Africa (38% relative increase), with significant increases in South and West Asia (19%) and the Arab states (17%). On the other side of the ledger, in the latter two regions almost 20% of the age group remains out of school. (UNESCO, 2005)

Efforts to address these issues of access and equity in providing education emphasize the daunting tasks for the countries involved. Many of the factors that contribute to the pressures on education arise outside the control of the nation-state. As we have argued throughout this text, the single greatest motivator to migration is the realignment of work and employment opportunity as the global economy shapes local labor markets. Movements of population are swift and impact countries that are unprepared for the burden of accommodating new migrants and their educational needs. Local communities are often unable or unwilling to provide adequate schooling for new migrants, no matter what their value may be to the overall national economy. Further complications arise when migrations pose particular language and learning requirements based on religion and/or custom. Civil unrest throughout immigrant populations in France in the summer of 2005 revealed the toxic social combination of high unemployment

1) Expanding and improving comprehensive early childhood care and education, especially for the most vulnerable and disadvantaged children
2) Ensuring that by 2015 all children, particularly girls, children in difficult circumstances and those belonging to ethnic minorities, have access to, and complete, free and compulsory primary education of good quality.
3) Ensuring that the learning needs of all young people and adults are met through equitable access to appropriate learning and life-skills programs.
4) Achieving a 50 per cent improvement in levels of adult literacy by 2015, especially for women, and equitable access to basic and continuing education for all adults.
5) Eliminating gender disparities in primary and secondary education by 2005, and achieving gender equality in education by 2015, with a focus on ensuring girls’ full and equal access to and achievement in basic education of good quality.
6) Improving all aspects of the quality of education and ensuring excellence of all so that recognized and measurable learning outcomes are achieved by all, especially in literacy, numeracy and essential life skills. (UNESCO, 2005)
among immigrant youth and tensions within schools between national standards and customs and the needs and predispositions of immigrant communities. This scenario has repeated itself in one way or another in many other European countries as well as the United States and Latin America. Asian versions of the drama are continuing to unfold as this region experiences some of the most numerically significant levels of migration.

Other globalization dynamics enter the equation as well. Throughout much of the globalizing world child labor is a major component of the labor quotient used to produce global goods, ranging from globally-traded commodity crops such as cocoa, coffee and tea to the sex industry. In Africa efforts are underway to undermine what is termed “chocolate slavery” in which children are bound to the cocoa fields, especially in the Ivory Coast and Ghana for little or no wages. Even in the developed countries the exploitation of child labor in the fast food industry (where in Britain instances have been found of forcing children to work 16 hours a day) essentially cancels out efforts on the part of local authorities to assure that children have effective schooling available to them. Overall, however, most child labor is found in Asia where large numbers of children work long hours for pitiable wages and are denied the opportunity to attend school. (BBC, 2002)

The NGO community is currently engaged in a major effort to assist in the struggle for access to education.

Again, privatization is greatly influencing the kinds of education available throughout societies. India has witnessed a growth in the relative proportion of private school from less than a tenth since the early 1990s to over one quarter. James Tooley’s research in Indian slums indicates that under these circumstances as many as two-thirds of the children attend private schools, many of them unrecognized by government. (Cited in Mallaby, 2006) At university level India already produces three times more engineering graduates than the United States at 200,000 graduates a year. Astonishingly, the enrolling cohort for engineering in 2005 was 450,000 in four year courses, suggesting that this number could double by 2009. The demand for these education services is coming largely from fee paying students pressuring private institutions to expand capacity. Sebastian Mallaby points out that in 2003 the Vellore Institute of Technology received 7,000 applications. In 2005 it received 44,000. (Mallaby, 2006) The rapid expansion of private sector capacity raises parallel issues of the quality of such institutions and the education they are providing.

These examples clearly indicate the complex dynamics of globalization on education, especially in the larger developing countries. On the one hand, government education bureaucracies tend to be sluggish and conservative in responding to rapid social change, one aspect of which is liberalization of the education market. The time horizon to render change within government settings is long and response is slow. The private sector by contrast is both relatively underdeveloped and unregulated. Stimulated by the heightened demand that
comes from rapid urbanization and rising incomes for a significant minority of the population, and given the large population numbers involved, demand is translated to private institutions, which quickly rise to meet it. The result has been an explosion of these sectors, often led by the entrance into the market of foreign global education entities accompanied by distance education delivery systems.

This is clearly the first stage of this rapid process of seeking to provide greater access through private sector expansion. If history is a guide, this period of rapid expansion will be followed by one of consolidation in which issues of consistency of quality are raised, especially concerning the wide varieties of offerings being provided by private sector education entrepreneurs.

Part Four: Education in the Knowledge/Network Society

The movement from an industrial society based education paradigm to a knowledge society based paradigm is tied at virtually every point to the ways in which globalization creates needs for labor. Inequalities in the distribution of the skills required by a knowledge economy have been famously framed as the “digital gap”, recognition that access to the tools of the knowledge society are available to some, but not others and that the longer one remains outside the digital community, the larger that gap grows.

Additionally, although this aspect is given much less attention, increased global interdependence in a knowledge economy also creates a whole texture of novel relations and understandings about society and culture, and about key relationships such as those between citizen and state.

The digitalization of society that we refer to as the knowledge based paradigm appears to be following a hard, if not ultimately inexorable logic in which neo-liberal maximization will affect policies, public and private, millions of times over to determine the environments and opportunities facing people when they seek to work and live out these new social roles. Given that education is in large part about preparing people for work, it is the processes of globalization that will frame and condition what people should be educated for. And, to repeat a portion of the point made in the previous section, the criteria of “education for work” are increasingly being established outside the realm of the local pressing this external logic on the traditional instruments of education: local government, local school boards, and local social networks.

As globalization proceeds throughout the world and as societies succumb to becoming “competitive” within the norms of global capitalism, the act of joining the competition contains many and varied imperatives. One of these, referred to immediately above, is succumbing to the logic of profit maximization through the use of child labor. Another is submitting to the deregulatory impulses of neoliberalism which seek to strip away many of the regulatory protections of workers. Yet another is the increasing prevalence of English as the language of
global communication. Another, on the other side of the coin, is the increased pressure on many societies to adopt global norms of gender equity in education, making education available to girls at levels comparable to that for boys. Education systems that refuse to join the competitive struggle eschew essential forms of knowledge capital required to succeed in this environment. This struggle defines in key instances the tension between the cosmopolitan world of the global and the increasingly “alternative” world of the local. These alternative worlds are often themselves couched in religious or cultural codes, which become intensified as people seek a basis for resisting the blandishments of globalization and global consumption. Education is often the contested terrain for the playing out of this tension.

We have discussed in a previous chapter some of the ways in which information technology is rapidly changing the world. Many of the tensions present in contemporary education have at their root the slippage between what children learn within society at large and what they learn and are rewarded for at school. One burden of the dominant paradigm is the belief in standardized curricula and the notion that all students should be taught the same things. Despite the fact that we know this is rarely the case—children from more affluent settings are always taught different things and in different ways than those from poorer settings—as societies, we cling to the belief in a standardized curriculum as the best way to promote equality within a world of manifest differences. The dominant education paradigm derives its power in part from the promise that all children will obtain from their educational experience (public supplemented by private) at least the minimal measure of literacy and numeracy required to gain success in society. On this base are built the selection processes of secondary and tertiary education that provide more complex combinations of skills that society requires for its progress toward development. The organization of society to produce this press toward uniformity contributes both to the enormous cost of education and to its essential conservatism. Any system organized on the premise of providing each individual a significant measure of the “same thing” is bound to be conservative and slow to change—any change involves implementation throughout all the complex levels and corners of “The System.”

The knowledge/network society challenges these assumptions in any number of ways. Examination of contemporary society tells us overwhelmingly that change is the order of the day—in fashion, in what is known, in what is believed, in the “products” that we hold to be necessary for a satisfactory existence. Our information/knowledge society is based in part on a set of processes that spur innovation. To date education has been a reluctant participant in these processes, but the evidence seems to be increasingly on the side of change winning out. We see increasing evidence that educational institutions responding to these dynamics of change are—in most societies—being rewarded. It is to them that members of social, economic and political elites send their children in an effort to ensure that they will “know the world” into which they are moving and from this knowledge succeed. Increasingly we also see various kinds of flight
from education systems as constituted. Huge numbers of young people leave school because they fail to see the relevance between school and what they perceive to be skills required of the world. Significant numbers of young people leave one form of school—often the highly bureaucratized or ineffective schools of the public sector—for others that are deemed more relevant. A poignant example is that of so-called wild goose fathers in Korea, a phenomenon so widespread as to have this semi-clinical name in which in early adolescence a mother and one or more children will leave Korea for an educational environment believed to be superior for the education of the children, leaving the father alone to work and supply the income necessary to support this project. These families are making an extraordinary investment in creating the social capital they believe results from advantageous positioning of their children in the globalized knowledge world.

The increasing tensions placed on education to respond to the challenges of the knowledge society will be one of the dominant social dramas over at least the next two decades and larger groups in society will become organized around changes believed to result in greater alignment between education and the emergent knowledge society.
References:

BBC, 2002 “Child Labor ‘fuels commodity trade’”, May 6. Available at: news.bbc.co.uk/…/newsid 1970000/1970563.stm


Hawkins, John N. 2007 “The Intractable Dominant Educational Paradigm” in Changing Education: Leadership, Innovation and Development in a Globalizing Asia Pacific, edited by Peter D. Hershock, Mark Mason & John N. Hawkins, Hong Kong: Springer and Comparative Education Research Centre


Chapter Seven
Globalization and Health

Introduction:
Contemporary globalization affects human health in multiple ways, from how food and other basic resources such as water, sanitation, and shelter sustain health, to how the globalization of pharmaceuticals and other modern medical interventions extend life in threatening circumstances. In this chapter we will examine five elements of globalization and health:

- The unequal creation and distribution of wealth have significant impacts on health and life expectancy. How do poverty or abundance shape health?
- Globalization and emerging infectious diseases. How do the global linkages among distant places and ways of life create rapidly transmitted epidemics and an increase in infectious disease?
- The impact of globalization on public health. How does the increase in global trade and investment affect how societies protect their health?
- Globalization and healthcare. How does globalization affect the ways that health care systems and finance are developed? How are global labor circuits used to distribute healthcare workers throughout the world?
- The transnationalization of health interventions. How does the global economy influence the forms that medicine and healthcare take in various national settings?

Inequality and Health: Health research demonstrates a strong relationship between poverty and health. This relationship holds across time and across space. Find any society and look at the poor, especially the very poor, then observe those who are well off. The former have higher infant mortality rates, higher rates of death in the first five years of life, and significantly lower life expectancies. Tables 7-1, 7-2 and 7-3 indicate this relationship at a national level. Gross national income per capita (GNIP) provides an adequate measure of national income status and is widely used for international health comparisons. The World Health Organization (WHO) Healthy life expectancy figure (HALE) “measures the equivalent number of years in full health that a newborn child can expect to live based on the current mortality rates and prevalence distribution of health states (sic) in the population.” (WHO 2004.) Education also affects the health of individuals.

Table 7.1 displays the ranks of countries on the basis of healthy life expectancy and indicates as well their relative association with gross national income per capita, indicated in dollars and by country rank. While the association is not precise, the trend is clear that healthy life expectancy is very much linked to higher national incomes.
Table 7.1: Highest Healthy Life Expectancies and GNI Per Capita

<table>
<thead>
<tr>
<th>Highest Life Expectancies</th>
<th>GNI Per Capita</th>
<th>Country Rank</th>
<th>Healthy Life Expectancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>34,510</td>
<td>7</td>
<td>75.00</td>
</tr>
<tr>
<td>San Marino</td>
<td>26,720</td>
<td>15</td>
<td>73.40</td>
</tr>
<tr>
<td>Sweden</td>
<td>28,840</td>
<td>11</td>
<td>73.30</td>
</tr>
<tr>
<td>Switzerland</td>
<td>39,880</td>
<td>4</td>
<td>73.20</td>
</tr>
<tr>
<td>Monaco</td>
<td>n/a</td>
<td>20</td>
<td>72.90</td>
</tr>
<tr>
<td>Iceland</td>
<td>30,810</td>
<td>10</td>
<td>72.80</td>
</tr>
<tr>
<td>Italy</td>
<td>21,560</td>
<td>28</td>
<td>72.70</td>
</tr>
<tr>
<td>Spain</td>
<td>16,990</td>
<td>35</td>
<td>72.60</td>
</tr>
<tr>
<td>Australia</td>
<td>21,650</td>
<td>27</td>
<td>72.60</td>
</tr>
<tr>
<td>France</td>
<td>24,770</td>
<td>23</td>
<td>72.20</td>
</tr>
<tr>
<td>Norway</td>
<td>43,350</td>
<td>3</td>
<td>72.00</td>
</tr>
<tr>
<td>Canada</td>
<td>23,930</td>
<td>24</td>
<td>72.00</td>
</tr>
<tr>
<td>Germany</td>
<td>25,250</td>
<td>22</td>
<td>72.00</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>43,940</td>
<td>2</td>
<td>71.80</td>
</tr>
<tr>
<td>Israel</td>
<td>16,020</td>
<td>38</td>
<td>71.50</td>
</tr>
<tr>
<td>Austria</td>
<td>26,720</td>
<td>16</td>
<td>71.40</td>
</tr>
<tr>
<td>Netherlands</td>
<td>26,310</td>
<td>18</td>
<td>71.40</td>
</tr>
<tr>
<td>Belgium</td>
<td>25,820</td>
<td>19</td>
<td>71.20</td>
</tr>
<tr>
<td>Finland</td>
<td>27,020</td>
<td>13</td>
<td>71.10</td>
</tr>
<tr>
<td>Malta</td>
<td>9,260</td>
<td>54</td>
<td>71.10</td>
</tr>
<tr>
<td>Greece</td>
<td>13,720</td>
<td>45</td>
<td>71.00</td>
</tr>
<tr>
<td>New Zealand</td>
<td>15,870</td>
<td>40</td>
<td>71.00</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>28,350</td>
<td>12</td>
<td>70.80</td>
</tr>
<tr>
<td>Singapore</td>
<td>21,230</td>
<td>29</td>
<td>70.60</td>
</tr>
<tr>
<td>Denmark</td>
<td>33,750</td>
<td>8</td>
<td>70.10</td>
</tr>
<tr>
<td>Ireland</td>
<td>26,960</td>
<td>14</td>
<td>69.80</td>
</tr>
<tr>
<td>Slovenia</td>
<td>11,830</td>
<td>51</td>
<td>69.50</td>
</tr>
<tr>
<td>United States</td>
<td>37,610</td>
<td>5</td>
<td>69.30</td>
</tr>
<tr>
<td>Portugal</td>
<td>12,130</td>
<td>49</td>
<td>69.20</td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>12,020</td>
<td>50</td>
<td>67.80</td>
</tr>
</tbody>
</table>

Table 7.2 performs the same comparison listing countries from the lowest HLE scores in the WHO data. Again, while some slight disparities exist the trend is clear when one compares these scores with the corresponding country rank.

Table 7.2: Lowest Healthy Life Expectancies and GNI Per Capita

<table>
<thead>
<tr>
<th>Country</th>
<th>GNI Per Capita</th>
<th>Country Rank</th>
<th>HLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sierra Leone</td>
<td>150</td>
<td>201</td>
<td>28.60</td>
</tr>
<tr>
<td>Lesotho</td>
<td>590</td>
<td>157</td>
<td>31.40</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>480</td>
<td>163</td>
<td>33.60</td>
</tr>
<tr>
<td>Swaziland</td>
<td>1,350</td>
<td>127</td>
<td>34.20</td>
</tr>
</tbody>
</table>
Table 7.3 performs the same comparison utilizing some of the most populous countries of the world, which do not appear at either the top or the bottom of the HLE list. It is clear that part of what we are observing in these data is the significant income disparities that exist within these large countries, which are associated with both higher and lower HLE’s within these same large populations. (Recall the income inequality data for China in Table 2.3, that indicates the much higher income levels of the eastern coastal provinces compared with those of the interior and the western regions of the country.)

### Table 7.3  Selected Healthy Life Expectancies (HLE) and GNI (Gross National Income) Per Capita for Large Populous Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>GNI Per Capita</th>
<th>Country Rank</th>
<th>HLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>1,100</td>
<td>133</td>
<td>64.10</td>
</tr>
<tr>
<td>Philippines</td>
<td>1,080</td>
<td>135</td>
<td>59.30</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>2,610</td>
<td>97</td>
<td>58.60</td>
</tr>
<tr>
<td>Indonesia</td>
<td>810</td>
<td>146</td>
<td>57.60</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>400</td>
<td>174</td>
<td>54.30</td>
</tr>
<tr>
<td>India</td>
<td>530</td>
<td>160</td>
<td>53.50</td>
</tr>
<tr>
<td>Pakistan</td>
<td>470</td>
<td>166</td>
<td>53.30</td>
</tr>
</tbody>
</table>
With respect to within country inequality, large cities tend to have greater concentrations of wealth when compared to rural areas, but they also are likely to have significant numbers of poor. All of these complex wealth distributions are linked to corresponding health outcomes. Michael Marmot cites the example of Washington D.C. to illustrate how “localized” this class-based relationship between income and health can be:

If you catch the metro train in downtown Washington, D.C., to suburbs in Maryland, life expectancy is 57 years at the beginning of the journey. At the end of the journey, it is 77 years. This means that there is 20-year life expectancy [gap] in the nation’s capital, between the poor and predominantly African American people who live downtown, and the richer and predominantly non-African American people who live in the suburbs (World Health Organization 2005).

We have discussed in previous chapters the relationship between economic policies and the production of social inequality, what Coburn terms the “class-based production of inequalities” (Coburn 2004: 41). These may be illustrated by looking at the impact of four major political traditions (social democratic, Christian democratic, liberal, and fascist or neo-fascist) in the advanced industrial countries. Political traditions committed to redistributive policies (both social and economic) and full-employment policies have generally been more successful in improving the health of their populations (Navarro and Shi 2001: 481). Labor-based social democratic political economies in Sweden, Denmark, Norway, and Finland had lower poverty rates for the general population and for children, smaller household income inequalities, and the lowest infant mortality rates during the period 1960-1996 (Navarro and Shi 2001). The most market-oriented of the liberal Anglo-Saxon countries in this study, the United States, had the highest poverty rates as a percentage of the population (19.1% for the general population, 24.9% for children), highest household income inequality relative to national median incomes, and highest infant mortality rate of all the countries in this study (Navarro and Shi 2001: 486-488). In 1996 the infant mortality rates for the United States at 7.8 deaths per 1,000 live births were nearly double the 4.0 deaths per 1,000 live births for Sweden, Norway, and Finland (Navarro and Shi 2001: 488) These patterns tend to persist over time once established and respond very slowly to policy change.

The role that structural adjustment policies (SAPs) have played in helping to create the kinds of situations represented by these data has been documented by many studies. Three hundred and thirteen SAP’s, most of them in Africa, which were designed and intended to increase development through trade liberalization “found that inequality measures worsened dramatically in the first three years following such programs.” While some recovery occurred in the fifth years, in no cases did recovery equal that of the pre-SAP period. (Labonte, 2002)
More recent critiques of structural adjustment policies administered by the World Bank and the International Monetary Fund have led to both institutions moving away from this approach to development. However, it must be emphasized that these more recent changes in policy have not had the effect of reversing previous policies. To this extent the countries in which such policies were so prevalent—African countries primarily—have continued to live with their legacy. A significant part of the continued health issues stem from these policies, including the amount of counterfeit pharmaceuticals that flood deregulated healthcare markets. (Molyneux, 2005)

Just as the Washington DC data suggest the differences that can exist between income and health status within regions of countries, the data in Table 7.3 suggest that important exceptions exist between nations as well. China is a notable example. When examined in international comparative terms, China is still a relatively poor country. Its gross national income per capita is low, yet its healthy life expectancy is toward the top third of the distribution. It has been suggested that part of this result stems from national efforts in China over the past five decades to stress policies that promote social equality and a system of public health responsibility. An open question for readers is whether China’s movement toward its own unique blend of capitalism within socialist institutions, will result in health outcomes that reflect a growing disparity in incomes. A further question is the shift in healthcare policies in China from the national public sector to local governments and the private sector, which has raised questions about whether this version of a socialist safety net legacy serves the society well.

Globalization and Emerging Infectious Disease:

Infectious disease is on the rise throughout the world. Older infectious diseases, such as malaria and tuberculosis, are increasingly prevalent throughout world populations, often, as is the case with tuberculosis, in new, more virulent forms. (In part these more virulent strains result from the overuse of antibiotics throughout the world in both human and animal populations, leading to evolving bacterial strains with immunity to particular antibiotics. CDC, 2005) Improved transportation has increased the speed at which diseases move from one part of the world to another.

A major U.S. study of the late 1990s identifies the increase in infectious diseases (long before the H5N1 avian flu virus emerged) as a major threat to national security in terms of the potential damage done.

- Infectious diseases are a leading cause of death world-wide, accounting for a quarter to a third of the estimated 54 million deaths world-wide in 1998. The spread of infectious diseases results as much from changes in human behavior—including lifestyles and land use patterns, increased trade and travel, and inappropriate use of antibiotic drugs—as from mutations in pathogens.
• Twenty well-known diseases--including tuberculosis (TB), malaria, and cholera--have reemerged or spread geographically since 1973, often in more virulent and drug-resistant forms. (TB is an opportunistic disease among individuals with HIV/AIDS. World-wide more people die from TB in the context of AIDS than from AIDS itself. See: Swivel, 2004)

• At least 35 previously unknown disease agents were identified between 1973 and 1999, including HIV, Ebola, hepatitis C, and Nipah virus, for which no cures are currently available.

• Of the seven biggest killers worldwide, TB, malaria, hepatitis, and, in particular, HIV/AIDS continue to surge, with HIV/AIDS and TB likely to cause the overwhelming majority of deaths from infectious diseases in developing countries by 2020. Acute lower respiratory infections--including pneumonia and influenza--as well as diarrheal diseases and measles, appear to have peaked at high incidence levels. (Gordon, 1999) (See the section on “useful links” at the end of this chapter.)

The causes of increased infectious disease are found within the various vectors of globalization, especially increasing population, growing inequality, migration, and urbanization. The rising world population means that numerically there are far more poor, and consequently more biologically vulnerable, people in the world. Moreover, globalization-driven migration causes hundreds of millions of people to leave their home areas in search of work. Suffice it to say here that unchecked hyper-migration is producing what Mike Davis has called a “planet of slums” in which the spread of infectious disease is accelerated by poor water and sanitation provision. (Davis, 2004, UN Habitat, 2004) Living conditions in many global slums are so desperate that individuals have insufficient income to obtain fresh water or their daily minimal caloric needs—they are literally starving to death from poverty, and as they weaken, their vulnerability to disease increases.

Throughout the history of public health, slums lacking both adequate clean water supplies and effective sanitation have had direct links with the spread of infectious diseases. (WHO 2005) A growing literature associates these present deficiencies with the legacy of World Bank and IMF structural adjustment policies and the privatization of water, especially in Africa. (Collignon and Vezina, 2000.) The pervasive movement of people through the world in search of work also contributes substantially to the spread of infectious disease. Tuberculosis, for example, had declined in both frequency and severity in older industrial economies until its resurgence in the 1970s and 1980s, when migrants from poorer areas of the world with much higher frequencies of the disease spread it to these more industrial countries.

It is difficult to over-estimate the role that endemic and increasing poverty plays in infectious disease. Paul Farmer, for example terms HIV/AIDS a “disease of
poverty” by which he means that the totality of social forces that shape the lives of the poor contribute to the spread of the disease. Once infected, the poor are hundreds of times less likely to be able to find and afford effective treatment. Poverty and inequality, then, are both cause and consequence of HIV infection and treatment. (Farmer, 2003) Throughout Africa and increasingly in Asia, the spread of the disease leaves in its wake the dead and the disabled—those too weakened to work—destroyed families, impoverished spouses and children, and numbers of orphans not seen in recent historical times. Poverty affects children in particular, leaving them with health deficits that make their effective participation in education impossible. The life-long consequences that arise from these early nutritional and educational deficits force these individuals onto a downward socio-economic slide.

The UN 2007 global report on HIV/AIDS indicates that the as the global prevalence rate for HIV infection (the number of people newly infected with HIV) remains constant over the past few years, the numbers of people living with the infection continues to grow. These data are reflected in Figure 7-1.

Figure 7-1 Global HIV infected population

[Graph showing estimated number of people living with HIV globally, 1990-2007]

While some countries have reported successes in reducing incidence rates, e.g. Brazil and Thailand, throughout the world 6800 people a day are newly infected and 5700 die from HIV/AIDS. Sub-Saharan Africa remains the core of the infection with AIDS being the leading cause of death throughout the region. China and India as the world’s two most populous countries had significantly increasing infection rates into 2005. Since that time, incidence rates have stabilized, but the numbers of infected remains large within Asia with an estimated 4.9 million people living with the disease, 440,000 persons newly infected and 300,000 deaths. In both India and China infection occurs through contaminated injection drug equipment and sexual transmission. Improved surveillance and treatment in both countries is attributed to halting the rapid rates of increase seen earlier in the decade, but in both countries specific areas of the country continue to exhibit rates of infection well above national averages.

The 2007 Report on the epidemic is, however, encouraging in the sense that it seems to have peaked and is “behaving more like a traditional epidemic”, meaning that like many of the great pandemics of the past, over time the virus loses some of its capacity and begins to run barriers to its transmission, which include the spread of effective measures of prevention. UN data estimate that the rate of annual new HIV infections peaked at about 3.4 million world-wide and then declined. This still leaves an annual new infection rate of 2.5 million concentrated in the vulnerable populations described above. (UNAIDS, 2007) Table 7.4 provides regional data for new HIV infections in 2007.

Table 7.4. HIV New Infections 2007

<table>
<thead>
<tr>
<th>Region</th>
<th>Number of new infections 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caribbean</td>
<td>17,000</td>
</tr>
<tr>
<td>Eastern Europe and Central Asia</td>
<td>150,000</td>
</tr>
<tr>
<td>East Asia</td>
<td>92,000</td>
</tr>
<tr>
<td>Latin America</td>
<td>100,000</td>
</tr>
<tr>
<td>Middle East and North Africa</td>
<td>35,000</td>
</tr>
<tr>
<td>North America</td>
<td>46,000</td>
</tr>
<tr>
<td>Oceania</td>
<td>14,000</td>
</tr>
<tr>
<td>South and Southeast Asia</td>
<td>340,000</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>1,700,000</td>
</tr>
</tbody>
</table>

Source: McNeil, 2007

One final note on globalization and emerging infectious disease. Mankind has a long history of infectious diseases moving from domesticated food animals to human hosts. Many of the ways in which diseases are now “emerging” link to pressures that increasing population and intensified economic activity have placed on the world food supply. Over the past three to four decades, the increasing demand for more food has forced farmers further into the forests and onto lands of marginal cultivability. Huge collections of food animals on live stock...
and poultry farms make the breeding and transmission of animal diseases more likely. As human populations mix more closely with food animals, more diseased animals are shipped throughout the world, making the transfer of new diseases from animals to humans more likely. These zoonotic diseases (diseases that move from animals to humans) are the direct results of the heightened patterns of interaction between humans and animals. (Garrett, 1994) Such have been the origins of “mad cow disease” (BSE bovine spongiform encephalopathy) and other so-called prion diseases such as Creutzfeld-Jacob Disease, and scrapie – resulting from the ingestion of infected flesh of one species by another. Another disease, the H5N1 flu, the so-called avian flu, has in its early deadly manifestations been tied almost exclusively to humans eating the flesh of or handling diseased birds, or the prevalence of the virus among large flocks and herds in factory farming locations. Developing effective “governance” of these worldwide links between food production and the transmission of disease across boundaries poses one of the primary challenges of a highly interdependent, globalized world.

Globalization and Public Health:

What is called public health differs throughout the world. In some countries a health ministry exists that oversees all health activities from the building and running of hospitals, to funding medical care, to taking collective action to protect the health of the entire public. In other parts of the world these basic activities are divided among different institutions, some under government control and some in the non-state, private sector. What is most commonly meant by public health is the capacity and the authority vested in the state to take action on behalf of the society as a whole. Such actions may be generally preventive, designed to prevent people from contacting disease or becoming ill, or based on direct interventions, for example, ensuring that sick people have adequate medical care.

Some claim that the primary goal of public health should be distinguished from that of medical care. In this view, the goal of public health is to reduce incidence, to ensure that the fewest numbers of people within a country (the public) contact a disease. The goal of medicine, in contrast, is primarily to treat the sick, those with disease who are ill. At times these goals overlap and interact, as when medical professionals seek to encourage their patients to take preventive action to assure their own health, e.g. to eat right, or not smoke. Sometimes public health will influence the same behaviors, for example, by pursing a social marketing campaign aimed at encouraging people in general not to smoke. Public health sometimes pursues its larger goals through medical means, such as ensuring that individuals are immunized against various diseases. In countries such as China and India with their rich and enduring traditional medicine, the lines between treatment, cure, and preventive health are further blurred. The key distinction is between the action scale of medicine directed at individuals and
public health, which is directed at groups, large numbers, and ultimately the entire population.

We can make four generalizations about the relationship of medicine and public health:

1. The wealthier that individuals, groups and countries become, the greater their tendency to seek western-style medical interventions. This tendency has great implications for how countries provide for healthcare, which we will discuss later.

2. As countries grow more affluent -- particularly those pursuing the patterns of social organization and wealth of the older industrial countries -- the relative influence of what has been called the medical industrial complex grows stronger and influences governmental policy. (The Medical Industrial Complex is the name given to the complex combination of doctors, hospitals, medical organizations, medical equipment makers, pharmaceutical producers, and other medical industry manufacturers—all of whom come to share common interests in how medicine is performed.) Out of this relationship, medical interests come to have a greater place in the policy process than public health interests. The scientific technologizing of medical care tends to be one of the most active industrial sectors of advanced economies.

3. Compared to the resources spent on individually oriented medical care, public health activities receive only a small fraction of the public budgets organized around health. In the United States, public health receives about 3% of every dollar spend on health care.

4. Over time the ways that people come to talk about health and disease focus on how medicine deals with the individual body. Individual health care comes to be more important in public discussion than notions of the “health of populations.” This pattern may be reversed when broad based epidemics or pandemics threaten countries, such as avian flu. This focus on individual health is accelerated by the continual expansion of identifiable diseases within the medical model, and the proliferation of professionalized ways of dealing with those diseases. In the United States, one in every seven jobs in the society is in “health care” (meaning in almost every case: medical care.) Estimates are that within 15 years, one in every five jobs will be in health care and as much as 35% of Gross Domestic Product may be devoted to health care. The United States leads the world in these dubious distinctions, but the trends in health care spending, and the proliferation of disease models exist throughout the world and directly parallel patterns of economic prosperity.

The upshot of this tension between public health and medicine is that most social resources tend to be arrayed on the side of medicine, rather than public health. Globalization affects this equation in two very contradictory ways. On the one hand, the current climate of intense global economic interaction and uneven economic growth means that many in the world define their place and assess
their own wellbeing by the amount and sophistication of medical care that they can obtain. Global networking makes possible an accelerating diffusion of medical technology, skills, and interventions. Consequently, a significant amount of the world’s treasure is being spent to provide high-end medical treatment for the relatively smaller, wealthier part of the world’s population. On the other hand, with human contact increasing through the boundary-breaking influences of globalization, the world faces new and pervasive health challenges. To recite a now-familiar litany, increased poverty leads to greater migration, destruction of infrastructure, migration, and hyper-urbanization, all of which contribute to increases in disease levels. Disease is disproportionately visited on the poor, who become even less able to gain the resources to meet the challenges of every day life, and as a result they fall into ever-increased stages of vulnerability.

From this disturbing situation one could conclude that the challenges for global public health have never been greater. That certainly is the position of the authors of this text. Unfortunately, public health as it is practiced in the world is failing to meet these challenges. (Garrett, 2000) One could scale these challenges from the larger, more serious, more complex, and more costly to the smaller, more immediate and not very costly. At the one end would be global pandemics, such as HIV/AIDS and avian flu. Effectively combating these diseases requires a substantial commitment of global assets and talent—a network of surveillance, the ability to get national governments to intervene when necessary, policy-making will, plenty of money to do the research, identification of the pathogen and its vectors, creation of the vaccine, production of it in large amounts, distribution of it effectively and fairly, and then effective medical treatment to people who contact the disease.

Laurie Garrett’s critique of global public health in the year 2000 made the case that globalization leaves us collectively more vulnerable to emerging infectious disease, and emphasizes that even as our vulnerability increases, other pressures of globalization—the consequences of state-constraining economic and political policies—were making us less able to deal with these threats. As the threat grows larger, the capacity of our responding institutions is being reduced. She makes the further point, one sometimes lost, that this is the new public health predicament. As long as globalization continues along its current course, the more these pandemic consequences will threaten global human health. Hence, the new predicament of global public health.

Consider how vaccine production relates directly to the issue of the globalization of medical interventions. As the United States faced a serious global threat from avian flu, its pharmaceutical industry in United States ironically no longer manufactured flu vaccines. Or, for that matter, does it any longer manufacture a whole host of vaccines and other anti-biotics, known to be effective for a variety of other infectious diseases. When outbreaks of these diseases occur, the United States must purchase its supplies of vaccines in the global market, where they then can be in short supply. The simple reason for this dilemma lies in the profit
decisions made by the major U.S. pharmaceutical companies, which increasingly have become the dominant TNC’s in the industry.

These companies do not want to put their efforts into making and distributing a non-patented inexpensive medication that is only taken occasionally by part of the population. Given the logic of global competitive markets, they argue that working with these medications, they cannot make sufficient profits to complete in these markets and continue their path-breaking research to develop new drugs. Their profits suffer from investment in drugs that will be sold less expensively and be utilized only on an occasional basis. They argue they must concentrate on inventing new drugs (protected by patent law) for which they can charge considerable amounts (some would say enormous amounts), and which have to be taken by patients on a regular, often daily, basis. As a hard-core businessman would state it: there is no money in ordinary vaccines. Industry effort pushes these activities to the margin, and the entire situation tends to be ignored until a crisis emerges, at which time, typically, the pharmaceutical industry looks to government subsidies to take corrective action. (Mulrooney, 2004)

It is sensible to ask why government, the primary agent for “public health,” either does not manufacture the vaccine itself, or simply mandate that private sector firms do so. The answer lies in the market policies of neo-liberalism, which hold that such an intervention in markets is not an appropriate role for government. Remember that neo-liberal ideology holds that “where demand is sufficient, the market will provide.” This ideology actually denies the need to test such economic claims in the market, and denies as well the pressing global health threats from which producers would be wise to protect the customers who buy their patented drugs. Neo-liberal political actors continue to ignore the larger needs of the society and believe in their ideology even when it is manifestly untrue, as in this case. While the US pharmaceutical industry giants receive government assistance in the form of tax reductions, protection of domestic markets, price supports on sales to government supported Medicare and Medicaid, and help with overseas sales, neo-liberals in the pharmaceutical industry see restricting government as simply a normal exercise of large company power within the political process that surrounds government. As recent US Medicare legislation demonstrates, the largest pharmaceutical companies have the political power and influence to prevent government from taking actions they believe would damage their interests. (Neubauer and Pratt, 1981)

One final word before departing this subject. Much effective public health does not cost very much. As we indicate above, the purpose of public health is to largely to reduce incidence by preventing people from getting disease, to protect them from disease when it is present, and to encourage healthy behavior. Some countries—such as China, Japan and Korea—have centuries-old health traditions that encourage people to eat sensible diets, take care of themselves,
live within supportive family structures, and adhere to the wisdom in what the west calls “traditional oriental medicine”. But much of the world lacks these traditions, and instead develops the destructive behavioral habits that are so much a part of the global marketing and consumption that wreak havoc on health. The United States, for example, and other parts of the older industrial countries are experiencing an epidemic of obesity and diabetes linked directly to diet, the “fast food” diet so readily identifiable from global marketers throughout the world. One child in fourteen now contracts diabetes in the U.S. The cost of dealing with these chronic diseases is enormous. In the United States, about 80% of all healthcare costs (read: expenditures on medicine) are consumed by about 20% of the population. That 20% is disproportionately those with chronic disease, and a significant percentage of these diseases originate in poor health and diet behaviors. The United States spent about 16% of its gross domestic product on health care in 2004, approximately $2.3 trillion dollars, roughly equal to the Gross Domestic Product of China which in 2006 was $ 2.44 trillion. (National Coalition on Health Care, 2008. World Bank 2008)

Much of contemporary public health involves surveillance, community-oriented engagement projects, and education -- information-giving efforts to encourage people to change their behaviors, Money is often very hard to find for such projects, in part because they are not considered as newsworthy nor deemed to be as important as medical intervention projects. However, as the financial data tell us clearly, when we witness the course of the globalized world, it is not clear that we cannot “afford” to spend on public health; rather, it seems very much the case that we cannot afford not to spend such funds. Not spending the funds leaves us dealing with people who are being made ill by the dynamics of globalization. As these costs mount, they become “unbearable” by governments. 1 To date their primary way of dealing with the burdens of public health on government budgets is to cut back on services. That “solution” not only solves nothing, but worsens the public health threats nations face. (Kim, 2000.)

**Globalization, Healthcare Reform and Healthcare Work**
We have discussed in previous chapters how neoliberal policies seek to limit the role of the state’s activities. With respect to the more advanced economies this involves a persistent review of and often reduction of social welfare policies. These tendencies are apparent within the broad policy arena termed “healthcare reform”. Universal healthcare, the idea that every person in society is entitled—by right—to healthcare has been a powerful idea in the world since World War II. The United Nations and World Health Organization have developed broad policies arguing for both the right and the means by which it should be assured

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1 Another way to think about what is going on globally with health and health care expenditures is to see that while the poor in the world are dying because they do not have enough food, clean water, and sanitation, the rich of the world are dying because they eat too much of the wrong things.
within countries. At the value level, the idea of health for all gains general acceptance and support.²

However, at the policy level the costs to countries of providing health care either directly to consumers or through insurance mechanisms has become increasingly high. Within what is generally called western medicine the introduction of ever more elaborate and expensive technologies (especially imaging and pharmaceuticals) couples with the aging of populations (older people in this model require much more care), and the persistent spread of chronic diseases to drive up costs.³ Countries respond either by restricting health care access (reducing the numbers and kinds of people who receive healthcare coverage), reducing benefits (restricting the kinds of care and interventions that will be available through coverage), or by increasing the direct costs charged the recipient of care. (Anderson and Poullier, 1999) Within complex national health care systems such as those of Europe, this movement is termed a “retreat from universalism,” meaning that the state will no longer be committed to a policy of providing health care for all. The United States, for reasons that have everything to do with its own internal politics, has the largest percentage of its population without healthcare coverage of any developed nation, around 47 million out of a population of 300,000,000, or roughly one in every six persons. (US Census Bureau, 2008)

As table 7.5 suggests, the range of national commitments to health and health care continues to vary significantly. However, repeated analysis demonstrates that there is not always a good correlation between what a nation spends and the health outcomes that result. The United States cost/outcomes data have received extensive analyses that point to the practices that rapidly drive up healthcare costs without necessarily improving outcomes—for example, the high costs of administering complex health insurance schemes. The China version of this process has been the passing down of healthcare financing from the central government to local governments beginning in 1978. From 1978-1999, the

² The best known statement to this effect is the so-called Alma-Alta Declaration developed by the World Health Organization and UNICEF in 1978, which reads in part: The Conference [The International Conference on Primary Health Care] strongly reaffirms that health, which is a state of complete physical, mental and social wellbeing, and not merely the absence of disease or infirmity, is a fundamental human right and that the attainment of the highest possible level of health is a most important world-wide social goal whose realization requires the action of many other social and economic sectors in addition to the health sector.”

³ Older people tend to have more chronic diseases than younger people, but current research in the United States and Europe emphasizes the rapid increase of chronic diseases caused by environmental or behavior factors. For example, the United States has an epidemic of diabetes, which often on-sets at very early ages. Diabetes has genetic correlates, but is also associated with obesity, derived in part from over-eating.
central government’s share of health care financing fell from 32 to 15%. As Blumenthal and Hsiao indicate:

“That had the immediate effect of favoring wealthy coastal provinces over less wealthy rural provinces and laid the basis for major and growing disparities between investments in urban and rural health care. In effect, the central government drastically reduced its ability and commitment to redistribute health care resources from wealthy areas to poor areas of a huge and diverse country in which the overwhelming majority of the population lived in the poor regions. Reduction in governmental support for the health care system also had the effect of largely privatizing most Chinese health care facilities, forcing them to rely more on the sale of services in private markets to cover their expenses after allocations from public sources declined. Public hospitals came to function much like for-profit entities, focusing heavily on the bottom line. The Chinese government informally sanctioned this privatization of hospitals and clinics by ignoring it.” (Blumenthal and Hsiao, 2005.)

Although they are not called neoliberal policies in China, these kinds of policies have had the same effect as similar policies throughout the globe. They are designed to free the central government of burdens to be borne through taxation by privatizing activities and in the end such policies place greater burdens on users of services.

Table 7.5: Healthcare expenditures by percent of Gross Domestic Product

<table>
<thead>
<tr>
<th>Country</th>
<th>% Of GDP</th>
<th>% Change 1997-2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>14.6</td>
<td>40.72</td>
</tr>
<tr>
<td>Germany</td>
<td>10.9</td>
<td>26.49</td>
</tr>
<tr>
<td>France</td>
<td>9.7</td>
<td>37.61</td>
</tr>
<tr>
<td>Canada</td>
<td>9.6</td>
<td>28.54</td>
</tr>
<tr>
<td>Sweden</td>
<td>9.2</td>
<td>27.89</td>
</tr>
<tr>
<td>Netherlands</td>
<td>9.1</td>
<td>27.04</td>
</tr>
<tr>
<td>Denmark</td>
<td>9.1</td>
<td>16.60</td>
</tr>
<tr>
<td>Italy</td>
<td>8.5</td>
<td>27.37</td>
</tr>
<tr>
<td>New Zealand</td>
<td>8.5</td>
<td>36.52</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>7.7</td>
<td>36.60</td>
</tr>
<tr>
<td>Spain</td>
<td>7.6</td>
<td>36.85</td>
</tr>
</tbody>
</table>

Source: King’s Fund, 2005

The dilemma at the core of rising health care expenditures lies in the very nature of how medicine continues to expand its range of activities, especially expensive technology-based interventions within the medical model approach to health care. As populations grow and age, the number and costs of medical interventions also grow, and national health care expenditures increase. All
countries face this dilemma as they expand their technology-based medical capabilities and seek to expand them throughout their populations.

Among developed countries, as we have seen, dominant political and economic policies legitimize the shifting of these increased costs from the public sector to the private. The story is different for developing countries and especially for poor countries characterized by ineffective governments, such as those in some African states. As discussed above, weak and poor nations have been particularly subject to the structural adjustment policies of the IMF. Structural adjustments attempt to assure that the private sector is open to the influences of external capital. The result has often been the creation of a wide-open medical/health system in which drugs in particular can be imported and distributed throughout the population essentially without any form of regulation. The penetration of these economies with counterfeit drugs is also widespread, leading to the situation in which people spend disproportionate amounts of their meager income for drugs that are either inappropriate or ineffective. (Molyneux, 2005)

Crises also exist within global healthcare with respect to the shortage and migration of trained healthcare workers. Part of the problem lies in shifting global demography. Former third world countries (currently cast as the “developing world” although some are either stagnant or in negative development) are increasingly home to the world’s younger populations. The more mature economies are rapidly aging, some of them already at or below replacement fertility. (Douglass, 2002) Aging populations require increased health care, and the required health care workers increasingly come from the developing world. This “demand pull” of older populations has created a health care “brain drain” that threatens poorer countries whose own health care labor forces have also in some cases been depleted by various epidemics, most particularly malaria and HIV/AIDS. As the report of the Joint Learning Initiative puts it:

“On the frontline of human survival, we see overburdened and overstressed health workers—too few in number, without the support they so badly need—losing the fight. Many are collapsing under the strain. Many are dying, especially from AIDS. And many are seeking a better life and more rewarding work by departing for richer countries. Today’s dramatic health reversals risk more than human survival in the poorest countries—they threaten health, development, and security in an interdependent world.” (JLI, 2004, p. 1)

The report estimates a current world shortfall of approximately 4,000,000 trained health care workers, with the number likely to increase without massive investment by all countries, developed or not, in health care labor forces. Figure 7.2 illustrates the distribution of global healthcare workers.

**Figure 7.2: Global Distribution of Healthcare Workers**
The legacy of under-investment has shadowed the global health economy over the past three decades deriving largely from the politics of structural adjustments required of underdeveloped debtor nations.

“Two decades of economic and sectoral reform-capped expenditures, frozen recruitment and salaries, and restricted public budgets, depleting work environment of basic supplies, drugs and facilities…These forces have hit economically struggling and politically fragile countries the hardest.” (JLI, 2004, p. 1)

The healthcare sectors of advanced economies are among the highest value-added components of the service sector. Healthcare labor shortages bid up wages over time. Because costs increase in healthcare (driven primarily by technology and its requirements for changes in treatment), healthcare providers in turn are driven to seek greater control over labor costs. Importing labor and off-
shoring where possible become management strategies that create a strong
demand-pull for health care workers.4

This demand-pull global migration of health care workers toward richer countries
is perhaps best illustrated with Filipina nurses who have been providing health
care labor to an increasing number of advanced economies. Initially drawn to the
US market because of similarities in training and certification regimes (a result of
the US colonial experience in the Philippines), and visa policies favorable to
immigration, Filipina nursing numbers increased in the U.S. throughout the period
1970-2000 and expanded to other English speaking advanced economies,
especially the U.K., Canada and Australia, and more recently to the Gulf States.
(Choy, 2003) The development of a favorable export market for nurses caused,
in turn, a revolution in nursing education in the Philippines. Health care personnel
responded to the high market incentives and government policies that supported
migrating Philippine labor. As a consequence, Philippine workers abroad began
sending home remittances that now account for approximately 10 percent of
Philippine GNP. (In 2007 remittance income in the Philippines amounted to
between $12 and $14 billion. Farreran, 2007)

The demand-pull of global healthcare markets on healthcare in the Philippines
has produced significant problems. While the number of training institutions has
grown (absorbing available public and private educational investment), and the
numbers of students entering nursing are correspondingly larger, the domestic
market for professional nurses has been distorted. Those trained as nurses and
unable to migrate are not likely to enter nursing within the Philippines because of
low salaries and poor working conditions. The result is that the nursing labor
force suffers first from the urban demand-pull within the country and also from
the demand-pull of the global market. The result is that the historic urban/rural
distortion in the domestic distribution of nurses is perpetuated and reproduced as
the national development of nurse’s increases. (Kline, 2003; Tyner, 2000) In yet
another distortion of the domestic healthcare labor market, physicians have
begun to retrain as nurses in the Philippines to gain quota access in migration
schedules that are closed to physicians in receiving countries, which themselves
have physician surpluses.

The pattern of Filipina nursing migration merits study not only for its own role as
a global migration circuit, but because it is probably the early wave of a pattern of
healthcare migration. As the Joint Learning Initiative study makes clear, the
demand-pull for such workers, especially nurses, has already reached crisis

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4 Many of the older industrial societies experience chronic nursing shortages as a result
and a fractious labor politics. Increased healthcare burdens induce hospitals to require
more of nurses, a situation which in turn, leads the latter to request higher salaries, which
are in turn resisted by management, etc. This dynamic overtime has been accompanied by
chronic “nurse burn out” which leads to individuals leaving the profession. This leads to
yet further shortages, and the cycle continues. (Buchan and Calman, 2004)
proportions throughout Africa. Evidence is beginning to develop of nurses from Taiwan and China joining the migration in significant numbers. Some Philippine nursing schools are signing agreements to train nurses in the Philippines from the PRC.

Globalization of Healthcare Interventions

Healthcare is on its way to being one of the largest industries in the world, but like tourism, we often do not recognize it as such because it is highly advanced in some countries, but not in others. Moreover, as an industry it is composed of various components that we have not yet grown accustomed to “seeing” collectively as an industry. And with the exception of pharmaceuticals, many of the products of the medical/healthcare industry do not have brand names, or applications that are easily recognizable outside of professional circles. Further, to a significant extent, medical care is still a highly localized activity. Nonetheless, healthcare/medical care is rapidly becoming a globalized industry, imitating the patterns of other globalized industries. In the immediately preceding section we saw how migration of healthcare workers has already come to imitate the migrations of other service industry workers. In this section we will examine three aspects of healthcare industry practices that suggest that it is, indeed, becoming a global industry: (1) the global structure and practices of the pharmaceutical industry; (2) bio-technology; and (3) the development of global elective surgery.

(1) The pharmaceutical industry. The globalization of the pharmaceutical industry (often just called pharma, or sometimes Big Pharma to refer to the largest companies that dominate the industry) fits well within the contested narrative framework. Those who view globalization through the progress lens see the industry as virtually a paradigm of progress, a very good example of the wonders that come from the combination of science, technology, capital, sophisticated organization, and global distribution. It is for many a representation of the knowledge industries of the future that are changing our societies for the better.

For those who subscribe to the disaster narrative, pharma represents virtually everything that is wrong with globalization. A small group of powerful TNC’s (a group getting smaller through constant mergers) is using its superior economic and political power to dominate the world production and distribution of drugs, employing the organizations of transnational regulation, namely the IMF and WTO, to ensure that drugs that are produced locally will be governed by the intellectual property laws of the developed countries. Western medical care is becoming increasingly dependent on drugs as its primary intervention technology. Consequently, more people throughout the world are increasingly dependent on the small group of powerful firms that dominates the global pharma market.
Table 7.6 lists the largest 20 pharmaceutical firms in the world and their 2003 sales. These are authentically globalized firms, produced from two decades of steady merger and consolidation. Their historic country of origin says little about how they operate in the world. Most operate within 70-100 countries.

The consolidation of these firms has been paced by their global attraction as stock investments, demonstrated by their price rises and relatively high dividend payments to shareholders. In the progress narrative, both the high price of drugs and high profit rates are the costs that must be paid to provide acceptable returns on corporate investments required for drug research and development. In the disaster narrative, the industry indulges in self-justification to disguise both its high profits and the extremely high percentage of corporate costs devoted to advertising and other techniques of demand creation. (Mulrooney, 2004) Critics extend the argument to point out that even were one to grant the relative importance of the research and development expenditures by the industry, several studies indicate that only about 3 per cent of the new drugs brought to market are demonstrably superior to existing drugs. Much of the corporate research and development effort seeks new products that can dominate market share and be sold at patent-protected prices. Many examples exist of companies bringing to market new drugs that are very similar to those whose patent protection is running out. When patent protection expires, and other companies can make and market those formulations, the price typically falls. Companies, therefore, work to keep as many patent protected products on the market as they can, since the prices and profits are much higher.

Table 7.6. The world’s largest twenty pharmaceutical firms in terms of 2003 sales.

<table>
<thead>
<tr>
<th>Company</th>
<th>2003 Pharma Sales Volume (US $1,000,000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Pfizer (US)</td>
<td>$39,631</td>
</tr>
<tr>
<td>2. GlaxoSmithKline (UK)</td>
<td>$29,736</td>
</tr>
<tr>
<td>3. Merck (US)</td>
<td>$21,517</td>
</tr>
<tr>
<td>4. Johnson &amp; Johnson (US)</td>
<td>$19,517</td>
</tr>
<tr>
<td>5. *Aventis (Europe)</td>
<td>$19,009</td>
</tr>
<tr>
<td>6. AstraZeneca (Sweden)</td>
<td>$18,849</td>
</tr>
<tr>
<td>7. Novartis (Switzerland)</td>
<td>$16,020</td>
</tr>
<tr>
<td>8. Bristol-Myers Squibb (US)</td>
<td>$14,925</td>
</tr>
<tr>
<td>9. Roche (Europe)</td>
<td>$12,208</td>
</tr>
<tr>
<td>10. Lilly (US)</td>
<td>$11,856</td>
</tr>
<tr>
<td>11. Wyeth (US)</td>
<td>$11,764</td>
</tr>
<tr>
<td>12. Abbott (US)</td>
<td>$9,323</td>
</tr>
<tr>
<td>13. Sanofi-Synthelabo*</td>
<td>$9,111</td>
</tr>
<tr>
<td>14. Takeda (Japan)</td>
<td>$7,578</td>
</tr>
<tr>
<td>15. Schering-Plough (US)</td>
<td>$6,672</td>
</tr>
<tr>
<td>16. Boehringer-Ingelheim</td>
<td>$6,264</td>
</tr>
</tbody>
</table>
Dubey has detailed how the imposition of such patent laws affected the price of drugs in India. During the 1990s great external pressures were brought on the India pharmaceutical industry to be organized on the principles of pharma in Europe and the United States (that is to say, “liberalized”). Changes in the law brought about new rules. Dubey, who employs the globalization-as-disaster lens, has analyzed the consequences of these changes for the consumer and local industry. (He employs the older terminology of multinational corporations, MNC’s, rather than transnational corporations, TNCs, that we have adopted.)

“The main aim is to impose the conditionalities of WTO and to change the Indian Patent Act as MNCs need more markets and are eyeing Asia which is the largest continent of the world where 60% of the world population lives but contributes only 20% of the world pharmaceuticals business. With a high rate of population growth it is expected that the need of drugs will tremendously increase in the third world countries including India in the next millennium. India contributes 16.1% of the world population, but it produces only 1.2% of world drug production Hence the MNCs are trying to have more control over the pharmaceutical markets of the developing nations.

Developed countries are backing their own big companies to capture markets in other countries even at the cost of the interest of the people there. The United States has successfully battled for the inclusion of strict intellectual property rules in international trade agreements such as NAFTA and GATT. Often the U.S. position has literally been drafted by PhRMA. These trade agreements disregard public health considerations and have forced dramatic changes in the intellectual property rules the world over. Still PhRMA is not satisfied. And when PhRMA is not happy the office of U.S. Trade Representative (USTR) is not happy, says the editorial comment of Multinational Monitor. (Dubey, 1999)

Following the imposition of pricing policies permitted by market reform, prices for common drugs in India rapidly increased over a five-year period, in some cases by as much as 450%. This linkage between the oligopolistic control over the creation, production, and distribution of pharmaceuticals, and worldwide price increases leads many in the “anti-globalization” camp to view availability of drugs as one of the world’s leading healthcare crises. When we couple oligopolistic
control of drug availability and prices with chronic diseases among the poor who can’t afford the drugs, the nature of the health care crisis is clear.  

(2) Biotechnology. Biotechnology is a relatively new industry. Its early history has been one in which the leading information and knowledge economies have had great advantages both in pursuing the basic research that is creating new knowledge, and in developing the industries that are applying it to new technologies. Table 7-7 provides data on the top ten bio-pharmaceutical companies in the world, which are a sub-set of biotechnology. As one can see, even while these sales figures are substantially smaller than traditional pharma firms, they are nevertheless, significant and growing at very high rates. Over time, one can predict that the boundaries between these kinds of firms will disappear.

Table 7-7. Top 10 Biopharmaceutical Companies by annual dollar volume.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Company</th>
<th>Volume (millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Amgen</td>
<td>$7,868</td>
</tr>
<tr>
<td>2.</td>
<td>Genentech</td>
<td>$2,621</td>
</tr>
<tr>
<td>3.</td>
<td>Serono</td>
<td>$1,858</td>
</tr>
<tr>
<td>4.</td>
<td>Biogen Idec</td>
<td>$1,852</td>
</tr>
<tr>
<td>5.</td>
<td>Genzyme</td>
<td>$1,141</td>
</tr>
<tr>
<td>6.</td>
<td>Chiron</td>
<td>$1,117</td>
</tr>
<tr>
<td>7.</td>
<td>MedImmune</td>
<td>$993</td>
</tr>
<tr>
<td>8.</td>
<td>Gilead</td>
<td>$836</td>
</tr>
<tr>
<td>9.</td>
<td>Millennium</td>
<td>$244</td>
</tr>
<tr>
<td>10.</td>
<td>Intermune</td>
<td>$154</td>
</tr>
</tbody>
</table>

Source: Pharma Contact, 2005

These are true knowledge industry firms, and as such, they can exist anywhere in the world, and operate through informational networks that are not necessarily place-related. Singapore, for example, has made a significant investment in the development of new biotechnology industries, which it sees as an industry in which it can have significant comparative advantage. The government of Singapore has proved willing and able to purchase knowledge capacity from the United States and Europe to start the industry and compensate for its own limited

5 As we have indicated throughout the text globalization is full of contradictions. While this review of pharma and liberalization in India are correct, exceptions have come out of the same context and conditions. India, for example, is home to Cipla Ltd, a generic drug maker, which much to the objection of pharma determined to market in 2003 the triple therapy AIDS intervention drug package for $350, compared with $12,000 a year in its patent-protected form used by pharma. That generic package has continued to drop in cost, currently running about $150. (McNeil 2007)
knowledge base. As one senior government official remarked to one of the authors of this text, "we are in the business of renting brains". These kinds of investments in knowledge-based industries will likely continue to be characteristic of the global development of biotechnology. Singapore’s biotechnology volume grew over 30.% to S$23. billion in 2006. (Biomed Singapore, 2007)

(3) The development of global elective surgery offers another example of how the healthcare industry is organizing according to the new possibilities of globalization. The economic problem that lies at the core of this phenomenon is simple: the cost of medical care, especially advanced surgical procedures, is rising throughout the industrial countries. Restrictive healthcare coverage is leaving many people in society without insurance coverage. When surgery is needed, or desired, the costs may prove prohibitive. One solution is to seek surgery in a country with lower costs. Residents from one country now take advantage of the excellent medical care and reasonable costs available in other countries, shaping a new global healthcare industry, one in which patients migrate to healthcare facilities throughout the globe. India, for example, has developed several superior medical facilities that draw patients from overseas. This kind of health care traffic has existed for decades as individuals from lesser-developed countries have sought care from the medical centers of the advanced industrial countries. But now the reverse is true as the developing countries are beginning to serve as health care centers. The phenomenon comes from the same economic logic that drives the global economy: work will be done where it is cheaper once certain satisfactory quality standards have been assured.

Thailand is developing a global and regional surgical/ medical center capacity that already serves over 1.1 million foreign patients a year, and is targeting annual capacity of 1.5 million. (SMH, 2005) In Singapore 233,000 foreign patients sought treatment in 2004, and the country has established an annual volume goal of one million external patients. (Parker, 2005) The phenomenon has come to be termed “medical tourism” and is a major part of development planning in India, which like Singapore and Thailand, seeks to become a major center benefiting from the global difference in health care costs. One facet of this medical tourism in Asian countries is the return of Southeast and South Asia physicians from the United States and Europe to their countries of origin. In another example, some of the 45,000,000 Americans without health insurance have made Mexico a medical tourism destination as well, overcoming American attitudes that characterize Mexico as an undeveloped country without advanced medical facilities and personnel.

Medical tourism can be coupled with digital outsourcing and the pervasive migration of health care workers to draw a picture of a healthcare/medical world that is truly globalized and which is responding to the same economic forces recognizable in other dimensions of the global economy.

Useful Links:
The BBC: http://news.bbc.co.uk/go/pr/fr/-/2/hi/health/6959583.stm

The global studies network: http://gstudynet.com/gwcsq

World Health Organization: http://www.who.int/en/

OECD health data: http://www.oecd.org/document/30/0,3343,en_2649_37407_12968734_1_1_1_37407,00.htm

An interesting site on the relationship of public health to equality: http://www.alternet.org/#3E242F

Wikipedia contains a site that lists world-wide deaths by various infectious diseases: http://en.wikipedia.org/wiki/Category:Deaths_by_infectious_disease
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Sydney Morning Herald (SMH), “A slice of the action,” October 29, 2005


Chapter Eight
Urbanization, Migration and Inequality

Guangzhou in the Pearl River delta of Southeast China offers an unparalleled example of global trade and migration patterns. Historically it was open to early silk trade with the west. In the 19th century, while its population ranked it the fourth largest city in the world, it saw tens of thousands of the poor from surrounding Guangdong Province migrate to North America’s western regions and Hawaii, where they gravitated to cultural enclaves offering work in San Francisco and Honolulu. In contemporary times Guangzhou has evolved into the archetype of domestic migration toward work, education, and other advantages of city life.

A snapshot of Guangzhou reveals that it has become a major contributor in the rise of China as a global industrial power, its population rapidly swelling from 6 million in 1990 to nearly 10 million in 2005, with the available labor supply presently tightening. With an expanding infrastructure, excellent transportation, a phenomenal economic growth rate of 21% a year, effective trade zones, and a broad and vibrant industrial base in autos, heavy equipment, petrochemicals, communications equipment, and medicines, it presently produces some $69 billion a year. 127 of the Fortune 500 businesses have invested over $6 billion in foreign direct investment there. Over 2100 schools and 28 universities and higher education technical schools serve to improve the human capital that, combined with its geographic advantages as a sheltered river port in a moderate climate, make Guangzhou a rapidly growing mega city. (www.cantonbrand.com) As one of the more successful contributors to both the Chinese and the global economy, Guangzhou also faces many of the ongoing demands that confront global mega cities.

Historically, urbanization and migration have often happened in tandem—people migrate for all kinds of reasons, but most often they migrate to cities. As we mention in an earlier chapter, cities are concentrators—they bring together resources of people, finance, culture, administration, etc. in ways that create capacities and opportunities that smaller settlements lack. Many countries have capital cities that act as primary concentrators—as the political and economic centers for a society, and often as knowledge and cultural centers as well. Wealthier countries and numerically larger countries may have many major cities, with some of these functions distributed unevenly across them. Sometimes one city functions as the finance and economic capital and another as the political and administrative center.

As regional economies grew, regional cities emerged to perform these multiple roles. With national economies developing from regional economies, it was often the case that each major region in a national economy, Guangzhou, for example, would have an urban center, or core. When societies have undergone rapid
industrialization, this process has often accelerated as workers were drawn out of agricultural occupations to urban-based industrial work. In virtually every case, corresponding service industries have grown up to provide these industrial concentrations with transportation and communication linkages. Some version of this story can be found in the urban/industrialization of every country.

Cycles of urbanization tend to parallel broader economic growth cycles. Globalization has accelerated this process and generated new migrations that have in turn produced new kinds of urban settlements. This chapter examines some of the causes for these migrations, examines the different character they take in various countries, and the range of resulting urban settlements. Within this process, we locate and examine once again some of the dynamics of inequality that have come to characterize contemporary globalization.

**Migration and Urbanization**

Contemporary migration and forms of urbanization are so inseparably linked that it is difficult to separate them conceptually. Accepting this limitation for purposes of analysis, it is useful to distinguish some basic types of migration, if only to recognize the different causes that induce people to migrate.

- **Domestic job pull.** Within the past three decades, global manufacturing has restructured, moving significant amounts of production from the developed to the developing world. Most new manufacturing sites are concentrated in urban settings, which become job magnets for domestic migration of all sorts. People leave historic regional and provincial cities to move to areas with more and better job possibilities. Even greater numbers leave historic agricultural areas to relocate in urban settings. In yet another pattern, many new manufacturing centers have been developed specifically to house global firms (TNC’s) and facilitate international trade zones.

  As we will discuss below, the result of these migrations has been the rapid growth of *urban aggregates* and cities, especially within countries in the developing world. (Again, as we will discuss below, urban concentrations are referred to by various terms. A common usage is to call them *cities*, which has a common sense meaning, but on closer inspection this familiar usage does not often fit the phenomenon we are describing. Often the concentration of peoples includes formal cities—defined in terms of their governing authority—and their surrounds. Urban scholars tend to call these larger concentrations *urban aggregates*, or *conurbations*. As we will see below, these aggregations, or settlements can sometimes extend for many kilometers around formal cities. Their very existence produces new problems.)

These migrations have also resulted in the rapid growth of cities in developed nations, as globalization leads many cities to become finance and service centers within the global economy. The largest of these cities have come to
be called variously global cities or mega-cities, and usually have 10 million or more inhabitants.

- **Between-country migration.** The same globalization dynamics that produce domestic migration can induce external migration. Job seeking is, again, the primary motivation for movement, although one can also identify other combinations of factors that lead people to move to another country to “seek a better life,” including the desire for political liberties.

These globalization dynamics account for most of the between-country migration. Many persons migrate in search of both jobs and new immigrant status. Over the past two decades this group has probably become a minority compared with those who migrate for temporary employment ranging from months to several years. Workers from the Philippines may account for the largest numbers of such migrants worldwide. It is estimated that in 2005 over 10 percent of the able workforce of the Philippines (8 million workers) is engaged in overseas migrant work and sending $11.6 billion (13.5% of Philippine GDP) annually in remittances back to the Philippines. (World Bank, 2005) Other notable examples of sizable temporary migration include both legal and illegal workers from Latin America to the United States. Since the end of the Cold War this type of migration from Eastern to Western Europe has also been sizable. Global remittances to the country of origin in 2004 rose to $232 billion. (World Bank, 2005)

Immigration law regulates this type of migration, but in many instances such as US border migration, illegal migration is extensive. One result of these migration patterns has been the recent creation of multi-ethnic populations in societies, for example, those in the Netherlands, France and other west European countries. Social tensions arising out of these ethnic distributions are leading to these countries developing more stringent immigration laws.

Immigration laws are being used to restrict certain groups from entry to other countries, at the same time that changes in such laws are being used to allow selective channels of immigration for individuals with particular skills and qualifications. The United States for example, privileges science and engineering as qualifications that bring individuals and their families preferred entry status. Concerns by some peoples and some groups about “brain drain”, incurred when one country bears the costs of educating and training individuals, but via emigration it sees other countries on the receiving end of a “brain gain”, the economic benefits to be gained by the immigration of well qualified people. Considerable consensus exists that this global movement of peoples, drain or gain, is here to stay, and is a major feature of contemporary globalization, especially when viewed through the circuits of service exchanges.
• **Migration stemming from civil disorder.** Wars and other forms of civil disorder often make it impossible for people to remain in their established regions. The resulting migrations are both domestic and external, but the usual pattern is migration to urban settlements. Along with war and civil disorder, disease or epidemics influence people to leave one place of settlement for another. All three of these migration causes are distributed across wide areas of Africa, throughout the former Yugoslavia, and to lesser degrees in some of the states of the former Soviet Union in Central Asia, throughout the Middle East (Iran, Iraq, Israel, Lebanon, etc.) and South and Southeast Asia (Timor, the Philippines, Thailand, India and Pakistan).

The linkages between globalization and civil disorder are complex, often involving efforts to establish particular economic advantage for one interest or another by the manipulation of internal tensions within weak states. Weak and failed states, most of which are located in Africa and Central Asia, are particularly prone to instabilities that can be exploited by external economic interests. These patterns are long-standing and were certainly a part of the globalization that characterized 19th century imperialism; they have persisted into the contemporary era of globalization and are a persistent contributor to the other complex causes that account for weak state behavior. (Sud, 2005)

• **State-induced migration.** Nation states may promote internal migration for various reasons, usually to extend economic activity to an area in which it is sparse or absent. Indonesia under the Suharto regime promoted state sponsored migration out of Java and Sumatra to lesser islands in the archipelago. During the Soviet period populations were moved from the western regions of the country to Siberia, some forcibly and some through state-sponsored inducements. China has utilized various inducements to spread populations from the dense provinces of the south and east to the west.

• **Migration stemming from political restructuring** was very much a characteristic of the post colonialism period following World War II. Sizeable populations left colonial countries in and around the periods of independence to migrate to colonial home countries. These migrations brought substantial ethnic populations into more homogeneous societies (for example, Algerians into France, and Indonesians into Holland), which have had considerable affect on the subsequent politics of these countries. Within the decades of contemporary globalization, such migrations have been less common, but have resulted from the conclusion to various revolutions and wars, for example, the Iranian revolution and the conclusion of the Vietnam War.

External populations can come to constitute *diasporas*, coherent collections of migrants living and interacting outside their home countries. These enclaves of ethnic and national groups are certainly nothing new—many different kinds of diaspora Chinese groups have existed throughout the world for the better part of
at least two centuries and account for the Chinatowns that are so much a part of cities all over the world. What is new are the ways in which they communicate among each other and with their home countries through the use of modern communication technologies, in many instances creating virtual communities through the Internet. Also novel is the political force they are able to generate in their countries of residence, especially when elections are open to them. Under the contemporary regime of global financial capital, diaspora populations have become important linkage communities between their countries of origin and the country of residence as well as a source of security concerns. (Bryen 2005) Some globalization scholars have gone so far as to propose legal links for the external community back to the country of origin, for example, by proposing representation for Diaspora communities within the legislatures of home countries.

Urbanization and hyper-urbanization:
The pace at which the world is urbanizing is truly astonishing. In the year 2000, for the first time in human history, we became an urban planet. More people live in cities than in rural areas, and this trend will continue. Moreover, we have more huge urban aggregates with more people living in them than at any time in history.

Some illustrative data supply a picture of the dimensions of urbanization. Fifty years ago, 30% of the world lived in urban settings; ten years ago that figure was 45%; today it is 50%; ten years from now, it will be 60%. In the year 2000, 2.8 billion people lived in cities, some 411 of which had populations over 1 million. Up to the latter part of the 20th Century, the majority of the world’s urban population lived in Europe and North America. In this century the largest share will accrue to cities in other continents, mainly Asia. By 2030, all things being equal, the world will have 5 billion people residing in cities—an increase of 2 billion over the 2002. (Davis, 2004)

Table 8.1 provides a listing of the world’s twenty largest cities, followed by Table 8.2, which lists the world’s twenty largest urban aggregates. Inspection of the two tables illustrates the point that the size of cities and urban aggregates can differ significantly. Determinations of size for both categories can also be somewhat arbitrary. Mike Davis, for example, argues that the kinds of estimates of urban sprawl that characterize Lagos, Nigeria overlook the fact that as a result of three decades of migration Lagos is really a node in a pattern of shanty town urban sprawl that effectively extends in a corridor stretching from Abidjan in the Ivory Coast to Ibadan in Nigeria that embraces nearly 70 million people.

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1 Industrialization accounted for very surprising jumps in the size of cities compared to the immediately preceding periods. London for example, by 1800 had become the largest single city in the world, but doubled in size over the next 50 years. (Proceedings of the Old Bailey, 2005)
### Table 8.1: Ranking of world’s largest cities

<table>
<thead>
<tr>
<th>Rank</th>
<th>City</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Shanghai</td>
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</tr>
<tr>
<td>2</td>
<td>Mumbai (Bombay)</td>
<td>12622500</td>
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<tr>
<td>3</td>
<td>Buenos Aires</td>
<td>11928400</td>
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<td>Sao Paulo</td>
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<td>Istanbul</td>
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<td>Lima</td>
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<td>15</td>
<td>Tokyo</td>
<td>8294200</td>
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<tr>
<td>16</td>
<td>New York</td>
<td>8091700</td>
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<tr>
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<td>Cairo</td>
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<td>London</td>
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<td>19</td>
<td>Tehran</td>
<td>7317200</td>
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<tr>
<td>20</td>
<td>Beijing</td>
<td>7209900</td>
</tr>
</tbody>
</table>

### Table 8.2: Ranking of world’s largest urban aggregates

<table>
<thead>
<tr>
<th>Rank</th>
<th>Urban Area</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tokyo</td>
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</tr>
<tr>
<td>2</td>
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<td>30107600</td>
</tr>
<tr>
<td>3</td>
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</tr>
<tr>
<td>4</td>
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</tr>
<tr>
<td>5</td>
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</tr>
<tr>
<td>6</td>
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</tr>
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<td>7</td>
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</tr>
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<tr>
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</tr>
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<tr>
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</tr>
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</tr>
<tr>
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</tr>
<tr>
<td></td>
<td>City</td>
<td>Population</td>
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</tr>
<tr>
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Source: The World Gazetteer

Urban scholars seeking to find suitable ways to characterize the many types of urban settlements emerging from globalization provide different, but useful, concepts to characterize them. The American urbanist, Saskia Sassen, views the mega cities as key nodes in the globalized economic circuits that define the global north and the global south. The cities of the global north dominate the finance and political circuits that are critical elements of global interaction. The dominant cities of the global north can be viewed as “top tier” cities. They include New York, London, Tokyo, Paris, and Frankfurt. Sassen finds a next tier composed of many other US and European business and financial centers, e.g. Chicago, Los Angeles, Zurich, Amsterdam, Hong Kong, Boston, Milan, Toronto, and Sydney. (Sydney is geographically part of the hemispheric south, but part of the global north.) In the next tier Sassen included a growing number of global south cities that have come to function as key articulators between the global economy and the global south. This tier includes Mexico City, Sao Paulo, Seoul, Taipei, Bangkok, Manila, Shanghai, and Singapore. In Sassen’s view, it is this network of cities that accounts for the vast proportion of global finance and trade. (Sassen, 2004)

Another way to classify cities is simply by size, and irrespective of function. Some large cities are classed as mega cities, meaning those with populations greater than 8 million. As Table 8.1 indicates, one can find at least 15- 20 such cities in the world. Within this general classification one can then catalogue hyper cities, those with populations greater than 20 million, such as Tokyo, or those cities growing rapidly from mega cities to hyper cities, such as Jakarta, Dhaka, Karachi, Mexico City and Los Angeles. Yet another perspective is to examine massive regional settlements greater than 30 million—cities such as Mumbai and Shanghai. Beyond these in size are yet larger aggregates imperfectly measured. At the least these include the emerging urban-industrial megapoloises in the Pearl River corridor (Hong Kong-Guangzhou), the Yangtze River (Shanghai and environs), and the Beijing-Tainjin corridor. These are joining older settlement megapoloises comparable to Tokyo-Osaka, the lower Rhine valley, and the New York-Philadelphia corridor (which is soon growing into the Washington-Baltimore-Philadelphia-New York-Boston conurbation.)

Yet other concepts are being employed to characterize the new geographies of globalized urbanization. Some geographers use the language of truly mega structures that encompass several countries, such as the set of emergent urban corridors running from Korea to West Java, including Japan and eastern China.
In this view Shanghai would emerge as a world city comparable to Tokyo, New York or London as a control node for its region and circuits in the global economy. Several cities of this magnitude may come to constitute the new mega structures, continuous urban corridors from Japan/North Korea to West Java. (Davis, 2005)

Beneath this tier of globally integrated cities are those that are emerging in global public consciousness. Nowhere is this process more advanced than in China. The rapidity of urbanization in China may be hinted at by the fact that the number of official cities grew from 193 in 1978 to 666 in 2005. Eleven of these cities are over two million in population. Twenty-three cities have populations between 1 million and 2 million. Forty-four cities have populations that range between 500,000 and 1 million. One hundred and fifty nine cities range between 200,000 and 500,000 and three hundred ninety three cities are less than 200,000. (China Today, 2005)

Urbanization in Africa, with a smaller population base has been almost as rapid. Lagos, for example, grew from a population of 300,000 in 1950 to in excess of 10 million in 2004. Cities that are new to international audiences such as Ouagadougou in Burkina Faso or Douala in Cameroon are larger than much better known cities such as San Francisco or Manchester. In Latin America the better known older cities of colonial origin are being matched by new and little known cities of almost comparable size, such as Tijuana (Mexico), Curitiba (Brazil), Temuco (Chile), Salvador (El Salvador), and Belem (Brazil).

If the general course of economic globalization holds for the next ten to fifteen years, this pattern of migration feeding urbanization will continue, being itself sustained by population growth. As we will discuss in our chapter on food sufficiency, rural areas in the world are being stressed by environmental degradation, increased desertification, and the short-run destruction of marginal lands, all of which reduce the carrying capacity of these areas, limiting the amount of increased population they can absorb. The result is that by 2015 rural capacity will be reached and all new net population growth will occur in urban settings. (Davis, 2005) It is patently clear that a globalized world is one of irreversible and increasing urbanization.

**Urbanization and governance**

The primary question to ask of cities when they grow so incredibly large, or so rapidly, is how they are governed. By this one means, how does the fact of population size or rapidity of growth affect the way that the primary means of urban order can be established and maintained? Minimal urban governance in the contemporary period would usually include such things as the provision of adequate water and sanitation, electrical power, accessible health care facilities, basic education, minimally suitable housing, and a police presence suitable for maintaining basic order. On top of these things would be a whole range of factors
that might improve the *livability* of cities, such as provision for civic spaces within which public activity might go on.

As the UN report on Slums makes clear, countries throughout the world are failing this test, as the most miserable of poverty occurs in the new slums being formed by rapid urban growth (UN HABITAT, 2003). As other UN reports specifically on water and sanitation adequacy add, the situation is not being improved in recent years. (WHO/UNICEF, 2005) World Bank and IMF sponsored efforts to induce private sector solutions to urban water problems often result in abject failure while raising the real costs the urban poor need to pay for water. Further, and especially throughout Asia, national governments have been reluctant and remiss in delegating either the authority or the means to deal with the demands of rapidly growing urban populations. Within urban centers, especially those defined by extreme poverty, governance issues are central as they affect such essential issues as the privatization of water supplies.

The absence of effective local government authority within these hyper-growth urban areas leads to a situation where many of the activities that take place within them are untouched by regulatory authority. Informal or “grey economies,” those that are unregulated, grow in such conditions and do not contribute to governmental tax revenues, contributing still another deficit to local governments seeking to meet already overwhelming demand. (Wikipedia, 2006) The picture of dysfunction is completed by the flourishing of corruption that undermines government authority, and national government economic policies that shift the burdens for providing social services onto the local level.\(^2\) We return to this subject of governance in our chapter on the state within the regime of contemporary globalization.

**Inequality**

We have already discussed inequality in various ways throughout this text. The reason is obvious: continued and growing inequality is perhaps the most difficult predicament associated with globalization. It is a situation that won’t go away, and doing something effective to address it leads to significant divisions among all of those implicated in globalization activity.

For those at the core of fashioning and implementing globalization strategies, the decades of the 1970’s and 1980’s were to be the decades of development led by key supra-national non-governmental organizations such as the World Bank, the International Monetary Fund, and the regional development banks (e.g. Asian Development Bank, Latin American Development Bank). It seemed that the pathways to development were clear: the international community through its combination of NGOs and those of important donor nations, would supply

\[^2\] The most systematic work on corruption has been done by Transparency International, accessible through its website: [http://www.transparency.org/](http://www.transparency.org/)
significant amounts of capital, most of it for economic infrastructure – roads, harbors, communications. Combined with very large amounts of additional capital flowing into developing countries from private bank loans and from foreign direct investment, critical investment mass would lead rapidly toward economic growth. As if they were in the mirror image of the developed industrial nations, it was assumed that “third world” nations would become the developing world; their gross domestic products would rise as would per capita income. With increased purchasing power, billions of new consumers would be drawn into global markets—at the extremes, millions of rural poor outside the global system of cash economies, still operating at subsistence levels—would become participants in the broader global system. Overall, global economic growth would be triggered to new levels.

Several things went wrong with this scenario, and once again, what one chooses to emphasize depends a great deal on whether one looks through the progress lens or the disaster lens of globalization, or whether one looks at aggregate economic growth or its patterns of distribution. What is clear, as indicated above, is that after thirty years of these development experiences, some countries of the world are much better off, and some are worse off. Compared with thirty years ago, a significant number of countries are wealthier, some very much so. The original four Tigers of Asia—Singapore, Taiwan, Korea, and Hong Kong, became model globalized economies, constituting important nodes for production, transmission, consumption and finance. Several Latin American countries were able to move beyond military governments and various economic crises while developing competitive market societies—most particularly, Brazil, Chile and Ecuador, with lesser successes in Peru and Venezuela. Some countries of the Middle East displayed impressive overall economic growth such as Jordan, Lebanon, Saudi Arabia, Iran and the gulf states, despite complex and unsettled regional politics and allowing for the fact that much of their growth was highly dependent on oil exports.

But other parts of the world have struggled. The collapse of the Soviet Union and the transition in the various countries previously associated with it have brought about the existence of market-oriented societies, but in forms that are severely compromised. In many of these societies a combination of corruption, perversion of democratic political processes, civil unrest and other difficulties associated with the transition from state-centered to market societies have produced significant declines in individual income, the support of state welfare services, civil order, health and well-being. Serious income disparities with growing numbers of poor have occurred in 33 countries that represent 20% of the world’s population. (EarthPolicy, 2005) These have been societies in negative development, struggling to return to the levels they obtained during the late Soviet period.

Throughout Latin America, successes have been matched by more problematic cases. Bolivia continues to struggle to achieve a coherent pathway to
development. Argentina has been the site of radical political shifts, unsupportable debt, economic currency crises, and very problematic efforts to privatize important aspects of the economy and society, from banking to the provision of water. (Bosman, 2006) Central America and Mexico have been the sites of civil unrest associated with issues of social equity, privatization, and significant parts of the population realizing that even a modest standard of living has become nearly impossible. These faltering economies have generated millions of economic migrants to the United States, many of them as undocumented migrants, which currently leaves them filling the lower job rungs of the American economy.

Throughout Asia, the picture is dramatically mixed. One can point to spectacular examples of successful development, including the largest economies in the region—India and China. Japan, as we know, after three decades of impressive development that re-established it as one of the leading economies of the world, has suffered through over 15 years of stagnant economic growth, but recently rebounded with a modest 2.5% growth in GDP and still ranks as the second largest national economy in the world. Korea rose spectacularly as an economic power and successfully weathered most of the effects of the 1997-8 Asia currency crisis, but internally Koreans perceive their struggle to maintain pace with the competitive nature of the global economy to be close to overwhelming. Malaysia and Thailand have become modern societies during this period, very much integrated into the global system.

Indonesia and the Philippines are more complex stories, both featuring the persistence and eventual collapse of authoritarian regimes. Each has failed to return to developmental “peaks” gained either before the fall of the regime, or to recover fully from the devastating losses incurred in the Asian currency crisis, which probably had its most profound effects on Indonesia. Viet Nam is emerging as a country with a strong state-directed economy. Laos is a weaker development case and remains a very poor country. Mongolia is a fragile democracy with very low levels of economic development. Pakistan, Bangladesh, and Sri Lanka are countries still struggling to gain economic coherence. Cambodia, Myanmar, and North Korea are complex autocracies with struggling economies, approaching implosion. Throughout these economies of Asia, Japan and the Tigers excluded (and Hong Kong, of course, must now be excluded from this generalization after its return to China), development efforts and successes continue to be characterized by very uneven results. Inequality in the form of growing numbers of poor has continued to grow and in many instances is fueled by continued population growth that absorbs increments of economic growth.

The most spectacular development failures, however, have been in Africa, where an insidious combination of restructuring, soaring debt, corruption, disruptive post-colonial transition, unsuccessful privatization, civil unrest, war, genocide, disease, drought, crop failure, and rural collapse have left the continent reeling economically, socially, and politically. In every direction, seemingly, one finds
evidence of multiple factors having undermined development, and as a result soaring inequality as those within successful development pockets succeed economically, while those outside suffer a seemingly downward spiral.

The UN Human Development report for 2005 summarizes these data in various ways.

1) By 2015, if current trends hold, 827 million people will live in extreme poverty.
2) 50 countries currently fall behind on at least one Millenium Development Goal (MDG)
3) An additional 65 countries risk falling behind target on at least one MDG by 2040.
4) For 18 countries, the current status on the UN’s Human Development Index (HDI) is lower than it was in 1990. Twelve of these countries are in Africa—the other six are in Soviet Union countries, members of the Commonwealth of Independent States. (CIS)
5) The countries at the very bottom of the Human Development Index are all in Africa. (UN Human Development Report 2005)

Higher education is but one example of these serious social and cultural difficulties. For societies to succeed in the knowledge-based global economy they must be capable of investing in and sustaining effective institutions of higher education (and it should be added, the system of basic education that feeds higher education.) But universities, research institutes and private corporations throughout the continent\(^3\) lack educated personnel having lost them to a combination of social unrest (for example the purge of Uganda’s universities by the dictator Idi Amin,) out-migration, and disease. Review of Table 7-2 reminds us of the shockingly low life expectancy of sub-Sahara countries. These countries find themselves needing to spend ever-greater amounts of social and financial capital rebuilding their inteligencia and knowledge bases, even while the forces leading toward demise continue relatively unabated.\(^4\)

A classic measure of inequality, life expectancy, reproduced in the previous chapter in Tables 7.1-7.3 associates development with the basic life choices

\(^{3}\) All such generalizations have important exceptions. Most of the higher education deficit is in sub-Saharan Africa. Egypt, by contrast, has an enormous system of higher education. The University of Cairo alone enrolled 185 thousand students in 1999. South Africa has rebuilt and extended its system of higher education since the downfall of apartheid. Zimbabwe shows the effects of significant higher education investments in the colonial and immediate post-colonial periods, etc. (Said, 2005)

\(^{4}\) A 2002 report on PHD programs in African Universities reports that outside South Africa, efforts to create and sustain PhD programs is spotty with relatively small numbers of PhD graduates produced during the period 1995-2001, although individual university data suggest that production has increased in recent years. (Szanton and Manyika, 2002)
people throughout the world are presented as they seek to survive. Any number of versions of this story of inequality can be presented. Mulrooney and Neubauer, for example, focus on both the absolute and relative levels of inequality, the latter being represented by the degree to which conditions of inequality are increasing or decreasing:

“The well known relationship between poverty and increased ill-health and death is evident in the mortality statistics. In 1990 the life expectancy at birth for sub-Saharan Africa was 52 years and the median age of death was 5 years [of age] (World Bank 1993: 200). In 2000 life expectancy at birth in this region had decreased to 48.7 years (United Nations Development Programme 2002: 152) and by 2002 it had further shortened to 46.3 years (United Nations Development Programme 2004: 142). South Africa and Zimbabwe both had a life expectancy at birth in 1990 of 62 years but these plummeted to 48.8 and 33.9 years respectively in 2002. (World Bank 1993: 200; United Nations Development Programme 2004: 141)

There is now almost a fifty-year difference between the country with the highest life expectancy at birth, Japan at 81.5 years, and the lowest, Zambia at 32.7 years (United Nations Development Programme 2004: 139, 142). Of the estimated 10.8 million children under 5 years of age who died globally in 2000, 41% of these child deaths occurred in sub-Saharan Africa. Disparities in child mortality between the global North and South are large and increasing. There was a 20-fold difference in 1990 between the 180 deaths per 1,000 live births in sub-Saharan Africa compared with only 9 deaths per 1,000 live births in the industrialized countries. This gap increased to a 29-fold difference in 2000 with mortality rates in sub-Saharan Africa of 175 deaths per 1,000 live births and 6 deaths per 1000 live births in the industrialized countries (Black, Morris, and Bryce 2003: 2226; Mulrooney and Neubauer, 2005)

Extensive research indicates that over the past three decades the global distribution of wealth is moving consistently in the direction of greater inequality. Expressed in terms of the literature, income inequality is increasing within countries and between countries: the social distance between the rich and the poor is increasing at all levels, even as globalization continues to improve overall global wealth. Astonishingly, this distance between rich and poor holds for advanced economic countries, developing countries, and those that are failing to develop. Consequently we have framed this continuing pattern of increasing inequality as a predicament. The more the world pursues the current policies and practices associated with economic and political development, the more this relationship will persist.

The UN Development Report for 2005 is unambiguous about this situation. In its estimation, the starkness of this situation is illustrated by the fact that the 50
richest individuals in the world have a combined income greater than the poorest 415 million. Forty percent of the world’s population receives only 5% of global income, while 54% of global income goes to the richest 10% of the world’s population.

The report concludes:

“...the problem is not just one of inequality between countries... in the last 20 years the unequal distribution of income... within many countries has grown worse. Of the 73 countries for which figures are available, 53 (comparing over 80% of the world’s population) have recorded an increase in inequality of distribution. Only 9 countries (comprising about 4% of the world’s population) has the wealth gap between the rich and poor been at all reduced. Differences are especially great within Nambia, Brazil, South Africa, Chile and Zimbabwe. Even in countries with high economic growth rates, social disparities remain large. In China, for example, the HDI in the western province of Guizhau stands at 0.64, only just higher than the level in Nambia, while that in Shanghai is 0.89—roughly the same as Portugal’s. (Martens, 2005.)

The facts of growing inequality may be in dispute in terms of how inequality is measured, and how it affects the daily lives of people in specific locales, but the overall fact of persistently growing inequality is not. The World Bank, the International Monetary Fund, the United Nations, and most large NGOs concerned with the issue agree. They do not agree on how to address the issue.

Critics of the policies of the IMF describe its requirements for so-called structural adjustment as primary causes for the growth of inequality in struggling nations. When these policies were being most aggressively pursued in the 1980’s and early to mid-1990s, the IMF drew them from a very crude version of neoliberalism. Failed development, especially in Africa and Latin America, was seen as the result of state dominated societies that had promoted the growth of corruption, failed to produce minimal social order, and buried these societies in oceans of debt, most of it loans from private banks in the global north. These situations, it was argued, could be cured only by a set of structural adjustment policies and actions that would not just tinker with elements of national policy, but fundamentally shift the locus of policy from the state to the private sector. The IMF emphasized the need for debtor countries to adopt austerity measures, for example, lower health care funding, in order to repay debts. These essential conditions were required for the International Monetary Fund to renegotiate the loan obligations of financially desperate countries.

In retrospect structural adjustment policies, especially in Africa, have simply made the situation worse. The reorganization of the political and economic sectors of struggling societies to permit larger amounts of private investment have for the most part failed to create stable patterns of wealth development.
And, the requirements of repaying the enormous loan obligations during the period of the "debt trap" have created a steady shift of resources away from the basic needs of the people in the developing world and toward the developed lender countries.

Looking once more at the education sector as a critical area for national investment, Szanton and Manyika detail how structural adjustment policies impacted tertiary education in Africa during the period following a 1980 World Bank report suggesting that the social returns on investment for primary and secondary education were higher than those for tertiary education, a recommendation the Bank and the IMF pressed in their structural adjustment agreements, leading to cutbacks in national government support:

“As a consequence, for the following 12 to 20 years, depending on the country, working conditions deteriorated dramatically. University faculty salaries remained flat or declined, research funding dried up, faculty could not maintain memberships in professional organizations or attend international conference, university libraries stopped purchasing books and journals, physical facilities (classrooms, laboratories, student hostels, etc.) crumbled, and new building was terminated. For the same reasons, student scholarships and both local and overseas development funds were largely eliminated, pensions declined and became uncertain. New faculty hiring was curtailed, in some cases halted for many years, often producing a generation gap and aging faculty. All this also occurred in a period of nearly universal ‘massification’ of the universities in which tertiary enrollments in sub-Saharan Africa rose nearly six-fold from some 350,000 in 1975 to nearly 1,700,000 in 19995, vastly over-stretching faculty, and university resources. (Szanton and Manyika, 2002, p. 2)

In a perverse outcome of how structural adjustment was meant to assist developing countries, Stephen Lewis has termed such efforts as a “mathematics conceived by Dr. Strangelove” (Manthorpe 2005). Between 1970 and 2002 the African continent as a whole borrowed $540 billion, paid back $550 billion and still owes $295 billion (UNCTAD 2004: 19). African nations pay $1.51 in debt service for every $1 received in aid. Poor debtor nations pay $100 (US) million a day to richer nations in debt service (BBC World Service, April 11, 2005). All African countries are paying more on debt service than on health care—average annual spending per person on debt service is $14 per person while the average spending on health is less than $5 per person (Jubilee USA Network 2005).

The efforts undertaken by the initiative of Prime Minister Tony Blair in 2005 to create significant debt relief in Africa, have produced commitments from many of the advanced economies to relieve billions of dollars in debt while increasing aid
to developing countries to the level of 0.7% of GDP. (BBC, 2005) These efforts can be seen as a retreat from the crude neoliberalism of previous decades and the beginning of a search for an approach to global development that takes greater responsibility for the lack of equity throughout the world and the need for the advanced countries to act forcefully and realistically to combat it. Increasingly the advanced economic countries are coming to understand that their continued “extraction” of excessive value from the poorer countries is having affects that ripple throughout the world with devastating consequences. Recent commitments to address avian flu as just this kind of situation is illustrative of the realization growing global interdependence involves complex questions of human security. For example, with the avian flu posing the potential for a pandemic beginning in poorer countries, the wealthy nations of the world will serve their self-interest and uninterrupted global trade by providing these nations with the public health assistance and resources needed to forestall a pandemic. Such efforts are in large part motivated by an increased awareness throughout the world that profound and growing inequality constitutes a major problem—perhaps the major problem—in seeking to create and maintain human security throughout the globe. Work on “failed states” makes it apparent that weak and failing states are unable to create and maintain the basic conditions to sustain life at minimal and acceptable levels. In such situations, people have little incentive to support existing governmental structures, leaving these systems all too vulnerable to fragmentation, civil unrest, and the efforts of sub-national groups to establish some form of autocratic control. (Sud, 2005) These situations act as downward spirals of civil disorder chasing economic failure to the overall disadvantage of the societies involved.

Increasingly, thoughtful people are coming to realize that the current situation is unsustainable, and that its persistence poses a threat to the whole of humankind, through the spread of disease linked to growing poverty, through growing episodes and structures of terrorism, and through the undermining of the basic financial and fiscal structures on which contemporary globalization is built.

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The current UK plan is contained in a key speech made by Mr. Brown, the Chancellor of the Exchequer in June 2005. Its key components include: 100% debt relief to pay for education and health; Launch International Finance Facility for Immunization; Large increase in direct development aid, doubling of aid from European countries; Removal of export subsidies and all trade-distorting support to agriculture, which work against producers in the developing world. (BBC, 2005)
References:


Useful websites
Shifting From Natural Toward Mediated Information

From the beginnings of the printing press to the newspaper, the telegraph, typewriter, telephone, movies, the radio, television and on to the latest forms of digital information technology, global information has multiplied exponentially. As it has, humans have subtly moved away from first-hand or face-to-face human experience as their common form of information, and have substituted for it forms shaped principally by those who collect, shape, and distribute information as some part of commerce. This shift from information as first-hand experience to mediated information – information largely shaped in words, pictures, and sounds at a distance by those unknown to us -- holds multiple implications for the identities, cultures, and commerce that we presently accept as the human experience. In remote places such as the Tibetan plateau or the highlands of Papua New Guinea media have yet to replace first-hand or primary information exchange, for in these places the world of face to face communication supplies what traditionally has passed for information. For most of the world’s population, however, predigested, mediated information shaped for commercial or ideological purposes plays a significant role in influencing what people learn, know, and use as the information on which to live their lives. Mediated information and the technologies that carry it have become the principal epistemology or way of knowing through which many of us perceive and understand the world. This reliance on third parties to supply from around the globe what we take as true or false, and what we use to make our decisions has become a dominant and accepted feature of globalization and life in contemporary societies.

Mediated information via IT (Information Technologies) has become the sea in which much of the world swims. Consider a few of the multitude of forms that information takes:

- Television, live and recorded, plus broadcast, cable, and satellite distribution;
- Radio, live and recorded, broadcast, cable, and satellite distribution;
- Music, live and recorded, and the instruments and devices which play it, from violins and horns to CDs, DVDs, and Ipods;
- Two and three dimensional art forms;
- Dramatic and documentary films and videotapes;
o Internet sources of every imaginable content and kind, from search engines, news, Powerpoint presentations, blogs and now vlogs (video logs), to markets such as ebay, historic records, and interactive online games;

o Local area networks that range from a few people to thousands distributed across far-flung global corporations;

o Networks of all forms that range from linking a few people of common interests to the vast and growing networks created by commercial search engines;

o Books, magazines, newspapers, and all forms of print on paper or on other technologies;

o DNA, genome mapping, stem cell experiments, and forms of human nerve tissue adapted as computer memory --biochips;

o Photography and artificially constructed computer images;

o Wireless networks, including WiMax spanning entire cities;

o Advertising in all its distributional forms, including direct mail and e-commerce;

o Clothes imbedded with visible text and messages;

o Telephones, telephone cable systems, Internet telephone service, microwave relay systems, faxes, voice messages, and text messages;

o Recorded and online interactive educational presentations, simulations, case studies, and games;

o Locater chips with global GIS technology;

o Government propaganda, news releases, and regulations;

o Distance education of all kinds from physics to business administration, tele-medicine and tele-health including surgery at a distance;

o Commercial surveillance of individuals, groups, corporations, and organizations by means of sound and video, individual consumer preference data, and government surveillance, including satellite photography;

o Espionage and warfare reports;
o Classified and secret government and business information;

o Computer operating systems, languages, software, applications, games, hard drives, CDs, and DVDs;

o A global network of fiber-optic cables and relays;

o Commercial transactions, barcodes, investment data, banking records, and sales agreements;

o Money and securities markets;

o Microwave towers and satellites carrying phone, photographic, television, and computer information;

o Medical technologies and imaging such as sonograms, EKGs, EEGs, X-rays, CT Scans, MRI’s, and laproscopic video cameras and recorders and individual medical records;

o Microdots painted onto machine parts with identification data;

o Interactive information labels;

o Programmable specialty computer and technology chips for one-of-a-kind devices and innovations;

o Fabrics and materials with embedded nanotechnology information;

o Nanotechnologies with information-gathering capabilities;

And so on, as innovations continue to revolutionize the media both shaping and conveying the information. The reader is encouraged to add to this list based on his/her own experiences. Estimates indicate that information is multiplying exponentially, making its effective organization and use increasingly a major global issue both commercially and personally and producing staggering implications for how education should take place to render it appropriate for dealing with the information explosion.

Information, and the technologies that structure and convey it, have become so pervasive in our environment that we fail much of the time even to recognize their ubiquitous presence. Because it has a staggering power to sway people and move them to belief, action, or inaction, mediated information in its hundreds of forms – the latest news on CNN, the music playing from a CD, the latest stock market quotation, containerized shipments being tracked by GIS and coded information -- has become the catalyst of globalization.
Inevitably contemporary IT in its many forms influences global behaviors, identities, cultures, and in particular, the ways in which global commerce occurs. IT presently allows $1.9 trillion in daily global currency trading. IT allows job seekers and employers to find one another online. Software and computer applications allow people to collaborate in everything from architectural and industrial design to medical treatment, news reporting, inventory control, and the assembly of manufactured goods. The just-in-time shipment of parts for production, the burgeoning global service economy, and even formal education now in many places rely on online interactive sources of information, some involving hundreds of thousands of people. Given that information increases so rapidly, learning to navigate this expanding sea of information effectively has become an ever more important skill required for entry into the labor force and many forms of work. No previous generation of humanity has faced the opportunities and dilemmas that the growth of global information now presents.

**Media, Information, and Markets**

Information has always been an essential part of how markets function, but in contemporary global commerce, media and information have begun to shift the nature of markets themselves. In a world generating some $56 trillion in aggregated annual gross domestic product, global e-commerce presently registers at $2.7 trillion annually and is expected to reach $9 trillion by 2010. In the world of business online, 95% of the e-commerce is conducted business to business (B2B), with 5% business to consumer (B2C). Clearly for global businesses, high speed, accurate information is the lubricant that makes global trade possible.

Global information systems are turning local markets into global markets, allowing small local businesses to reach buyers around the world. Via websites, online advertising, and search engines, businesses have new and more effective ways of finding and dealing with suppliers and service providers. On the other hand, using the Internet consumers have acquired growing power to search the globe instead of only local markets for products, services, quality, and prices. With IT affording consumers this new measure of power, competition among sellers intensifies, and the balance in markets shifts progressively toward buyers. Add to the picture relatively inexpensive oil that makes possible low cost shipping, and rising local markets take on global significance.

An ancillary form of advertising information, direct mail, uses the traditional mail and newer delivery services in the U.S. to create a huge market with a wide range of products and services, generating an extraordinary $1 trillion in sales annually, but direct mail carries major externalization costs – $326 million

\[\text{\textsuperscript{1}}\text{Indira Gandhi National Open University has over 600,000 students. India currently supports 11 national open universities. (IGNOU, 2005)}\]
annually in trash disposal, unmeasured transportation costs, and paper demands that require consuming a reported 100 million trees a year. (NPR, 2005)

The success of the worldwide auction service eBay indicates that individual buyers can now also become effective sellers, and that markets can extend to goods of every imaginable kind. eBay is a market like none other in history, for it sells everything, yet it operates simultaneously as a form of social capital, and an electronic meeting place for people. In its ten years of existence, it has become a market for new and used collectables, parts for various technologies, cars, boats, cameras, jewelry, sporting goods, musical instruments, toys, tickets to events, travel arrangements, one-of-a-kind items, as well as a source of educational workshops, community announcements, and group networking. As such it combines personal responses between buyers and sellers with information about the price, quality and availability of every conceivable form of article or service. Manufacturers can check eBay to see what kind of aftermarket their goods have. This huge global market is possible only because the Internet allows buyers and sellers to communicate instantly from anywhere in the globe.

As a consequence of high speed interactive media and global communications systems, we see new markets emerging, markets experiencing rapid, unexpected shifts, and market information becoming a highly valued commodity. Another example of a totally new market is that created by the search engine company Google to market ads to potential users, a market that has gone from almost nothing to over $6 billion in four years. The purchase of YouTube by Google for $1.65 billion in October 2006 is just another example of new technology and media ideas emerging in very short periods of time to develop new markets and value. (Google, 2006.)

The massive amount of information generated by credit histories, the use of credit cards, consumer retail cards, barcodes on goods, and medical information has allowed data companies to develop data bases of information about individual consumers, their buying habits and marketplace preferences. Hospitals now routinely have full patient histories available on their local networks, easing access for health care providers but raising security questions about patient privacy. With online sales requiring payment, and online banking a widely used feature of retail banking, security in online information transactions presents an ongoing problem. Moreover, credit histories, like medical histories, have in some cases become accessible online, and in a series of alarming computer thefts, tens of thousands of credit histories and other consumer information have been stolen by hackers. Similar break-ins have occurred at military and industrial information bases. And hackers sending global viruses have cost information systems worldwide millions of dollars in IT repair and protection. Aberrations in the information market reveal its vulnerability to criminal invasion and uses, and its difficulty in protecting information sources. Beyond these data base break-ins and organized credit card thefts, identity theft has become a very real issue in industrial societies. Data theft by employees, especially those leaving a
company, has become a major issue for industry in the past several years. (BBC, 2004) People are beginning to realize that these events are not anomalies that occur once in a while, but events that occur within the complexity of the global information system with a predictable statistical regularity. Consequently, protecting information has become a growing industry in itself. In the larger picture, we now see a global struggle by major businesses to keep up with the ongoing information revolutions that IT creates, as well as with the threats to information sources. (Note the relevance here for the cycles of diffusion discussed above in which an innovation triggers a set of subsequent processes, which in turn trigger reactions and counter-reactions. When these cycles are readily commodified, as they are within the IT industry, new sub-industries rapidly grow up around them. See Castells, 1996) Over the past several years the United States government has experienced several incidents in which lap tops have gone missing with valuable—sometimes classified—information, and/or jump drives (memory sticks) have been used to removed classified information from government sites, including nuclear laboratories. The implications of these security issues for nuclear proliferation are obvious. (Barry and Hosenball, 2006)

Information Biases

Where once it was easy to distinguish between the source creating the information, the medium by which it would be conveyed, and the uses to which it might be put, the contemporary world of globalized IT now blurs these traditional lines. In the case of computers, the software that structures and conveys digital information is itself a form of meta-information that frames what and how the information will be shaped and received. As such, the combination of technology and information (IT) has implicit biases in what is included or omitted, and in the amounts and shapes of information it presents. Some such information obviously has more objectivity and balance, and less bias than other forms of it. Nonetheless, whether it is a textbook, an advertisement, a shipping manifest, a government announcement, or a design for a new factory, those shaping information seek to control how users will see it, that is, persuade them of their attitudes about what matters and what does not.

Not unexpectedly, competition to control information has become a major feature of the tightly held global media oligopoly, as control means framing how buyers will see products and services, and how media giants can advance not just their market share, but persuade media users to embrace the gospel of globalization. Moreover, many of the major information providers of news now shape what the public receives in order to serve their commercial and political agendas, that is, global media dominance by an oligopoly means that the information created and distributed will have as its underlying goal serving the purposes of business. Objectivity and truth have been at risk since Gutenberg’s time, but contemporary media and information, with notable exceptions, tend to promote the value of commerce, sales, and markets above all else, including the value of human rights.
Because tightly controlled information has also traditionally been a feature of autocratic governments, we see many countries struggling vainly to control the advances of cell phones, satellite television, Internet blogs, and other forms of unchecked information carried via a mix of media as a means of effective political control over their populations.

Examples of government attempts to control information and media abound even in countries where freedom of speech and press are held to be essential elements of their political culture. U.S. President George Bush spoke with certainty about Saddam Hussein having "weapons of mass destruction" as a cause for the U.S. going to war with Iraq. Global media carried his message, yet later these same information sources carried word that searches showed no such weapons existed. The free press later revealed that the U.S. president had been informed early on by American intelligence services that any such information about Iraq had not been substantiated by fact. The United States, however, by then had gone to war based on government-sponsored misinformation. (Woodward, 2006) While the U.S. celebrates being an open society with unfettered media and news, the government banned news photos of the coffins returning its war dead from Iraq. More recently, the New York Times revealed that the president of the United States had issued a secret order to have the National Security Agency secretly eavesdrop on American citizens without the required legal approval of courts established to deal with just such situations. Other U.S. government attempts to operate outside the law and muzzle negative news about government operations date back to the Iran-Contra scandal in the mid-1980’s and to federal officials seeking to suppress the release of the Pentagon Papers revealing government misinformation during the Vietnam War. Citizens in free societies look to an unfettered press to protect them from government control of information, but governments regularly find reasons to limit what the public knows, and with the press controlled by commercial owners who often see government press limitations as an unnecessary risk to profits, open or transparent government is always at risk.  

Similar efforts to control the news have been evident in China in 2005, including initial efforts by local authorities to cover up the spill of hazardous benzene at Harbin. During the outbreak of the initial SARS epidemic in the summer of 2003, the Chinese government found ways to refuse cooperation with the World Health Organization while seeking to keep information from reaching the world outside

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2 A recent review of these episodes reveals another aspect of government bias of the news, created out of the current style of news reporters and analysts to curry favor with government leaders to gain information for their publications. In a subtle process, the giver of the information comes to control behavioral aspects of the gatherer of the information. This dynamic was uncovered recently in the celebrated case of the American Vice President’s chief deputy “Scooter Libby” and that of the New York Times, which withheld information on President Bush’s secret memo for a year. Reporters come to fear offending sources lest they be denied further access. The result is yet another fetter on the supposedly unfettered press.
China. Interestingly enough, it was through newspaper reports in neighboring countries that the WHO authorities in Manila learned of the outbreak in southern China.

Another illustration of this dynamic occurred in December of 2005 in China when a group of protesters in the village of Dongzhou in Guangdong province of China made news around the world as some twenty townspeople protesting farmland taken for a new electrical plant were reported shot dead by authorities. With China as a new member of the WTO, and the Olympics scheduled next in China, news media worldwide carried the story, but the Chinese government reported that only three protesters had died and that the police had fired in self-defense. Subsequent reports quoting villagers claimed that the Chinese government had threatened villagers if they attempted to tell authorities that family members had been shot. As reporting from Dongzhou continued worldwide, a group of prominent Chinese dissidents in an open letter on the Internet called on the Chinese government for a full scale investigation. The Chinese government story discounted comparisons with the Tiananmen Square riots and deaths in 1989. *The Washington Post* reported that, “Almost all of China’s state-censored newspapers and other news outlets have been silent on the clash, which arose from a long-simmering dispute over the confiscation of farmland.” (Pan, 2005) Lying by governments, another disinformation strategy, is as old as government itself as Hannah Arendt remarked in the late 1960’s in the midst of the U.S. Viet-Nam crisis. ³

Clearly the advent of cell phones, the Internet, satellite telephone, faxes, television, and a variety of other media, plus international news reporting and the presence internationally of those involved in global trade combine to make it difficult or next to impossible for governments to effectively suppress coverage of negative news. Nonetheless, regimes the world over continue to use disinformation and propaganda on their own people as a means of control, and some of the disinformation becomes part of the information flow in globalization, affecting everything from foreign direct investment to sales of goods to currency values.

The increasingly commercial or ideological nature of IT, then, leaves many of those supplying it in the role of propagandizers or advertisers, even if what they hope to sell is only an idea or a viewpoint or the goods for which the “news” involved is only a pretext. Simultaneously, those relying on IT subtly are at the mercy of the implicit and conscious biases in the media through which they receive their information, and need rightly to be able to sort through these biases or the exploitative intent of what is presented to them. News media through these

³ “Secrecy—what diplomatically is called “discretion,” as well as the arcane imperii, the mysteries of government—and deception, the deliberate falsehood and the outright lie used as legitimate means to achieve political ends, have been with us since the beginning of recorded history.” Cited in Neubauer, 1977.
mechanisms become the willing disseminators of political biases. For example, consider all major U.S. TV networks playing the tape by Osama Bin Laden following the attacks on the World Trade Center, a propaganda coup worth many millions of dollars. Or consider how these networks carried the political advertisements criticizing his war record leveled against presidential candidate John Kerry as though it were news in the 2004 U.S. election. Because sensational news brings more heads to the TV set or the newsstand, and hence sells more advertising, the dominant television media and newspapers hold huge power to control the direction of everything from elections to revolutions. Ironically the rise of blogs, independent online editorial sources, has arrived to supply more individual expression and balance to the marketplace of political information creating a situation in which the very plurality of sources raises critical questions about the veracity—truth value—of the information being disseminated.

As it has in other industries, the IT market concentrates into the hands of fewer and fewer large TNC's, limiting the major avenues by which most information reaches audiences. As we mentioned in an earlier chapter, an oligopoly of eight huge TNC’s dominate global media. Robert McChesney notes how relatively recent this development is, an essential component of contemporary globalization.

“The global commercial system is a very recent development. Until the 1980s, media systems were generally national in scope. While there have been imports of books, films, music and TV shows for decades, the basic broadcasting systems and newspaper industries were domestically owned and regulated. Beginning in the 1980s, pressure from the IMI [international media industry]: World Bank and U.S. government to deregulate and privatize media and communications systems coincided with new satellite and digital technologies, resulting in the rise of transnational media giants.” (McChesney, 2001)

Like the handful of global oil companies and the limits that OPEC is able to put on oil products and distribution, these dominant global IT TNC's and their second tier counterparts control the flow of some 70% of news. The global impact of these firms is enormous. Christopher Dixon, a media analyst at the investment

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4 In some cases such as Fox News the self-conscious bias of presentation is a conservative one but the "news" (meaning the particular selection of subjects and its accompanying commentaries) is presented as if it were objective. In the United States millions of people list Fox News as their primary information source and accept it as definitive. Surveys taken in the months following US entry into the Iraq war indicated that viewers of Fox News were far more likely to believe that Saddam Hussein was deeply connected to al-Qaeda and the attacks on the World Trade Center (and other misperceptions of the war sponsored by the US government) than those taking their news from other sources, even after that view was widely discredited in the broader news media. (Lobe, 2003) Further, in March of 2005 a study of Fox News found that 73 percent of the stories on that network included the opinions of the anchors and journalists reporting them. This fusion of news and opinion creates a new level of bias in news reporting. (Kurtz, 2005)
firm PaineWebber argues that what we are witnessing “is the creation of a global oligopoly. It happened to the oil and automotive industries earlier this century; now it is happening to the entertainment industry.” McChesney and Shiller continue, “…a few leading conglomerates thus dominate the larger process of reorganization, and aspire to grow still larger and more diversified to reduce risk, avoid being outflanked by rivals and enhance profit-making opportunities. The upside is high; this is a market that some anticipate will have trillions of dollars in annual revenues within a decade.” (McChesney and Shiller, 2003) These firms operate in many nations yet avoid being associated with any given nation-state. In computing alone, despite competing open source operating systems and competing chip manufacturers, two giants, Intel and Microsoft, continue global domination of computer products.

Notably, Intel announced plans in 2005 to invest $1 billion in India, with Microsoft following with a planned $1.7 billion and Cisco Systems investing $1.1 billion in India as well. The three IT giants’ investments offer recognition of the growing intellectual capital of India, where many well capitalized information firms provide outsourcing for information work from advanced western economies. Add to the picture the investment bank J.P. Morgan Chase doubling its staff in India to 9,000 in order to handle business linked to telecommunications, and one begins to see why India’s place in the global IT market is expected to grow from $17 billion in 2005 to $60 billion by 2010. (The Economist, Dec. 17, 2005) Moreover, with a population of over a billion, India’s growing middle class presents a burgeoning market for IT and a ready labor supply for outsourcing information work from more costly sources such as the United States. India – with its population having English language skills and a tradition of English common law -- already creates and sells a significant portion of the world’s software, and has rapidly growing global businesses in outsourced work from U.S. insurance, legal, medical, and banking firms. With information multiplying exponentially, it follows that markets driven by information must devote more capital to IT, and that the market in information itself is likely to grow rapidly as well. India offers the comparative advantages of price and talent to lead tens of thousands of IT jobs to be outsourced to it from western industrial countries.

In still another sub-IT market, Internet search engines have multiplied and specialized, yet Google and Yahoo have rapidly emerged as the dominant Internet search engines globally, handling some 70% of all searches. These search engines have created auction markets where within a given country an online users search for information becomes part of an instant auction to see which firm will have online ads presented to the person making a search.

As we have seen in countries where government itself controls television, radio, parts of the Internet, and newspapers, the dominance of fewer global information firms holds strong potential for news with biases celebrating the advantages of globalization and offering far less attention to its drawbacks. Moreover, such
oligopolies mean tighter control of information and programming that billions of people use to shape their lives.

Video games, most of them played on three platforms by Sony, Microsoft, and Nintendo, or online via computers, generate global sales that grow by an amazing 22% annually and presently approach $50 billion in annual global sales. Sales of the three most popular game platforms alone are projected at $3.5 billion in 2007 (Ulmer, 2005) Clearly computer games are rapidly becoming a pervasive global communication medium and ways to link people via informal networks of shared information. As they have developed, electronic games now link groups of competing or collaborating users, so-called MMORPGs (massively multiplayer online role-playing games) new networks of people at a distance playing together yet often remaining anonymous. Global sales of computer games in the U.S. recently passed revenues for movies, yet game content becomes all the more combinations of fantasy and real-life situations, with characters on screen but also users creating their own identities within the game scenarios.

Moreover, electronic games online now create active global user markets. Fantasy rewards and items in the games have acquired real world value via active markets for various game advantages. According to The Economist magazine, in China, professional game players, so-called farmers, play online games all day, then sell for real money on ebay and elsewhere the in-game advantages they have earned – a blending of fantasy features with real world markets. (The Economist Dec 17, 2005) There are also active global sales of successful fictional characters that game users themselves have developed. In some cases, game players will pay to acquire a game fantasy character that has succeeded in clearing difficult initial game hurdles, making subsequent play easier. Just where such interactive uses of media and information will lead game players has become the subject of recent sociological study. (McChesney and Nichols, 2000) While some observers raise alarms about the violent nature of many e-games and the addictive impact they seem to have on some players, others note that -- just as we see product placements in dramatic films -- we see product placements in e-games, i.e., characters and conflict joined with advertising to have game players interacting with product messages. Global advertising thus finds its way into each new form and medium of information, creating commercial products and services as a common global frame of reference.

Cell phones have added features such as personal assistant software, cameras, computer text messaging, the ability to receive photography and live television as well as recording and playback of speech and music, credit card swiping for online sales, email access, and an array of interactive games. These devices have ancillary technologies such as portable keyboards and headsets that allow their use anywhere that the expanding global grid of signals allows. It is now possible to watch live television on a cell phone and to download existing television programming for replay on either the cell phone or home television
sets. The personal, portable information device that started as a cell phone now combines attributes of such earlier devices as TV, music playback technologies, radio, computers, and online information exchange. As we have pointed out in our previous discussion of novelty and combinations as the sources of change, text messaging alone now accounts for billions of messages a month in many countries. Observing a single technology transforming into such various information forms shows the potential of IT to multiply its forms and in the process to multiply and extend global networks.

As parts of the global IT industry concentrate further into powerful TNC oligopolies, mergers valued in the hundreds of billions of dollars continue annually, and the market appears to be closing for major new competitors. The cost of entry is viewed as too high. In response we see governments such as the European Union insisting that the dominant IT technologies include limits that keep competition open. For example, the EU continues to hold computer giant Microsoft to stringent requirements that limit its control of markets. Meanwhile the array of separate submarkets that comprise global IT -- books, magazines, newspapers, music recording, TV production, satellite systems, motion picture theaters --remain subject to rapid change from innovations and new combinations of products and services. As McChesney and Nichols have put it, "The global media system is in the process of converging with the telecommunications and computer industries to form an integrated global communication system, where anywhere from six to a dozen super-companies will rule the roost." (McChesney and Nichols, 2000.) As if to support McChesney’s assertion, innovations will in 2006 turn television sets and DVD players into computers that record and play Internet transmissions of digital video. Simultaneously, computers will be able to tap online sources or DVD’s to reproduce high quality digital video versions of dramatic films, the computer screen, in effect intensifying its competition with traditional distribution of television.

And as we pointed out in a previous chapter, globalization is being organized around information that takes the form of symbols and symbolic processes, including the $350 billion a year advertising industry dominated by half a dozen mega-agencies that handle the business of global TNC’s. Commercial brand names such as Sony, Nike, Coca Cola and Pepsi have become symbols that claim global recognition, as do some of the sports celebrities who promote global products such as Michael Jordan and Tiger Woods for Nike, or tennis player Anna Sharapova for Canon cameras. Such figures become models for what TNC’s advocate as a consumer culture, one that collides with traditional national and indigenous cultures and mirrors the patterns of consumption in western industrial societies. Via the drumbeat of global media -- television, films, advertising, electronic games, sports equipment, the Internet, cell phones, and other communications technologies -- that sell the products these individuals endorse and use, such celebrities become world-renowned figures, living brands, and extensions of the commodities that they endorse. Moreover, they produce
complex identities that are diffused by the media throughout the world, shaping who people come to believe they are and what they wish to be.

Computer networks are a shifting mosaic of changing software, hardware, copyrights and patents, open sources, and disparate sources all struggling to fit together. How the pieces of the mosaic create a coherent picture and a smoothly functioning set of networks remains an unanswered but vitally important question. While Microsoft carefully guards its patents and the royalties they generate, IBM announced in the fall of 2005 that it would make its patent information available royalty-free to anyone designing software standards for health and education. (Miller, 2005) While media giant IBM retains tight control over its business and management computer sources, its movement toward open sources suggests that a major player in the information marketplace sees more advantages in some forms of collaboration than in control and competition. As proof that open-sourcing bears fruits, IBM offers the example of the chip resulting from collaborations with Sony and Toshiba for the popular PlayStation game device. Other firms –Sun Microsystems, Solaris, Nokia – have followed suit in limited releases of royalty free patent use, foreshadowing the possibility of major media firms meshing their software royalty-free as a new collaborative strategy to hold market share and to improve future links in global communications. For example, Google is collaborating with Sun Microsystems on an open-source OpenOffice project, suggesting that Google is eyeing Internet-based office productivity software. The next several years will tell if this gamble on open-sourcing can continue to generate information industry profits via collaborations versus traditional forms of competition.

As for the future, information guru and prospector Ray Kuzweil surveys the multiplying global growth of IT and suggests that its exponential growth and ballooning size raise serious questions about how orderly so much information can be, “Order is information that fits a purpose. The measure of order is the measure of how well the information fits the purpose. . . Information is a sequence of data that is meaningful in a process, such as the DNA code of an organism, or the bits in a computer program.” He sees the evolution of technology-driven information speeding up and yielding exponentially better returns. "A primary reason that evolution – of life-forms or of technology – speeds up is that it builds on its own increasing order, with ever more sophisticated means of recording and manipulating information. Innovations created by evolution encourage and enable faster evolution. . . Innovation is multiplicative, not additive. Technology, like any evolutionary process, builds on itself. This aspect will continue to accelerate when the technology itself takes full control of its own progression." (Kurzweil, 2003)

The prospect of global technology taking control of its own evolution may seem illusory or philosophically distant from the day-to-day technology and information one uses, but Kurzweil is examining the driving forces behind a shifting information paradigm, a shift in which information appears to seek new forms of
order and make quantum leaps toward becoming all the more pervasive and all
the more important in global commerce, affairs, and governance. As he sees it,
“Not only is each chip doubling in power each year for the same unit cost, but the
number of chips being manufactured is growing exponentially. . . Each stage of
evolution provides more powerful tools for the next.” The prospects Kurzweil
raises make who controls IT on a global basis all the more vital a question, the
answers to which – if left to the market -- may not well serve those on the
receiving end of the information provided by a concentrated global IT oligopoly.
In the terms introduced in Chapter Three, IT has itself become a complex system
in which predictability declines as innovation progresses.

Hot Links for Further Reading and Research
http://www.pbs.org/wgbh/pages/frontline/newswar/etc/synopsis.html
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Chapter Nine
Media and Information: The Landscape of IT

Shifting From Natural Toward Mediated Information

From the beginnings of the printing press to the newspaper, the telegraph, typewriter, telephone, movies, the radio, television and on to the latest forms of digital information technology, global information has multiplied exponentially. As it has, humans have subtly moved away from first-hand or face-to-face human experience as their common form of information, and have substituted for it forms shaped principally by those who collect, shape, and distribute information as some part of commerce. This shift from information as first-hand experience to mediated information – information largely shaped in words, pictures, and sounds at a distance by those unknown to us -- holds multiple implications for the identities, cultures, and commerce that we presently accept as the human experience. In remote places such as the Tibetan plateau or the highlands of Papua New Guinea media have yet to replace first-hand or primary information exchange, for in these places the world of face to face communication supplies what traditionally has passed for information. For most of the world’s population, however, predigested, mediated information shaped for commercial or ideological purposes plays a significant role in influencing what people learn, know, and use as the information on which to live their lives. Mediated information and the technologies that carry it have become the principal epistemology or way of knowing through which many of us perceive and understand the world. This reliance on third parties to supply from around the globe what we take as true or false, and what we use to make our decisions has become a dominant and accepted feature of globalization and life in contemporary societies.

Mediated information via IT (Information Technologies) has become the sea in which much of the world swims. Consider a few of the multitude of forms that information takes:

- Television, live and recorded, plus broadcast, cable, and satellite distribution;
- Radio, live and recorded, broadcast, cable, and satellite distribution;
- Music, live and recorded, and the instruments and devices which play it, from violins and horns to CDs, DVDs, and Ipods;
- Two and three dimensional art forms;
- Dramatic and documentary films and videotapes;
o Internet sources of every imaginable content and kind, from search engines, news, Powerpoint presentations, blogs and now vlogs (video logs), to markets such as eBay, historic records, and interactive online games;

o Local area networks that range from a few people to thousands distributed across far-flung global corporations;

o Networks of all forms that range from linking a few people of common interests to the vast and growing networks created by commercial search engines;

o Books, magazines, newspapers, and all forms of print on paper or on other technologies;

o DNA, genome mapping, stem cell experiments, and forms of human nerve tissue adapted as computer memory --biochips;

o Photography and artificially constructed computer images;

o Wireless networks, including WiMax spanning entire cities;

o Advertising in all its distributional forms, including direct mail and e-commerce;

o Clothes imbedded with visible text and messages;

o Telephones, telephone cable systems, Internet telephone service, microwave relay systems, faxes, voice messages, and text messages;

o Recorded and online interactive educational presentations, simulations, case studies, and games;

o Locater chips with global GIS technology;

o Government propaganda, news releases, and regulations;

o Distance education of all kinds from physics to business administration, tele-medicine and tele-health including surgery at a distance;

o Commercial surveillance of individuals, groups, corporations, and organizations by means of sound and video, individual consumer preference data, and government surveillance, including satellite photography;

o Espionage and warfare reports;
Classified and secret government and business information;

Computer operating systems, languages, software, applications, games, hard drives, CDs, and DVDs;

A global network of fiber-optic cables and relays;

Commercial transactions, barcodes, investment data, banking records, and sales agreements;

Money and securities markets;

Microwave towers and satellites carrying phone, photographic, television, and computer information;

Medical technologies and imaging such as sonograms, EKGs, EEGs, X-rays, CT Scans, MRI’s, and laparoscopic video cameras and recorders and individual medical records;

Microdots painted onto machine parts with identification data;

Interactive information labels;

Programmable specialty computer and technology chips for one-of-a-kind devices and innovations;

Fabrics and materials with embedded nanotechnology information;

Nanotechnologies with information-gathering capabilities;

And so on, as innovations continue to revolutionize the media both shaping and conveying the information. The reader is encouraged to add to this list based on his/her own experiences. Estimates indicate that information is multiplying exponentially, making its effective organization and use increasingly a major global issue both commercially and personally and producing staggering implications for how education should take place to render it appropriate for dealing with the information explosion.

Information, and the technologies that structure and convey it, have become so pervasive in our environment that we fail much of the time even to recognize their ubiquitous presence. Because it has a staggering power to sway people and move them to belief, action, or inaction, mediated information in its hundreds of forms – the latest news on CNN, the music playing from a CD, the latest stock market quotation, containerized shipments being tracked by GIS and coded information -- has become the catalyst of globalization.
Inevitably contemporary IT in its many forms influences global behaviors, identities, cultures, and in particular, the ways in which global commerce occurs. IT presently allows $1.9 trillion in daily global currency trading. IT allows job seekers and employers to find one another online. Software and computer applications allow people to collaborate in everything from architectural and industrial design to medical treatment, news reporting, inventory control, and the assembly of manufactured goods. The just-in-time shipment of parts for production, the burgeoning global service economy, and even formal education now in many places rely on online interactive sources of information, some involving hundreds of thousands of people. Given that information increases so rapidly, learning to navigate this expanding sea of information effectively has become an ever more important skill required for entry into the labor force and many forms of work. No previous generation of humanity has faced the opportunities and dilemmas that the growth of global information now presents.

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Global information systems are turning local markets into global markets, allowing small local businesses to reach buyers around the world. Via websites, online advertising, and search engines, businesses have new and more effective ways of finding and dealing with suppliers and service providers. On the other hand, using the Internet consumers have acquired growing power to search the globe instead of only local markets for products, services, quality, and prices. With IT affording consumers this new measure of power, competition among sellers intensifies, and the balance in markets shifts progressively toward buyers. Add to the picture relatively inexpensive oil that makes possible low cost shipping, and rising local markets take on global significance.

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1 Indira Gandhi National Open University has over 600,000 students. India currently supports 11 national open universities. (IGNOU, 2005)
annually in trash disposal, unmeasured transportation costs, and paper demands that require consuming a reported 100 million trees a year. (NPR, 2005)

The success of the worldwide auction service eBay indicates that individual buyers can now also become effective sellers, and that markets can extend to goods of every imaginable kind. eBay is a market like none other in history, for it sells everything, yet it operates simultaneously as a form of social capital, and an electronic meeting place for people. In its ten years of existence, it has become a market for new and used collectables, parts for various technologies, cars, boats, cameras, jewelry, sporting goods, musical instruments, toys, tickets to events, travel arrangements, one-of-a-kind items, as well as a source of educational workshops, community announcements, and group networking. As such it combines personal responses between buyers and sellers with information about the price, quality and availability of every conceivable form of article or service. Manufacturers can check eBay to see what kind of aftermarket their goods have. This huge global market is possible only because the Internet allows buyers and sellers to communicate instantly from anywhere in the globe.

As a consequence of high speed interactive media and global communications systems, we see new markets emerging, markets experiencing rapid, unexpected shifts, and market information becoming a highly valued commodity. Another example of a totally new market is that created by the search engine company Google to market ads to potential users, a market that has gone from almost nothing to over $6 billion in four years. The purchase of YouTube by Google for $1.65 billion in October 2006 is just another example of new technology and media ideas emerging in very short periods of time to develop new markets and value. (Google, 2006.)

The massive amount of information generated by credit histories, the use of credit cards, consumer retail cards, barcodes on goods, and medical information has allowed data companies to develop data bases of information about individual consumers, their buying habits and marketplace preferences. Hospitals now routinely have full patient histories available on their local networks, easing access for health care providers but raising security questions about patient privacy. With online sales requiring payment, and online banking a widely used feature of retail banking, security in online information transactions presents an ongoing problem. Moreover, credit histories, like medical histories, have in some cases become accessible online, and in a series of alarming computer thefts, tens of thousands of credit histories and other consumer information have been stolen by hackers. Similar break-ins have occurred at military and industrial information bases. And hackers sending global viruses have cost information systems worldwide millions of dollars in IT repair and protection. Aberrations in the information market reveal its vulnerability to criminal invasion and uses, and its difficulty in protecting information sources. Beyond these data base break-ins and organized credit card thefts, identity theft has become a very real issue in industrial societies. Data theft by employees, especially those leaving a
company, has become a major issue for industry in the past several years. (BBC, 2004) People are beginning to realize that these events are not anomalies that occur once in a while, but events that occur within the complexity of the global information system with a predictable statistical regularity. Consequently, protecting information has become a growing industry in itself. In the larger picture, we now see a global struggle by major businesses to keep up with the ongoing information revolutions that IT creates, as well as with the threats to information sources. (Note the relevance here for the cycles of diffusion discussed above in which an innovation triggers a set of subsequent processes, which in turn trigger reactions and counter-reactions. When these cycles are readily commodified, as they are within the IT industry, new sub-industries rapidly grow up around them. See Castells, 1996) Over the past several years the United States government has experienced several incidents in which lap tops have gone missing with valuable—sometimes classified—information, and/or jump drives (memory sticks) have been used to removed classified information from government sites, including nuclear laboratories. The implications of these security issues for nuclear proliferation are obvious. (Barry and Hosenball, 2006)

**Information Biases**

Where once it was easy to distinguish between the source creating the information, the medium by which it would be conveyed, and the uses to which it might be put, the contemporary world of globalized IT now blurs these traditional lines. In the case of computers, the software that structures and conveys digital information is itself a form of meta-information that frames what and how the information will be shaped and received. As such, the combination of technology and information (IT) has implicit biases in what is included or omitted, and in the amounts and shapes of information it presents. Some such information obviously has more objectivity and balance, and less bias than other forms of it. Nonetheless, whether it is a textbook, an advertisement, a shipping manifest, a government announcement, or a design for a new factory, those shaping information seek to control how users will see it, that is, persuade them of their attitudes about what matters and what does not.

Not unexpectedly, competition to control information has become a major feature of the tightly held global media oligopoly, as control means framing how buyers will see products and services, and how media giants can advance not just their market share, but persuade media users to embrace the gospel of globalization. Moreover, many of the major information providers of news now shape what the public receives in order to serve their commercial and political agendas, that is, global media dominance by an oligopoly means that the information created and distributed will have as its underlying goal serving the purposes of business. Objectivity and truth have been at risk since Gutenbergs time, but contemporary media and information, with notable exceptions, tend to promote the value of commerce, sales, and markets above all else, including the value of human rights.
Because tightly controlled information has also traditionally been a feature of autocratic governments, we see many countries struggling vainly to control the advances of cell phones, satellite television, Internet blogs, and other forms of unchecked information carried via a mix of media as a means of effective political control over their populations.

Examples of government attempts to control information and media abound even in countries where freedom of speech and press are held to be essential elements of their political culture. U.S. President George Bush spoke with certainty about Saddam Hussein having “weapons of mass destruction” as a cause for the U.S. going to war with Iraq. Global media carried his message, yet later these same information sources carried word that searches showed no such weapons existed. The free press later revealed that the U.S. president had been informed early on by American intelligence services that any such information about Iraq had not been substantiated by fact. The United States, however, by then had gone to war based on government-sponsored misinformation. (Woodward, 2006) While the U.S. celebrates being an open society with unfettered media and news, the government banned news photos of the coffins returning its war dead from Iraq. More recently, the New York Times revealed that the president of the United States had issued a secret order to have the National Security Agency secretly eavesdrop on American citizens without the required legal approval of courts established to deal with just such situations. Other U.S. government attempts to operate outside the law and muzzle negative news about government operations date back to the Iran-Contra scandal in the mid-1980’s and to federal officials seeking to suppress the release of the Pentagon Papers revealing government misinformation during the Vietnam War. Citizens in free societies look to an unfettered press to protect them from government control of information, but governments regularly find reasons to limit what the public knows, and with the press controlled by commercial owners who often see government press limitations as an unnecessary risk to profits, open or transparent government is always at risk. 2

Similar efforts to control the news have been evident in China in 2005, including initial efforts by local authorities to cover up the spill of hazardous benzene at Harbin. During the outbreak of the initial SARS epidemic in the summer of 2003, the Chinese government found ways to refuse cooperation with the World Health Organization while seeking to keep information from reaching the world outside

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2 A recent review of these episodes reveals another aspect of government bias of the news, created out of the current style of news reporters and analysts to curry favor with government leaders to gain information for their publications. In a subtle process, the giver of the information comes to control behavioral aspects of the gatherer of the information. This dynamic was uncovered recently in the celebrated case of the American Vice President’s chief deputy “Scooter Libby” and that of the New York Times, which withheld information on President Bush’s secret memo for a year. Reporters come to fear offending sources lest they be denied further access. The result is yet another fetter on the supposedly unfettered press.
China. Interestingly enough, it was through newspaper reports in neighboring countries that the WHO authorities in Manila learned of the outbreak in southern China.

Another illustration of this dynamic occurred in December of 2005 in China when a group of protesters in the village of Dongzhou in Guangdong province of China made news around the world as some twenty townspeople protesting farmland taken for a new electrical plant were reported shot dead by authorities. With China as a new member of the WTO, and the Olympics scheduled next in China, news media worldwide carried the story, but the Chinese government reported that only three protesters had died and that the police had fired in self-defense. Subsequent reports quoting villagers claimed that the Chinese government had threatened villagers if they attempted to tell authorities that family members had been shot. As reporting from Dongzhou continued worldwide, a group of prominent Chinese dissidents in an open letter on the Internet called on the Chinese government for a full scale investigation. The Chinese government story discounted comparisons with the Tiananmen Square riots and deaths in 1989. *The Washington Post* reported that, “Almost all of China's state-censored newspapers and other news outlets have been silent on the clash, which arose from a long-simmering dispute over the confiscation of farmland.” (Pan, 2005)

Lying by governments, another disinformation strategy, is as old as government itself as Hannah Arendt remarked in the late 1960’s in the midst of the U.S. Viet-Nam crisis.  

Clearly the advent of cell phones, the Internet, satellite telephone, faxes, television, and a variety of other media, plus international news reporting and the presence internationally of those involved in global trade combine to make it difficult or next to impossible for governments to effectively suppress coverage of negative news. Nonetheless, regimes the world over continue to use disinformation and propaganda on their own people as a means of control, and some of the disinformation becomes part of the information flow in globalization, affecting everything from foreign direct investment to sales of goods to currency values.

The increasingly commercial or ideological nature of IT, then, leaves many of those supplying it in the role of propagandizers or advertisers, even if what they hope to sell is only an idea or a viewpoint or the goods for which the “news” involved is only a pretext. Simultaneously, those relying on IT subtly are at the mercy of the implicit and conscious biases in the media through which they receive their information, and need rightly to be able to sort through these biases or the exploitative intent of what is presented to them. News media through these

3 “Secrecy—what diplomatically is called “discretion,” as well as the arcane imperii, the mysteries of government—and deception, the deliberate falsehood and the outright lie used as legitimate means to achieve political ends, have been with us since the beginning of recorded history.” Cited in Neubauer, 1977.
mechanisms become the willing disseminators of political biases. For example, consider all major U.S. TV networks playing the tape by Osama Bin Laden following the attacks on the World Trade Center, a propaganda coup worth many millions of dollars. Or consider how these networks carried the political advertisements criticizing his war record leveled against presidential candidate John Kerry as though it were news in the 2004 U.S. election. Because sensational news brings more heads to the TV set or the newsstand, and hence sells more advertising, the dominant television media and newspapers hold huge power to control the direction of everything from elections to revolutions. Ironically the rise of blogs, independent online editorial sources, has arrived to supply more individual expression and balance to the marketplace of political information creating a situation in which the very plurality of sources raises critical questions about the veracity—truth value—of the information being disseminated.

As it has in other industries, the IT market concentrates into the hands of fewer and fewer large TNC’s, limiting the major avenues by which most information reaches audiences. As we mentioned in an earlier chapter, an oligopoly of eight huge TNC’s dominate global media. Robert McChesney notes how relatively recent this development is, an essential component of contemporary globalization.

“The global commercial system is a very recent development. Until the 1980s, media systems were generally national in scope. While there have been imports of books, films, music and TV shows for decades, the basic broadcasting systems and newspaper industries were domestically owned and regulated. Beginning in the 1980s, pressure from the IMI [international media industry]: World Bank and U.S. government to deregulate and privatize media and communications systems coincided with new satellite and digital technologies, resulting in the rise of transnational media giants.” (McChesney, 2001)

Like the handful of global oil companies and the limits that OPEC is able to put on oil products and distribution, these dominant global IT TNC’s and their second tier counterparts control the flow of some 70% of news. The global impact of these firms is enormous. Christopher Dixon, a media analyst at the investment

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4 In some cases such as Fox News the self-conscious bias of presentation is a conservative one but the "news" (meaning the particular selection of subjects and its accompanying commentaries) is presented as if it were objective. In the United States millions of people list Fox News as their primary information source and accept it as definitive. Surveys taken in the months following US entry into the Iraq war indicated that viewers of Fox News were far more likely to believe that Saddam Hussein was deeply connected to al-Qaeda and the attacks on the World Trade Center (and other misperceptions of the war sponsored by the US government) than those taking their news from other sources, even after that view was widely discredited in the broader news media. (Lobe, 2003) Further, in March of 2005 a study of Fox News found that 73 percent of the stories on that network included the opinions of the anchors and journalists reporting them. This fusion of news and opinion creates a new level of bias in news reporting. (Kurtz, 2005)
firm PaineWebber argues that what we are witnessing “is the creation of a global oligopoly. It happened to the oil and automotive industries earlier this century; now it is happening to the entertainment industry.” McChesney and Shiller continue, “...a few leading conglomerates thus dominate the larger process of reorganization, and aspire to grow still larger and more diversified to reduce risk, avoid being outflanked by rivals and enhance profit-making opportunities. The upside is high; this is a market that some anticipate will have trillions of dollars in annual revenues within a decade.” (McChesney and Shiller, 2003) These firms operate in many nations yet avoid being associated with any given nation-state. In computing alone, despite competing open source operating systems and competing chip manufacturers, two giants, Intel and Microsoft, continue global domination of computer products.

Notably, Intel announced plans in 2005 to invest $1 billion in India, with Microsoft following with a planned $1.7 billion and Cisco Systems investing $1.1 billion in India as well. The three IT giants’ investments offer recognition of the growing intellectual capital of India, where many well capitalized information firms provide outsourcing for information work from advanced western economies. Add to the picture the investment bank J.P. Morgan Chase doubling its staff in India to 9,000 in order to handle business linked to telecommunications, and one begins to see why India’s place in the global IT market is expected to grow from $17 billion in 2005 to $60 billion by 2010. (The Economist, Dec. 17, 2005) Moreover, with a population of over a billion, India’s growing middle class presents a burgeoning market for IT and a ready labor supply for outsourcing information work from more costly sources such as the United States. India -- with its population having English language skills and a tradition of English common law -- already creates and sells a significant portion of the world’s software, and has rapidly growing global businesses in outsourced work from U.S. insurance, legal, medical, and banking firms. With information multiplying exponentially, it follows that markets driven by information must devote more capital to IT, and that the market in information itself is likely to grow rapidly as well. India offers the comparative advantages of price and talent to lead tens of thousands of IT jobs to be outsourced to it from western industrial countries.

In still another sub-IT market, Internet search engines have multiplied and specialized, yet Google and Yahoo have rapidly emerged as the dominant Internet search engines globally, handling some 70% of all searches. These search engines have created auction markets where within a given country an online users search for information becomes part of an instant auction to see which firm will have online ads presented to the person making a search.

As we have seen in countries where government itself controls television, radio, parts of the Internet, and newspapers, the dominance of fewer global information firms holds strong potential for news with biases celebrating the advantages of globalization and offering far less attention to its drawbacks. Moreover, such
Oligopolies mean tighter control of information and programming that billions of people use to shape their lives.

Video games, most of them played on three platforms by Sony, Microsoft, and Nintendo, or online via computers, generate global sales that grow by an amazing 22% annually and presently approach $50 billion in annual global sales. Sales of the three most popular game platforms alone are projected at $3.5 billion in 2007 (Ulmer, 2005) Clearly computer games are rapidly becoming a pervasive global communication medium and ways to link people via informal networks of shared information. As they have developed, electronic games now link groups of competing or collaborating users, so-called MMORPGs (massively multiplayer online role-playing games) new networks of people at a distance playing together yet often remaining anonymous. Global sales of computer games in the U.S. recently passed revenues for movies, yet game content becomes all the more combinations of fantasy and real-life situations, with characters on screen but also users creating their own identities within the game scenarios.

Moreover, electronic games online now create active global user markets. Fantasy rewards and items in the games have acquired real world value via active markets for various game advantages. According to The Economist magazine, in China, professional game players, so-called farmers, play online games all day, then sell for real money on eBay and elsewhere the in-game advantages they have earned – a blending of fantasy features with real world markets. (The Economist Dec 17, 2005) There are also active global sales of successful fictional characters that game users themselves have developed. In some cases, game players will pay to acquire a game fantasy character that has succeeded in clearing difficult initial game hurdles, making subsequent play easier. Just where such interactive uses of media and information will lead game players has become the subject of recent sociological study. (McChesney and Nichols, 2000) While some observers raise alarms about the violent nature of many e-games and the addictive impact they seem to have on some players, others note that -- just as we see product placements in dramatic films -- we see product placements in e-games, i.e., characters and conflict joined with advertising to have game players interacting with product messages. Global advertising thus finds its way into each new form and medium of information, creating commercial products and services as a common global frame of reference.

Cell phones have added features such as personal assistant software, cameras, computer text messaging, the ability to receive photography and live television as well as recording and playback of speech and music, credit card swiping for online sales, email access, and an array of interactive games. These devices have ancillary technologies such as portable keyboards and headsets that allow their use anywhere that the expanding global grid of signals allows. It is now possible to watch live television on a cell phone and to download existing television programming for replay on either the cell phone or home television.
sets. The personal, portable information device that started as a cell phone now combines attributes of such earlier devices as TV, music playback technologies, radio, computers, and online information exchange. As we have pointed out in our previous discussion of novelty and combinations as the sources of change, text messaging alone now accounts for billions of messages a month in many countries. Observing a single technology transforming into such various information forms shows the potential of IT to multiply its forms and in the process to multiply and extend global networks.

As parts of the global IT industry concentrate further into powerful TNC oligopolies, mergers valued in the hundreds of billions of dollars continue annually, and the market appears to be closing for major new competitors. The cost of entry is viewed as too high. In response we see governments such as the European Union insisting that the dominant IT technologies include limits that keep competition open. For example, the EU continues to hold computer giant Microsoft to stringent requirements that limit its control of markets. Meanwhile the array of separate submarkets that comprise global IT -- books, magazines, newspapers, music recording, TV production, satellite systems, motion picture theaters --remain subject to rapid change from innovations and new combinations of products and services. As McChesney and Nichols have put it, “The global media system is in the process of converging with the telecommunications and computer industries to form an integrated global communication system, where anywhere from six to a dozen super-companies will rule the roost.” (McChesney and Nichols, 2000.) As if to support McChesney’s assertion, innovations will in 2006 turn television sets and DVD players into computers that record and play Internet transmissions of digital video. Simultaneously, computers will be able to tap online sources or DVD’s to reproduce high quality digital video versions of dramatic films, the computer screen, in effect intensifying its competition with traditional distribution of television.

And as we pointed out in a previous chapter, globalization is being organized around information that takes the form of symbols and symbolic processes, including the $350 billion a year advertising industry dominated by half a dozen mega-agencies that handle the business of global TNC’s. Commercial brand names such as Sony, Nike, Coca Cola and Pepsi have become symbols that claim global recognition, as do some of the sports celebrities who promote global products such as Michael Jordan and Tiger Woods for Nike, or tennis player Anna Sharapova for Canon cameras. Such figures become models for what TNC’s advocate as a consumer culture, one that collides with traditional national and indigenous cultures and mirrors the patterns of consumption in western industrial societies. Via the drumbeat of global media -- television, films, advertising, electronic games, sports equipment, the Internet, cell phones, and other communications technologies – that sell the products these individuals endorse and use, such celebrities become world-renowned figures, living brands, and extensions of the commodities that they endorse. Moreover, they produce
complex identities that are diffused by the media throughout the world, shaping who people come to believe they are and what they wish to be.

Computer networks are a shifting mosaic of changing software, hardware, copyrights and patents, open sources, and disparate sources all struggling to fit together. How the pieces of the mosaic create a coherent picture and a smoothly functioning set of networks remains an unanswered but vitally important question. While Microsoft carefully guards its patents and the royalties they generate, IBM announced in the fall of 2005 that it would make its patent information available royalty-free to anyone designing software standards for health and education. (Miller, 2005) While media giant IBM retains tight control over its business and management computer sources, its movement toward open sources suggests that a major player in the information marketplace sees more advantages in some forms of collaboration than in control and competition. As proof that open-sourcing bears fruits, IBM offers the example of the chip resulting from collaborations with Sony and Toshiba for the popular PlayStation game device. Other firms – Sun Microsystems, Solaris, Nokia – have followed suit in limited releases of royalty free patent use, foreshadowing the possibility of major media firms meshing their software royalty-free as a new collaborative strategy to hold market share and to improve future links in global communications. For example, Google is collaborating with Sun Microsystems on an open-source OpenOffice project, suggesting that Google is eyeing Internet-based office productivity software. The next several years will tell if this gamble on open-sourcing can continue to generate information industry profits via collaborations versus traditional forms of competition.

As for the future, information guru and prospector Ray Kuzweil surveys the multiplying global growth of IT and suggests that its exponential growth and ballooning size raise serious questions about how orderly so much information can be, “Order is information that fits a purpose. The measure of order is the measure of how well the information fits the purpose... Information is a sequence of data that is meaningful in a process, such as the DNA code of an organism, or the bits in a computer program.” He sees the evolution of technology-driven information speeding up and yielding exponentially better returns. "A primary reason that evolution – of life-forms or of technology – speeds up is that it builds on its own increasing order, with ever more sophisticated means of recording and manipulating information. Innovations created by evolution encourage and enable faster evolution. . . Innovation is multiplicative, not additive. Technology, like any evolutionary process, builds on itself. This aspect will continue to accelerate when the technology itself takes full control of its own progression." (Kurzweil, 2003)

The prospect of global technology taking control of its own evolution may seem illusory or philosophically distant from the day-to-day technology and information one uses, but Kurzweil is examining the driving forces behind a shifting information paradigm, a shift in which information appears to seek new forms of
order and make quantum leaps toward becoming all the more pervasive and all the more important in global commerce, affairs, and governance. As he sees it, “Not only is each chip doubling in power each year for the same unit cost, but the number of chips being manufactured is growing exponentially. . . Each stage of evolution provides more powerful tools for the next.” The prospects Kurzweil raises make who controls IT on a global basis all the more vital a question, the answers to which – if left to the market -- may not well serve those on the receiving end of the information provided by a concentrated global IT oligopoly. In the terms introduced in Chapter Three, IT has itself become a complex system in which predictability declines as innovation progresses.

**Hot Links for Further Reading and Research**
http://www.pbs.org/wgbh/pages/frontline/newswar/etc/synopsis.html
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Economist, 2005, “Worlds without end; The online game industry is an excellent way to study the economics of fun,” December 17, pp. 81-2. (This article also reviews: Edward Castro, 2005 Synthetic Worlds: The Business and Culture of Online Games, University of Chicago Press.)


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Chapter Ten:
Food Security, Agriculture and Fisheries

Introduction:

In the second half of 2007 a set of forces, long in the making, began to coalesce to produce a global food crisis. Poor weather, attributable to continued global warming, brought more rain to those portions of the planet meant to have rain, and drought to those areas with arid climates. Steadily increasing global population, on the order of a net increase of 200,000 persons daily, kept pressures on existing food sources. In the United States and other industrial countries growing shortages of hydrocarbon fuels, most particularly oil, ensured that fuel prices, would stay high in part because of higher usage (especially by increased use in rapidly industrializing China and India). Seeking to provide alternatives to higher fuel prices, many nations, the U.S. and Brazil foremost among them, sought to augment their hydrocarbon fuels, with bio fuels. Within a brief period of just a few years, the United States was diverting up to 25% of its corn supply to energy production, creating ripple effects throughout world markets as grain prices were driven higher. And, to make matters even worse, the world as a whole was eating more, and higher up the food chain. Indeed, as we will document below, a growing health problem in the more affluent countries is over-eating.

Meanwhile, significant segments of the world population are literally starving. Those whose daily income is $1 a day or less, lack the means to purchase “replacement calories”—that is, their net daily caloric intake is negative—they are literally starving to death. The United Nations estimates that the numbers of people threatened by malnutrition from insufficient intake is in the millions. This combination of rapidly rising food prices, especially for staples such as corn and wheat, has led throughout late 2007 and into 2008 to food riots in various countries across the world. Corn prices have peaked in Mexico impacting a people whose diet is largely based on corn. In the Philippines, one of the largest food importing nations in the world, direct government action regulating rice sales has been necessary, including the dramatic prosecution of profiteers. In Vietnam, one of the world’s most active rice exporting nations, governmental control of rice sales has been required to control inflation (running at about 11% in April 2008)—government controls are required to preserve rice for the domestic market where it brings in a lesser price, rather than allowing market forces to draw it toward export markets with their much higher prices.

Some commentators have been moved to describe the global food situation as a “perfect storm” a metaphor1 that seeks to draw the image of a host of forces acting together to produce an outcome many times “worse” than that which would be accounted for by any one or two of such factors acting separately.

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In this chapter we will examine these separate factors, adding to them others that also contribute to the global food picture of lessened production, resulting shortages and higher prices. In the center of this picture is the world-wide phenomenon of processed food, or more simply—the food industry. Never before in history have human beings consumed more food that has been previously passed through industrial processes. Each step of the way consumes a measure—and in many cases large measures—of hydrocarbon fuel. Some estimates hold that 21 cents out of every dollar spent on fuel in the United States is in some way a hydro-carbon charge: for transportation, for sowing, for harvesting, for fertilizer, for drying, etc. To this extent and in ways that we will document further, food and fuel have become inseparable with the cost of each reinforcing the other.

We begin by examining some basic data about food. Figure 10-1, using data from the Food and Agriculture Organization of the United Nations, displays the global net trade flows of food. Note that in general most food that is “traded out” comes from a relatively small set of countries (even if they are very large countries) in North and South America and Australia and New Zealand (and Ukraine and France.) By far and away most food is “traded into” Africa and Asia with Africa having the poorest countries forced to import the most food.

Figure 10-2 provides a representation of who is well-fed and who is not, and the distribution of food energy across the world. Please observe this figure provides data on both food insufficiency and suggests which peoples in the world are substantially over-fed. As with so many facets of globalization when we examine food issues, we see that the central problems inseparably link capacity (can the world create enough food to feed its population?) and distribution—can food capacity be sufficiently well distributed to reduce the numbers of starving poor and malnourished?

Figure 10-3 looks specifically at developing countries from a recent historical perspective, indicating where food distress is greatest. Based on these projections—which were developed incidentally before the onset of the current food crisis—the data suggest that food sufficiency should improve in South and South East Asia and in Latin America and the Caribbean, while growing substantially worse throughout Africa.

Together these three figures illustrate some of the features of food sufficiency, questions of how food is produced in the world, who consumes what, and the relationships among food, population, health, energy, trade, and wealth. The chapter is divided into four parts. Part One examines some of the predicaments associated with agriculture and food, especially those related to population growth. Part Two looks at how agricultural practices affect food production capacity, including emerging and often controversial technologies of genetic engineering. It is here where we look more closely at how the global energy
system competes with the world food system, using food stocks, mainly corn, to produce ethanol as vehicle fuel. In addition we note that modern agriculture has become a major world energy consumer, activities that ripple throughout both the food and energy systems. In part Three we examine food marketing—the complex system through which food is moved from farm to processing to markets throughout the globe. A basic question is how food comes to be associated with broader patterns of consumption in contemporary, media-driven societies. In the final section, we turn to fisheries, exploring the relative health and decline of natural fisheries, and the forms of governance that permit many nations to take food resources from the sea. This chapter concludes with a section on aquaculture—the raising of marine animals in man-made settings.

Figure 10-1 Net Trade in Food 2000-2002
Figure 10-2 Dietary Energy Consumption

![Map showing dietary energy consumption worldwide.](Source: www.fao.org/NEWS/FACTFILE/IMG/FF9609-e.pdf)

Figure 10-3: Chronic Undernourishment in Developing Countries

![Bar chart showing chronically undernourished population in developing countries.](Source: www.fao.org/NEWS/FACTFILE/IMG/FF9609-e.pdf)
Part One: Is getting more resulting in less? The predicaments of global agriculture.

Over the past four decades world agriculture has changed dramatically as capital and technology combined to open new lands to production and extract greater yields from existing land. In some places such as Brazil, the results have been spectacular. *The Economist* magazine, for example, sees Brazil as an emergent agricultural superpower, citing more than one hundred percent export growth over the twelve-year period 1991-2003, and expansive growth in commodities such as soya, sugar/alcohol, chicken, beef and pork between 2002-4. More modest but still striking increases for coffee, orange juice, and tobacco also took place during this period. (*Economist*, 2005) Brazil joins a small group of countries that lead the world in agricultural exports, posting significant annual growth increments. The United States and the European Union-15 are the top agribusiness exporters with about $60 billion in exports each in 2003—Brazil is the third with a volume of $20 billion, followed by Canada (with a domestic population of about $25 million) and China (with a domestic population of 1.3 billion) at between $17-18 billion per year. (*Economist*, 2005) (In an interesting recent development, linked to our later discussion of the food / fuel competition, recent evidence suggests that China will soon become a net importer of food.) (Brown, 2008)

These data nicely illustrate the narrative of globalization as progress. They tell a story of capital transforming the world by increasing production, providing desirable alternatives for billions of consumers, increasing global food energy production, and creating significant national wealth. Using science, technology, and genetic engineering, global food companies have nearly matched global food production to the demands from a population increasing at roughly 76 million people a year. In this view of globalization, various forms of global integration resulting from trade liberalization produce an effective system of food exchange and marketing.

From a quite different point of view, however, this global food system has created an enormous burden of unsustainable distribution that channels food to the most developed countries at the expense of the poorer nations. This alternative narrative of the global food system shows hundreds of millions of people displaced from traditional local subsistence agriculture, moving them into market societies in which they lack the resources to produce or purchase needed food. Consequently they suffer crippling nutritional deficiencies. Larger landowners, managers, and corporate agriculture firms presently produce higher yields with higher energy and capital costs necessary for global distribution. As they transform small farming into transnational agri-businesses, they displace small-scale subsistence farmers. They rely on mono-cropping, planting large plots of land in the same crop cycle after cycle, producing larger yields, but depleting the soil of essential nutrients and causing topsoil loss. This pattern leads to further
dependence on commercial fertilizers, which add to the greenhouse gas nitrous oxide, and to reliance on hybrid seeds. (Evans, 2004)

Some observers such as Peter Zuckerman, point to the misuse of land and water (especially the over-use of water which depletes aquifers) as a pressing crisis, increasing desertification of the planet. (Zuckerman, 1996) Laurie Garrett’s work on epidemics and the spread of infectious diseases emphasizes the link between the indiscriminate exploitation of land previously not used for agriculture (for example, the cutting down of rain forests) and the spread of disease, often diseases new to humans and domesticated animals. (Garrett, 1996)

Overuse of resources raises” questions about carrying capacity, the idea that given distributions of land on the planet can sustain populations of a certain size, but if overused, will produce too little food for their populations. Those who pursue carrying capacity analyses tend to argue that collectively we are leading ourselves toward a massive crisis in which our agricultural practices can no longer sustain our populations. Jared Diamond has argued powerfully that societies unable to recognize and heed the message of such studies may stand on the brink of collapse. (Diamond, 2004. Murai,1996)

In this impending food crisis narrative, global food corporations have developed a system of semi-monopolized markets and controlled prices. They transform food production needed domestically into export commodities, and establish a cruel system that exploits people who are losing their way of life and their ability to survive. Hilary Mertaugh, for example, sees these developments as the existence of a de facto food cartel that is radically concentrating the agri-food system to the detriment of consumers.

“Over the last two decades, agribusiness and food retail mergers, acquisitions, joint ventures, and informal contract agreements have transformed the agri-food system into a powerful network of transnational corporations that have the power to control the world’s food supply at every stage of food production—from gene to market shelf...The flurry of mergers and acquisitions throughout the agri-food system has created highly concentrated markets as agribusinesses expand their dominance by diversifying their commodities... As fewer corporations control each stage of food production, farming is becoming a kind of serfdom. Consolidation among suppliers and processors leave farmers with few choices of who to buy from and who to sell to. Dominant agribusinesses have the ability to drive up the prices they charge for inputs while watering down the prices they pay for outputs. Furthermore, the rise of patented seed varieties places farmers in an even worse position, as agricultural biotech companies gain ownership of the germplasm itself.” (Mertaugh, 2003 See appendix A)
The world of food security faces a number of tensions. For example, the global industrialization of food to feed a rising population ironically lessens food security. The globalization of food supplies creates predicaments—by doing one thing—by following one course of action—we bring about another set of circumstances or problems. Some may be intended outcomes, e.g. providing greater amounts of food to feed the world, but the unintended consequences of globalizing food production and distribution also pose serious problems—over-fishing destroying world fisheries, demand for food as biofuel now competing with food as essential nutrition, factory farming of food animals threatening epidemics such as avian flu, the inability of governments to assure consumers that food from distant sources is safe to eat, methane from food animals contributing significantly to global warming, and toxic spills of concentrated animal excrement destroying environments and waterways.

One dramatic illustration of an unintended negative consequence has been the emergence of obesity and diabetes in developed societies, most famously in the United States, where these two conditions are now epidemic. In the United States consumer abundance and increased affluence lead to over-nutrition, over-eating and consumption of the “wrong” foods, e.g. those with too many calories. The pattern also links to high volume consumption of “junk” food, so-called “fast food” which is consumed disproportionately by poorer members of the population because it is “cheap” and readily available. (Schlosser 2001) The United States Department of Agriculture reported in 2000 that 62 percent of Americans were overweight, a consequence of excess of energy intake over energy expenditure. (USDA, 2002)

These patterns of obesity, especially adolescent obesity, have begun to show up in those cities in China where rapid affluence is changing both the food supply and food habits. Coupled with a lack of exercise, younger Chinese urbanites are beginning to resemble their American counter-parts in their tendency toward obesity and diabetes. (Lao and Hu, 2004)

**Part Two: Organizing food through agricultural practices: the technologies of food**

Raising food is, of course, one of the oldest human activities. Densely populated human settlements date back to raising grains and animals, organized patterns of land use and water availability. Humans learned and passed along information about how to cohabit safely with other animal species to limit disease transmission. Early human history reveals populations expanding and contracting, dictated partly by weather patterns that resulted in alternating cycles of feast and famine. Social and political organization (including the rise and fall of empires and civilizations) closely relate to patterns of food supplies. (McNeil, 1976)
Science and technology have transformed virtually every facet of how food is grown, processed, brought to market, and consumed, but this transformation has brought mixed consequences. Throughout the food cycle from farmer to consumer, as organizational capacity has grown and become more complex, capital--and in many stages large-scale capital--has entered the process.

Technology drives modern food production in the amount of artificially manufactured fertilizers used, in the spread of hybrid seeds to increase yields, in the use of genetically modified crops, and in the uses of fossil fuel energy machines to plant, weed, harvest, transport, and process crops. Population growth, urbanization, and food preferences brought by increased wealth strongly influence contemporary agriculture. Moreover, as urban populations increase, more food grown in the countryside must be transported to cities. Ongoing urban sprawl reduces the land available for agriculture, often leading marginal land to be pressed into use. The movement of populations to cities leaves fewer on the land to grow food, adding to pressures to employ more fertilizer, hybrid seeds, and genetically modified crops to increase yields. The greater application of fertilizers results in a massive transfer of nutrient chemicals from rural to urban regions, where they concentrate in urban waste sites and often leach into soils, contaminating them in the process. A significant proportion of these chemicals ends up in waterways and oceans. Krauss has estimated that out of a global total of 175 million tons of basic nutrient chemicals transferred from the soil to food, 83 million tons or 47.5% in the late 1990’s (it is now over 50%) find their way into urban settlements.2 (Krauss, 2000)

The largest growth in world fertilizer use occurred after 1970 and peaked in the early 1990’s. It continues to grow at about 3% a year, from 138.8 million tons in 2001/2 to 145.4 million tons in 2003/4. This growth rate would double usage in 24 years. (IFA, 2004) The cost of fertilizers in food continues to rise, in part because of the relatively large amounts of hydrocarbon energy required to produce fertilizers. (Murray, 2005)

Fertilizer run-off contaminates water systems worldwide, a major problem. Only a few countries have taken steps to reduce such problems. As the growth cycle of fertilizer use continues (with world population increasing at an annual rate of approximately 76 million), both the energy costs of increased fertilizer use and its run-off contamination will grow as problems. In 2004 some 146 so-called near shoreline dead zones worldwide had been identified, areas of coastal water that contain too little dissolved oxygen to sustain life. The number of dead zones has doubled each decade since the 1960’s.

The complex chain of events that produces dead zones starts with excess fertilizer use, as farmers continue to seek to expand yields. (Larsen, 2004) Such

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2 The designation NPK refers to the burden of fertilizer use consisting of nitrogen (N), phosphorus (P as P₂O₅) and potassium (K as K₂O).
oxygen-depleted zones, of course, threaten coastal fishing. A significant 7900 square mile dead zone exists in the Gulf of Mexico, produced by the outfall of the Mississippi River Basin, which drains the most fertile agricultural lands in the US. The size of the zone increases as farmers enlarge their corn crops to produce ethanol. (See below for more on the ethanol fuel issue.) Pesticide use follows the same general pattern and analysis. In 2004 global pesticide sales were approximately $32 billion, increasing at an annual rate of 4% (a rate that would double pesticide use in roughly 18 years).

Global capital dramatically affects agricultural practices throughout the world. Two massive global firms, Dupont and Monsanto, dominate the world market for genetically modified seeds with 93% of global sales. (Mertaugh, 2003) The two companies create seeds that produce significantly higher yields, but through so-called “terminator technology” the seeds become infertile after one life cycle. (Burcher, 2006. Schubert, 2005) Farmers using such seeds are no longer able to set aside a portion of their crop for the next planting, but must purchase their next crop’s seeds in the market. Consequently, marginal farmers fall out of production, the size of farms increases, farmer dependence on capital increases, and the seed producers have more impact on markets. Perhaps more than any other single innovation, the creation of such terminator seed stocks is producing a worldwide revolution of agriculture modeled after industrial production.

Modern food raising has come to rely on fossil fuel energy in every phase of food production. Within large scale agriculture, fossil fuel energy is required for the creation of fertilizer and seeds, for their transportation in global commerce, for machines to prepare fields, raise water, and run irrigation pumps, to create and transport fertilizer, pesticides, and herbicides, to apply these to crops, to harvest crops, and to transport them (and the workers who harvest them). Processing facilities use massive amounts of energy for drying, processing, packaging, etc. This cycle is dramatically outlined in B.M. Green’s 1978 book Eating Oil--Energy Use in Food Production. (Church, 2005) In the United States, it is estimated that 17% of all energy use goes into food production. The text-box that follows indicates the Institute for Science in Society’s estimates for agricultural water and energy demands, and for the greenhouse gases emitted during industrialized food production and consumption. (ISIS, 2005)

Murray argues that while agriculture now finds ways to use less energy, the aggregate amount of energy consumed between the farm gate and the food table continues to rise. Of overall energy used in the United States food system, agricultural production consumes 21 percent, another 14 percent goes to food transport, 16 percent to processing, 7 percent to packaging, 4 percent to food retailing, 7 percent to restaurants and caterers, and 31 percent to home refrigeration and preparation. (Murray, 2005)

Massive amounts of food now move internationally, increasing global interdependence. Given that energy drives globalization, the fossil fuel-reliant
industrial model of food production carries great risks. The rise of energy-reliant food production comes precisely when the availability petroleum and natural gas is declining and their costs rising. Critics of industrial farming and food processing call for far more local, smaller scale production, greater use of organic food techniques, and better yields through techniques less damaging to human and physical environments. (See, for example, the Sustainable Agriculture program of the University of California, 2006.) They argue that agriculture must integrate scientific concepts of sustainability and conservation into a less energy intensive, dis-aggregated food system.

**True costs of industrial food production system**

- 1,000 tons of water are consumed to produce one ton of grain
- 10 energy units are spent for every energy unit of food on our dinner table
- 1,000 energy units are used for every energy unit of processed food
- 17% of the total energy use in the United States goes into food production & distribution, accounting for more than 20% of all transport within the country; this figure excludes energy used in import & export
- 12.5 energy units are wasted for every energy unit of food transported per thousand air-miles
- 20% of all greenhouse gases in the world come from current agriculture

Source: ISIS 2005

Another emerging link between the agriculture/food story and the energy story lies in the competition for land use. Will agriculture grow food, use farmland instead to produce ethanol as an additive for transportation, or convert farmland to grow crops to fuel electrical generating plants? In the US the burgeoning ethanol industry is made economically competitive only by the very large subsidies that the US government pays growers, primarily for producing corn and soy beans. (The US President, George W. Bush, has proposed the growing of another plant, switch grass, as a crop suitable for energy conversion. It, too, would receive large governmental subsidies.) Some of the hidden costs in this “non-fossil fuel” alternative include fertilizer use, soil depletion, water demand, higher nitrous oxide emissions, and the heavy energy demands of the ethanol conversion process. Recent data suggest that the “burdens” of any use of farmland for energy food crops such as corn are far greater than estimates that have been used in the policy process when external ripple effects such as the impact on food availability in other parts of the global system are taken into consideration. (Bukovinszky, 2008)

As more farmland is devoted to growing crops for ethanol, world grain supplies fall short of food needs. Lester Brown points out that at the end of the harvest season 2006 the northern hemisphere produced a total of 1,967 million tons of grain, short of the estimated world annual consumption of 2,040 tons, and that globally in six of the past seven years, production has fallen short of demand,
leading to a drawdown of world carryover stocks of only 54 days. "The growth in world grain consumption during the six years since 2000 averaged roughly 31 million tons per year. Of this growth, close to 24 million tons were consumed as food or feed. The annual growth in grain used to produce fuel ethanol for cars in the United States alone averaged nearly 7 million tons per year, climbing from 2 million tons in 2001 to 14 million tons in 2006.” (Brown, 2006)

What might be termed “the US ethanol project” has grown dramatically since this analysis in 2004, spurred by high subsidies to farmers to grow corn dedicated to ethanol consumption, which nets a federal governmental subsidy of 51 cents a gallon translating into $1.46 per bushel of corn. Within the past five years, US capital has flooded into the ethanol market, resulting in the construction of new ethanol refineries throughout the country, with 81 currently under construction. The economic return (with the subsidy included) of ethanol conversion is tied directly to the price of oil: at $50 a barrel, it is economically beneficial to utilize corn priced at $4 a bushel. When oil rises to $100 a barrel, distillers can afford to pay $7 a bushel for corn; and should oil rise to $140 a bushel, distillers can afford to pay $10 a bushel, which as Brown points out is twice the 2008 market price of $5 a bushel. (Brown, 2008)

Diverting the use of corn from food to fuel has triggered significant rises in food prices throughout the globe, as food shortages have quickly risen. As Michael Pollan points out, corn has come to be the staple in the diet of industrial countries. It is an essential ingredient as animal feed, and in products such as corn flour, and corn sweeteners, thickeners, separators and adhesives. (Pollan, 2006) When the price of corn rises, this cost transmits throughout the food system. And, with global interdependence, radically rising prices rapidly circulate throughout the global system. Globally food prices rose 10% in 2006. (Brown, 2008)

The ethanol fuel program creates additional problems. Corn yields far less energy than some alternative crops in making ethanol. Some scientists argue that the production and refining of corn as ethanol lead to net losses of energy, or at best to no significant energy gain and only minor improvements in green house gas (GHG) emissions. Other grasses cost less to grow, use less energy to harvest and refine, and emit far lower volumes of GHG. They also convert into a much higher energy ethanol than that produced from corn. Powerful farming lobbies in the United States, however, have advocated the widespread use of corn for ethanol simply because corn is there! At the time the U.S. adopted this policy, vast acreage in the United States was already planted in corn. Diverting substantial portions of this crop to fuel was easier and certainly more profitable to corn producers than moving into different, more energy-productive bio-sources.
Devoting large agricultural acreage to corn involves the American Great Plains and mid-western states, all of which drain into the Mississippi River system (from the Ohio, Platte, Missouri and other major tributaries). Over time vast amounts of pesticides and herbicides from corn farming have produced a huge toxic run-off, resulting in a major area of the Gulf of Mexico becoming a dead zone. (As described above in section two of this chapter. Bruckner, 2008)

Part Three: Market elements of food
The complexities of how food is produced, transformed into manufactured products, transported, and marketed require more complexity in societies. For example, global media serve a primary role in commodification, turning once unique products and phenomena into commonplace, indistinguishable units. It is as if we should see bushels of corn, barrels of oil, bottles of beer, terrorist bombings, or political events as no longer of distinct or of particular individual value. Why? Because the brief, repetitious appearances they are given on television and in advertising render them no longer novel or unique. Television and advertising establish the sameness of what is presented, a sense that more and more of life consists simply of commodities. Inevitably our needs, wants, and preferences also come to be seen simply as commodities to be satisfied by the more or less indistinguishable products and information that media would sell us. The Nobel Laureate in Economics, James Buchanan, has described this phenomenon as “the commodification of everything.”

Markets report and trade commodities such as sow bellies, corn, and soybeans, which then are sold via massive packaged food advertising. Food itself has itself now come to be reported daily as a globalized commodity. Here we discuss three perspectives of this phenomenon, warning the reader to recognize that these are but a small part of a larger picture. The three perspectives are:

- the fast food culture as a global paradigm
- the transformation of diets by global marketing
- the economics of the food production and consumption pyramid

Fast Food As Global Paradigm
The term fast food has become so common throughout the world that it does not require definition, indicating the success of fast food in establishing itself as a global industry. Everyone knows what fast food is, and everyone recognizes its major brands and labels: McDonald, KFC, Burger King, Blimpies, Pizza Hut, etc. The industry combines a rigorous standardization of production, preparation, presentation and marketing, all delivered through a complex system of franchising that yields distinctive combinations of global market and brand identification. The basic franchise model pioneered by early fast food firms has been replicated throughout the world and across many different food styles. The power of the model is indicated in part by the coining of the term “McWorld” by
Benjamin Barber in 1995, referring to the radically homogenizing influences of globalization. (Barber, 1995)

As a production and delivery system, fast food makes use of the same techniques of production engineering as other forms of flexible production. In this kind of system, the knowledge capital costs of an enterprise are developed on the “front side”, and then replicated in highly flexible ways at the local level with cheap labor. Thus, although they hardly seem to be part of the same organizational world, fast food and computer chip production partake of the same production model as do modern clothing manufacture, automobile production, etc. (See for example the description of flexible production developed by Toyota, at NUUMI, 2006)

*The Transformation of Diets by Global Marketing:* Fast food has produced its own culture. As mentioned above, the diet promoted within this culture has increasingly been assailed for its negative effects on individual health, primarily from the promotion of a diet high in saturated fat, salt, and sugar. These substances have been linked to world-wide increases in obesity, diabetes, and cardiovascular disease. (Lao and Ho, 2004. Schlosser, 2001.) In an analogy of Gresham’s Law -- which states that bad money tends to drive out good in markets -- it is asserted that bad food tends to drive out good. (Wikipedia, 2006)

The global dimension of processed food continues to grow. In 2005, $3.2 trillion was spent on processed food, approximately 75 percent of global food sales. The annual growth of retail food sales has been far more rapid in lower income countries than in higher income countries, an indication of changing dietary practices being spread by increased globalization. Interestingly, the increase in purchases of processed food has been fueled less by its trade as a commodity and more as the result of national food systems consolidating around processed food production and marketing. (Regmi and Gehlhar, 2005) Global food companies expand their markets largely through foreign direct investment.

“Market sizes, as indicated by retail sales value, are much larger for developed countries. The United States, the European Union, and Japan together account for over 60 percent of total retail processed food sales in the world. However, market growth has generally been faster among developing countries, particularly lower-middle-income countries such as China, Morocco, the Philippines, and many Eastern European countries. The transitioning Eastern European countries, such as Bulgaria, Romania, and Ukraine, experienced double-digit growth in retail sales of many food and beverage products during the late 1990s. While sales in these markets have stabilized, Asian markets have picked up in the past few years, and processed food product sales are expected to continue to significantly increase.” (Regmi and Gehlhar, 2005)
Food becomes just another commodity partly because it is increasingly advertised as such. Global advertising overall grew to $444 billion in 2002. Increasingly, advertisers market to children, seeking to instill consumption patterns and brand loyalties at early ages. Money spent advertising to children is increasing: an estimated 40,000 television ads were produced in the U.S. annually in 2002, up from 20,000 in 1970. According to Worldwatch, “half of these ads encourage children to request unhealthy food and drinks.” (Worldwatch Institute, 2003)

**The Economics of the Food Production and Consumption Pyramid**

The food chain -- food production, processing, transportation, and consumption -- constitutes an inverted pyramid with the farmer—the food producer—at the bottom and prepared food sellers (restaurants, ready-to-eat packaged food producers and sellers, institutional food providers) at the top. As processing is added from food growing to food consumption, the proportions of profit returned follow that chain of production. In the United States, which in many ways has pioneered this global revolution toward processed food, about 20% of all dollars spent on food are returned to the farmer, an interesting figure given that for over four decades American agriculture has been overtaken by factory/industrial farming, with large-scale producers owning most farm land and producing most of its product. As the global food system comes to mirror this US way of growing, transporting, and processing food, one could expect that the food economies of other countries would come to approximate similar proportions.

| U.S. consumers spent $618.4 billion on food in 1999 (excluding imports and seafood), up 37 percent from the $449.8 billion spent in 1990. Consumers bought a larger volume of food, value-added processing and packaging of at-home foods increased, spending at restaurants and fast-food outlets grew, and prices for marketing rose. All of these factors contributed to the jump in food spending during the 1990's. USDA, 2004. |

Historically, as greater amounts of food have reached humans through the intervention of food processing, industrial country food processors and distributors have consolidated and formed a pattern in which each “food sector” (for example, meat, grain, dairy products, beverages, etc.) has become dominated by three or four firms, that is, an oligopoly. Further, these firms grow by extending into other international markets, creating a truly global food industry. Table 10-4 lists the top ten food and beverage companies in the world in 2000. The student may wish to explore these rankings, as the explosive growth of developing economies, especially China and India, is bringing new large companies into these industries. For example, Coca Cola has encountered trouble as it expands into India, where it is accused of depleting groundwater and contaminating remaining waters. (Srivastava, 2003)
Table 10-4: Top Ten Global Food and Beverage Companies

<table>
<thead>
<tr>
<th>Rank</th>
<th>Company</th>
<th>Country of Primary Identification</th>
<th>Sales, 2000/1 (in million $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Nestle</td>
<td>Switzerland</td>
<td>45,885</td>
</tr>
<tr>
<td>2</td>
<td>Philip Morris Companies</td>
<td>US</td>
<td>30,907</td>
</tr>
<tr>
<td>3</td>
<td>ConAgra, Inc</td>
<td>US</td>
<td>25,386</td>
</tr>
<tr>
<td>4</td>
<td>Cargill, Inc</td>
<td>US</td>
<td>21,875</td>
</tr>
<tr>
<td>5</td>
<td>Unilever</td>
<td>The Netherlands</td>
<td>21,127</td>
</tr>
<tr>
<td>6</td>
<td>Coco-Cola Co.</td>
<td>US</td>
<td>20,458</td>
</tr>
<tr>
<td>7</td>
<td>PepsiCo, Inc.</td>
<td>US</td>
<td>20,458</td>
</tr>
<tr>
<td>8</td>
<td>IBP, Inc</td>
<td>US</td>
<td>16,950</td>
</tr>
<tr>
<td>9</td>
<td>Diageo</td>
<td>UK</td>
<td>16,651</td>
</tr>
<tr>
<td>10</td>
<td>Mars, Inc</td>
<td>US</td>
<td>15,300</td>
</tr>
</tbody>
</table>

Part Four: Fisheries and Aquaculture

Oceans and seas provide a major source of protein for humans. Rapidly increasing human populations have led to a significant increase in the amount of fish taken from all sources over the past two or three decades, although as Table 10-5 shows, global fish capture has leveled off from its rapid increases in the 1980s and 1990s. Difficulties in regulating fishing practices among and between nations have resulted in the over-fishing of most major fishing grounds. The technological transformation of fishing has immensely increased the amount of fish taken from oceans and the bycatch of marine animals that die needlessly in the process. In effect, with continuing over-investment in fish harvesting, ocean fisheries are being strip-mined, left with too few fish to repopulate. As a result—within just a few recent decades—fisheries throughout the world have collapsed.

Ocean protein is critically important in the face of continued population growth. Globally in 2002 production from capture and aquaculture was about 101 million tons of fish used as human food. Overall fish provide about 20 % of the average annual intake of animal protein for over 2.6 billion people. (FAO, 2004.)

Table 10-5 Total Fish Production and Utilization (in millions of tons)

<table>
<thead>
<tr>
<th>Production</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>INLAND</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Capture fishing was revolutionized during the 1970’s and 1980’s by the entry of massive factory ships, capable of staying at sea for months and greatly improving the efficiency of the primary capture vehicle. Despite the attendant high risks, the large profits to be gained brought what was probably an oversupply of vessels to many fisheries in the 1970’s and 1980’s, a situation compounded by strong state subsidies on the part of many countries to develop their fishing industries. The collapse of some primary fisheries, perhaps most notably that of the Nova Scotia fishery in the 1980’s (Nova Scotia has for centuries provided the world’s largest supply of cod), signaled to many the dangers of global over-fishing. Map/figure 10-6 indicates the extent of world fisheries that have been damaged or are threatened by over-fishing. Since the early 1990’s declining profit margins in deep ocean fishing have begun to apply a brake to the pattern of adding fishing boat capacity. This change coupled with declining fish stocks tends to account for some of the data observable in Table 10-5, indicating a decline in marine fish production from 86.8 million tons in 2000 to 81.3 million tons in 2003.

Greenpeace and other environmental groups emphasize the wasteful nature of capture in marine environments, raising issues of sustainability. Among other factors they emphasize that:

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capture</td>
<td>8.1</td>
<td>8.5</td>
<td>8.7</td>
<td>8.7</td>
<td>8.7</td>
<td>8.7</td>
</tr>
<tr>
<td>Aquaculture</td>
<td>18.5</td>
<td>20.2</td>
<td>21.3</td>
<td>22.5</td>
<td>23.9</td>
<td>25.2</td>
</tr>
<tr>
<td><strong>Total Inland</strong></td>
<td>26.6</td>
<td>28.7</td>
<td>30.0</td>
<td>31.2</td>
<td>32.6</td>
<td>34.2</td>
</tr>
<tr>
<td><strong>MARINE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capture</td>
<td>79.6</td>
<td>85.2</td>
<td>86.8</td>
<td>84.2</td>
<td>84.5</td>
<td>81.3</td>
</tr>
<tr>
<td>Aquaculture</td>
<td>12.0</td>
<td>13.3</td>
<td>14.2</td>
<td>15.2</td>
<td>15.9</td>
<td>16.7</td>
</tr>
<tr>
<td><strong>Total Marine</strong></td>
<td>91.6</td>
<td>98.5</td>
<td>101.0</td>
<td>99.4</td>
<td>100.4</td>
<td>98.0</td>
</tr>
<tr>
<td>Total Capture</td>
<td>87.7</td>
<td>93.8</td>
<td>95.5</td>
<td>92.9</td>
<td>93.2</td>
<td>90.3</td>
</tr>
<tr>
<td>Total Aquaculture</td>
<td>30.6</td>
<td>33.4</td>
<td>35.5</td>
<td>37.8</td>
<td>39.8</td>
<td>41.9</td>
</tr>
<tr>
<td><strong>Total World Fisheries</strong></td>
<td>118.2</td>
<td>127.2</td>
<td>131.0</td>
<td>130.7</td>
<td>133.0</td>
<td>132.2</td>
</tr>
<tr>
<td><strong>UTILIZATION</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human Consumption</td>
<td>93.6</td>
<td>95.4</td>
<td>96.8</td>
<td>99.5</td>
<td>100.7</td>
<td>103.0</td>
</tr>
<tr>
<td>Non-food uses</td>
<td>24.6</td>
<td>31.8</td>
<td>34.2</td>
<td>31.1</td>
<td>32.2</td>
<td>29.2</td>
</tr>
<tr>
<td>World Population (billions)</td>
<td>5.9</td>
<td>6.0</td>
<td>6.1</td>
<td>6.1</td>
<td>6.2</td>
<td>6.3</td>
</tr>
<tr>
<td>Per capita food fish supply (kg)</td>
<td>15.8</td>
<td>15.9</td>
<td>15.9</td>
<td>16.2</td>
<td>16.2</td>
<td>16.3</td>
</tr>
</tbody>
</table>

Source: World Review of Fisheries and Aquaculture, SOFIA, 2004
* Until just recently the global catch had continued to grow, having roughly quadrupled over in the past 40 years. Many fisheries such as Nova Scotia have collapsed, and the issue of sustainability touches every major fishery.
* Many of the world’s commercially targeted fish stocks are either overfished or in danger of becoming so.
* As over-fishing depletes the target stock, it also creates ecological consequences, as the marine food chain is damaged.
* Companion damage or by-catch associated with global fishing is extensive. It is estimated that millions of dolphins have died in tuna purse seine nets in the Eastern Tropical Pacific Ocean; an estimated 44,000 albatrosses are killed each year by tuna longline boats.
* One quarter of all fish taken from the sea never make it to market, an estimated 27 million tons.
* From the data point of 1970, the world’s fishing fleet has expanded twice as fast as world fish catches, stabilizing around 2001. China, for example, has a fleet six times larger than it had in 1979. In terms of the distribution of vessels, 84.8% are from Asia, 8.9% from Europe, 4.5% from North and Central America, 1.0% from Africa, 0.6% from South America and 0.2% from Oceania. (Greenpeace, 2006. FAO, 2004)

Regulating fishing in the world’s oceans requires effective participation by all the world’s nations in this most fundamental of “global commons.” The creation of the Law of the Sea Convention through the United Nations in 1982 provided a significant step toward regulating uses of oceans globally. Among its 320 articles and nine annexes, it established exclusive economic zones (EEZ’s) giving coastal nation states exclusive economic control over the ocean to a distance of 200 miles. While far from resolving disputes over deep-water fishing, the Law of the Sea treaty has been the basis of cooperation among various countries concerned with the over-fishing of deep-water stocks and the subsequent collapse of fisheries.

As a system of extraction of a commodity from a global commons, however, fishing offers a model paralleling that of land-base agriculture – rising global competition, capital investment in more effective equipment, reliance on fossil fuel energy, improved transport to distant markets – all of it ironically pointing toward the collapse or impending collapse of virtually all of the world’s major fisheries. (See Map/figure 9-6)

Map/figure 9-6  World Fisheries in Collapse or Overfished
This situation has moved many countries, Asian countries foremost among them, to expand their efforts to develop fish protein sources through various forms of aquaculture. The Food and Agriculture Organization (FAO) reports that the growth in global fisheries production over the past thirty years has effectively doubled, but only because of the significant contributions being made to global production by aquaculture, which grew at a rate of 9.1 percent in 2002, accounting for 39.8 million tons out of total global production of 133.0 million tons. This growth rate was higher than that for other animal food-producing systems such as terrestrial farmed meat. China’s expansion of aquaculture far exceeds global averages, outstripping the rest of the world. Thus, if one removes China from the world aquaculture food production picture, a far more modest image emerges, with global production actually in modest decline. Exclusive of China’s production, that for the rest of the world declined from a growth rate of 6.8 percent in 1970-80 to 5.4 percent in the decade 1990-2000.

It seems clear that globally the catch of wild fish can only retreat in the face of the intense pressures of major fishing fleets pushing fisheries to and beyond their capacity for sustainability. Aquaculture must continue to fill the gap created by the decline of open ocean fisheries. To preserve open ocean stocks, continued international negotiation must regulate fishing and punish over-fishing.

In November 2006 a scientific group of fourteen, consisting of marine biologists and economists, startled the world with an article published in Science that carried a warning: by the year 2048 the world’s oceans could collapse as active fisheries if current patterns of over-fishing and toxification of the oceans continue...
at existing rates. While others hastened to challenge these findings and conclusions, the precautionary message of impending danger for global fisheries makes it is clear that current patterns of ocean use are not sustainable. (Cone, 2006)

**Conclusion:**

This chapter emphasizes the degree to which global interdependence has come to shape the world food supply. The ever-increasing role of large capital, advanced technology, and reliance on energy uses have in effect created a new world-integrated food system, one in which people throughout the world share either the same or similar foods in ways not previously experienced. Despite the loss of some farmlands to desertification and urbanization, and despite world grain production recently not keeping pace with demands from population growth, the rising use of capital, technology, and energy has vastly increased global food production capacity. Combined with the efforts of modern marketing, this production capacity is changing global food habits, with the paradoxical outcome that many countries, including those rushing toward high levels of development, are developing new diseases associated with “over-nutrition.”

Nonetheless, as we have emphasized in other chapters on migration, urbanization, health, and energy, global inequality of income and malnourishment have increased as global interdependence on distant food resources has rapidly increased; in the desperation of the world’s growing number of poor we see the inevitable, darker but often unrecognized face of inter-dependence. A huge part of the world is poor and lacks the minimal food needed to sustain life. While one part of the world is in glut, another part of the world lives constantly on the edge of extinction. Farmers (agri-businesses) in many of the developing countries desperately search for markets for their production, even turning crops into energy conversion in order to find such markets.

From this perspective food sufficiency can be seen as composed of multiple, changing, but inseparable parts of a large puzzle. One part of sufficiency lies in capacity—the ability to grow, transport, and market food to those who need it. Another part of sufficiency requires that the food provided fulfills nutritional requirements. Yet another is access—do the people who need the food have the basis for purchasing it? Another is the rising demand from a growing global population, 76 million more humans per year to feed, testing the limits of all resources. And finally, is the present overall system of which all these elements are themselves a part sustainable over time? We will return to the overall question of sustainability in our chapter on environment.
Appendix A:
Hillary Mertaugh of the Agriculture Accountability Initiative cites a range of facts to support the proposition that the world food industry is rapidly becoming controlled by a small number of large firms.

1. By 2001 one year of mergers in the US food and drink industry, valued at $69.2 billion, was of greater value than the previous five. Concentration was greatest in the meat packing industry, which during the 1980s consolidated faster than any other US manufacturing industry since such data have been collected.

2. Within the agri-food system in the US, each sector is controlled by four or fewer firms controlling 40-80 percent of their respective markets.

3. Cargill, which is the largest privately held company in the world (its shares are not publicly traded), “is among the top five companies in US markets for ethanol production, flour milling, grain and oilseed processing, salt production, corn and soybean exports, terminal grain handling, animal feed manufacturing, turkey production and processing, pork processing, and beef processing.” (Mertaugh, 2003)

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i The primary text here is perhaps Brown and Kane, 1994. Lester Brown’s organization, Worldwatch Institute, is a source of complex and excellent data on the environment and the ecological implications for population from resource use. We discuss these matters further in our chapters on Population and Environment.

ii As one might expect in a policy debate in which the stakes are so high, the data cited by proponents and opponents of ethanol tend to support their own case. Opponents, for example, cite a mid-1991 UK study suggesting that at the BTU level, more energy is required to produce ethanol than is got from burning it, namely 76,000 BTU’s from burning vs. 85,000-91,000 BTUs to produce the same amount. (Common Sense, 2006). A recent study by an ethanol trade industry source in the United States, citing a University of Michigan study, indicates that the amount of energy that can be got from burning is in the area of 50% more than that required to produce it. This increase in efficiency is attributed to newer conversion technology. Critics again contend that without the massive governmental subsidies, using ethanol as fuel is economically unsustainable. To these debates must be added the more recent global studies that trace the effects of shifting food production to fuel use in one portion of the global system—the US—with effects taking place in others—e.g. forest lands being clear cut in the developing world to make more land available for good production. See Bukovinszky, 2008.

iii It is important to note that Barber’s argument juxtaposes homogenization through globalization and tribalism as the dynamic reshaping the world.
A compelling satire of the fast food franchise movement and its health consequences can be found at “Heart Attack Grill: Home of the Double Bypass Burger”
www.heartattackgrill.com/franchise.htm

Wikipedia provides a useful treatment of Gresham’s Law and some of its extensions to social behavior. The initial observation was that “bad money drives out good”, an observation made about 17th Century currency markets and practices in Europe: “Gresham's law says that any circulating currency consisting of both "good" and "bad" money, where both forms are required to be accepted at equal value under legal tender law, quickly becomes dominated by the "bad" money. This is because people spending money will hand over the "bad" coins rather than the "good" ones, keeping the "good" ones for themselves.” The Gresham's Law principle has been applied, by analogy, to many different fields.

For example, movie critics have invoked Gresham's law to explain why movies with innovative visuals and writing are rare but, once created, are much copied or made into sequels. The claim is that production companies and theaters see all movies as virtually interchangeable product, and prefer ones which are cheaper to make or that have less risk to promote.

In higher education, "diploma mills" have come into existence producing low-cost qualifications, which are often of little or no market value. It may seem that according to Gresham's law these "bad" diplomas ought to drive out the "good diplomas". However, unlike money, there is no law requiring employers to accept all diplomas as being of equal value and each employer is free to assess the value of qualifications as they see fit. Therefore Gresham's law does not apply.

In business, bad managers and employees can drive out good ones.

In human sexuality, a few promiscuous people can break up large numbers of stable relationships by provoking infidelity, effectively increasing the number of promiscuous people.

In democracy, a less intelligent majority may be able to out-vote an exceptionally intelligent minority, effectively driving out the most intelligent voters by guaranteeing that their votes will be defeated...

In schools, curriculum is prone to "dumbing down" to make it accessible to the least academically prepared students, thereby leaving no meaningful academic challenges for the better prepared students, or even students of average academic preparedness.

In the market for second hand cars, lemon automobiles (analogous to bad currency) will drive out the good cars. This is because the seller of good cars will find that the "average" price of both lemons and good cars is less than the fair price of the good car. See The
Market for Lemons for more information.” Wikipedia at: en.wikipedia.org/wiki/Gresham's_Law

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Chapter 11
Energy—The engine of globalization  2.0 12/30//7

As the end of the first decade loomed for the 21st century, the world energy picture was changing rapidly, threatening significant changes in patterns of global trade and economics.

2007 saw the world enter the era of peak oil. Oil prices doubled in a single year to just under $100 bbl, amid revelations of shrinking oil reserves. Nations rather than private businesses now control eighty percent of known oil reserves. Annual global demand continued to rise at 2.2m/bbl/d (million barrels a day). With total daily global oil production at roughly 86.5 million bbl, a consensus of experts agrees that we have reached peak oil, which means oil consumption is higher than new oil discoveries to replace what is used. This pattern of oil consumption exceeding discoveries has occurred for roughly the last 20 years, but now this shift has become glaringly evident. Add to the picture that major oil producers such as Saudi Arabia, Iran, Indonesia, Mexico, and Russia now consume their own oil at much higher rates, leaving significantly less available for export. According to the New York Times, “Experts say the sharp growth, if it continues, means several of the world’s most important suppliers may need to start importing oil within a decade to power all the new cars, houses and businesses they are buying and creating with their oil wealth.” (Kraus, New York Times, December, 2007)

Of some 98 countries producing oil, “64 are thought to have passed their geologically imposed production peak, and of those 60 are in terminal production decline.” (Strahan, 2007; Note: for an up-to-date review of which countries face declining oil production, go to http://www.lastoilshock.com/map.html) For oil production to match long term demand, discoveries must keep up with oil pumped and consumed. The world presently consumes, however, three bbl of oil for every one bbl it discovers, which means we are pumping more from shrinking reserves in the face of rising demand.

Globalization has relied on the worldwide availability of cheap energy, and cheap oil in particular. Now it enters uncharted territory where rising reliance on fossil fuels collides with serious damages from global warming and sea level rise caused by fossil fuel use. Growing economies suddenly find themselves in a race to secure scarce energy supplies -- oil in particular, yet the very use of such fossil fuels threatens catastrophic global climate changes which threaten severe potential damage to these same economies. Consequently, all economies now confront a need to cut their heavy reliance on fossil fuels.

The global climate change meeting in Bali in December of 2007, however, revealed developed countries still resisting changes which might cost their industries competitive advantages in trade. If effect, the world recognizes the urgent need for new international agreements limiting greenhouse gas emissions, but the largest emitter of gases – the United States – refuses join other nations in setting hard and fast standards.
Peak oil means all oil-producing countries face major capital investments if they hope to meet their growing energy demands. For example, a single new offshore well near Brazil will cost $243 million. Moreover, the changes underway in the forms of energy used and the need for limits on emissions show us energy as a catalyzing multiple redirections in how capitalism operates, international emissions agreements with clear-cut penalties and rewards, and new, innovative forms of global governance. The failure to reach agreements on national standards of emissions in late 2007 in Bali nonetheless suggested widespread acknowledgment of the need for new directions in globalization. A movement away from a focus on traditional self-interest and toward contributing to the global common good appears as an essential part of new operating principles for global capitalism. Without widespread subscription to these globalized emissions needs, globalization itself will now be visibly at risk.

The transnational corporations, global and regional trade agreements, foreign policies, and neo-liberal assumptions that have shaped globalization up to now have assumed the availability of inexpensive oil and cheap transportation. Peak oil and global warming, however, combine to mean oil reliant industries such as agriculture, construction, transportation, and energy production face wrenching changes to which globalization must adapt if it is to survive. Many of the technologies needed for this transformation of energy production and use already exist, but the world waits for signals that major industries, businesses, and governments will move fast enough to avert cataclysmic global climate change.

Threats to energy security fill the news. In late February of 2006 Al Qaeda militants attacked the massive Saudi Arabian oil processing plant at Abqaiq, where 7 million barrels a day of Saudi oil are processed for export to the world. The depot is encircled by three separate fences, and guarded by motion sensors and over a thousand troops, with F-15 fighter planes and helicopters circling the perimeter 24 hours a day. Despite these protections, Al Qaeda attacked this critically important oil source with two car bombs, both of which were exploded without doing any significant damage to oil facilities. Al Qaeda took credit for the attack and promised to continue to attack oil resources in the Middle East. (Associated Press 2006) Because the world has less than an estimated 2+ mbd (million barrels per day) spare production capacity, losing 7 mbd of Saudi oil would send a panic through global energy markets, and perhaps threaten the entire global economy. (Tertzakian, 2006) The February attack sent a shiver through oil prices in world markets.

Meanwhile, thousands of miles away in Nigeria, lightly armed revolutionaries from an army describing themselves as the Movement for the Emancipation of the Niger Delta (MEND) assaulted, took over, and threatened to destroy the production and distribution of up to one million gallons a day of oil from facilities run by Royal Dutch Shell. The self-described army of the poor kidnapped oil company employees, killed a dozen Nigerian troops, and demanded that oil profits from petroleum rich Nigerian be shared more with the poor. (New York Times, Feb/26/2006) By mid-summer of 2007, some 600,000 barrels of oil a
day were being stolen in Nigeria, with government officials implicated. This $12 billion a year loss (Ikokwu, AllAfrica.com 2007) required massive corruption: well organized thefts, tankers to move the oil, contracts for oil sales, and payoffs of the Nigerian military.

In adjoining Chad, another poverty-stricken country, the World Bank stopped payments on loans funding the $4 billion pipeline that carries Chad’s 240,000 daily barrels of oil to the Atlantic. The government of Chad reneged on a deal to share the oil wealth with its poor, putting its oil supplies in doubt. Elsewhere in Africa, when some Chinese oil workers were murdered in 2007 by Sudanese guerrillas, the three-year long civil war in the Darfur region in nearby Sudan threatened Sudanese oil supplies to China. The recent Chinese presence in the Sudan signals rising intensity in the competition for energy security.

In this new picture of world energy, civil wars, government corruption, expropriation of privately held oil reserves, ancient ethnic and religious hatreds, failed states, and developing country debt were all interrupting and raising the price of the global supply of oil. The pieces of the oil puzzle have taken on new shapes, and a new picture is emerging. In late December of 2007 global oil reached a new high in price, $99 a barrel, then hovered near $95 a barrel.

In Venezuela the oil minister announced that Venezuela would expropriate privately held oil production facilities and reserves. The Venezuelan government would now require energy transnational corporations (TNC’s) to sign partnership agreements sharing profits on a much larger scale with the Venezuelan government. Moreover, the Venezuelan Chavez regime indicated that it might stop exporting oil to the United States altogether, that is, use oil as a diplomatic weapon. The cause: Venezuela claimed that the U.S. had tried to rig the Venezuelan election, and having failed, that the U.S. was planning military action against the regime in Venezuela. In response, Venezuelan leader Hugo Chavez has encouraged Iran and oil producing countries in Latin America to resist any influence from the United States. Venezuela continues as the source of 16% of the oil that the U.S. imports, and China has recently bid for Venezuela to sell this oil into Asia.

Across Latin America, a pattern of greater state control of energy is emerging, with Bolivia the most recent country to nationalize its energy industry via partnerships required of private energy companies. Ecuador is also increasing the state’s share of energy profits. Amid windfall profits driven by uncertainties of global oil/gas supply, nations are deciding to take a much greater share of profits otherwise headed for the coffers of transnational energy corporations. With major new finds of oil/gas dwindling, transnational energy corporations have little choice but to comply, although international litigation will likely follow. These oil-producing nations follow the lead of Mexico, Iran, and Saudi Arabia, which long ago nationalized control of their energy resources. (New York Times May 3, 2006)
With the entire global energy picture shifting, several new vectors appear underway:

1. **Peak Oil Symptoms.** As oil guru Daniel Yergin puts it, “We’ve seen a return to a 1970’s style of resource nationalism riding along the crest of high prices . . . During times of low prices, governments are keen to open up. But when prices are high, they have the high cards.” Substantial new evidence supports his observation that reserves are now more important than investment capital for new energy sources. Venezuela has increased oil taxes on foreign energy companies from 56.6% to 83%. Bolivia’s government now raises its demands from 18% of sales to 82% of income from major fields. Britain, Kazakhstan and Nigeria have all raised their taxes on oil produced by private oil corporations. Such government demands and control provide a strong disincentive for private investment, and risk the possibility of fewer new discoveries and less production. Given the scarcity now appearing in energy markets, this pattern will create momentum toward higher prices. (Mouawad, 2006)

2. **Reserve Shortages.** The largest seven energy TNC’s (historically called the Seven Sisters) now control less than 5% of global energy reserves, and can invest freely in countries holding only 11% of reserves. With oil prices above $90 a barrel and their gross profits at record highs, the major energy TNC’s can no longer rely on ready access to the reserves that keep their stock values high. Nations such as Libya and Angola now have energy giants bidding for the rights to explore and produce (Mouawad, 2006), and melting Arctic ice now has industrialized nations vying for drilling possibilities in the Arctic Ocean. (Earthjustice,2007)

3. **Energy Security Politics.** Throughout 2006 and summer of 2007, Iran, which exports 5% of the world’s oil, issued threats that it might cut off oil exports unless the International Atomic Energy Agency (IAEA) stopped investigating its work on enriching uranium, a fuel that could be used both to produce nuclear energy and to develop nuclear weapons. While EU nations continued to broker a compromise, and the U.S. threatened possible military intervention, oil-rich Iran was also negotiating to build a pipeline to provide natural gas to India. The United States actively opposed the pipeline in order to bring pressure on Iran to stop its enriched uranium processing. Sudden and dramatic shifts to achieve energy security were becoming the norm in the global geopolitics. Many argued that the U.S. held a continuing presence in Iraq in order to secure access to its oil, and in fact the U.S. pressured the nascent Iraqi government to grant U.S. oil firms access and partial control of Iraq’s oil. By the fall of 2007, with the Iraq war still actively raging, and Iraq had still resisted all U.S. attempts to force private companies into partial control and production of Iraqi oil.
4. **Infrastructure age, accidents, and maintenance.** Although it has enlarged some of its refineries, the U.S. has not built a new oil refinery since 1976. With refineries operating near full capacity, refinery accidents have increased: witness the March, 2005 explosion that killed 15 at the BP plant in Texas and shut down operations, creating a scarcity of product. When several refineries schedule maintenance simultaneously, it leads to gasoline shortages and pressure to raise prices. In 2006, delays in repairing Hurricane Katrina damage to undersea infrastructure in Gulf of Mexico offshore wells left 25% of U.S. oil production still not operational. Given the depletion of the remaining deposits they draw on, many of the platforms torn loose in the storm were deemed too expensive to repair, which also translated into lost natural gas production capacity.

5. **Impact of Climate Change.** Add to the picture the following information—according to over 2000 scientists in the United Nations Intergovernmental Panel on Climate Change, rising global uses of fossil fuels are throwing the earth’s natural systems seriously out of balance. Globalization has arrived at an ironic tipping point. Burning coal, oil, and gas in greater quantities to support global economic growth has triggered the beginnings of serious global warming that is already increasing desertification, depleting glaciers as fresh water sources, melting polar sea ice, altering ocean currents, and destroying crops and natural resources, all patterns which suggest that global warming may cause the global economy to falter or in part collapse. C02 from fossil fuel constitutes 70% of all greenhouse gases. We have arrived in uncharted territory where assumptions about uses of available fossil fuel energy resources must change in order to preserve world economic order. At the Asia Pacific Economic Cooperation meeting in Sydney in September of 2007, 21 developed and developing nations adopted only non-binding greenhouse gas emissions targets. China acknowledged the need to limit its carbon emissions. (Hutzler, 2007)

6. The windfall profits from the rapid rise in the cost of oil now take the form of investments by oil producers in the assets of businesses of the United States and the European Union, that is, international oil sellers are becoming global lenders and investors.

**The Global Picture of Energy**

Each of the events and patterns noted above about oil producing and oil consuming countries represents a small piece of an emerging picture of global problems linked to energy use. With global demand for oil rising, the world annually needs 2 million more barrels of oil a day. Consequently, demand threatens to move beyond supply, and proponents of globalization describe a worldwide race to assure the security of all energy supplies -- oil, natural gas, coal, nuclear, and alternative sources.
The integrated global energy equation has traditionally included variables of capital, labor, intellectual capital, supply balancing with demand, public policy encouraging production, free trade agreements, and favorable political environments. Now this mix includes anxious questions about who controls what and who has available energy at any price. Secure energy, and energy at lower prices are rapidly becoming much more important parts of the comparative advantage equation, influencing the underlying assumptions that drive globalization -- what goods will be produced, where production occurs, and if goods can be inexpensively transported. Rising oil prices also foreshadow inflation in everything from food production to airline travel.

**Government Policies Adapting**

As they focus on domestic energy security and how it links to domestic employment and tax revenues, national governments are now altering or refusing to permit energy takeover attempts of one nation's companies by those from another nation, takeovers that commonly have occurred earlier in contemporary globalization. For example, British officials expressed opposition to the Russian government-controlled Gazprom trying to take over British gas concern Centrica; the Spanish government blocked an attempted German purchase of a major electrical utility; France declined to let the Italian energy business Enel acquire the French utility Suez /Gaz du France,( Timmons, 2006). In the western hemisphere the U.S. government signaled an unwillingness to allow China to acquire the American based oil/gas giant Unocal, a sale that eventually was permitted to Sinclair, an old American oil firm. China reportedly has proposed a pipeline with Canada to send supplies of oil from the oil-rich tar sands of Alberta Province to Canada's west coast. (CNN, 3/19/06) Moreover, to keep competitive bidding from raising takeover prices, China and India have agreed to make joint proposals for international energy takeovers. In the face of impending oil scarcity, and with oil prices rising, nations have begun to look more anxiously toward where their energy sources lie and at who controls their energy security. In the process, they have begun rebuilding trade barriers that may stem the flow of capital across borders, altering the overall character of globalization.

On a global scale, factories, retail businesses, the service economy, all forms of shipping and transportation, electrical production, home and business heating and cooling, mining, fishing, farming and food production, health care, government operations, military forces, computers and the Internet -- all depend heavily on secure supplies of energy. While some 1.7 billion people around the world still live without electricity, cheap available energy makes wealth possible in industrial economies worldwide. Those economies that live with severe energy shortages face dire poverty and social chaos. Absent the energy for fertilizer, farm equipment, food transport and distribution, and refrigeration, the world would not be able to feed 6.63 billion people, much less the 76 million new humans added to the global population each year. The global trade in food would shift significantly. But after a century with only two significant Organization of Petroleum Exporting...
Countries (OPEC) interruptions in oil availability, and despite elaborate global energy supply systems, the entire global status quo of energy faces a series of major changes, and the fears that attend uncharted territory. As key sources of energy grow scarce or change form, dominant global economies are forced to acknowledge new vulnerabilities, and the persistent growth of globalization no longer appears inevitable. Moreover, serious controversies and conflicts with global implications are multiplying in direct proportion to growing evidence that oil production appears unable to meet future demand. The combination of rising energy demands and their impact on global warming has created a monumental dilemma. Economic growth, the very essence of globalization, has succeeded in such measure that its excesses threaten its own existence.

In this chapter we consider:

1) Known global reserves of various sources of energy versus demand for them;

2) The problems that growing energy consumption pose for globalization, particularly some of the geopolitical, economic, and military consequences of the demand for oil and natural gas exceeding supply;

3) A brief review of the environmental threats that fossil fuel emissions present via global warming, climate change, sea level rise, and damage to ecosystems, farming, and human health. A review of the larger environmental implications of globalization follows in Chapter 14.

We ask the reader’s indulgence with the many numbers used to describe energy demand, reserves, supply, and other facets of the global energy picture. Familiarity with these data is essential in understanding the increasingly problematic global energy outlook.

Global Energy: Supply and Demand

Focusing on the demand side of the energy equation makes it a bit easier to understand the shifting patterns in which multiple sources of energy supply the world economy. Consider overall energy demand: in 2003 an aggregate world product of some $56 trillion in goods and services consumed a total of 412 quadrillion BTU (British Thermal Units) of energy. As the human population of 6.6 billion adds roughly a million more people every five days, and as national economies grow, this demand for energy grows accordingly. (Population Reference Bureau, 2006) For example, China, with only 2.3% of global oil reserves, has 20 percent of the world’s population in an economy growing annually at more than 9%, and it now faces both energy shortages and serious environmental damage from fossil fuel emissions. If China’s rising demand for oil continues apace, China will double its present oil demand of 8 million barrels a day (mbd) to 16 mbd in roughly twelve years. Increased demand from other
sources aside, this rising Chinese demand already puts pressure on oil producers, on other global oil consumers, and on prices.

The Replacement Ratio

In the array of global energy sources, 39% of all the energy presently consumed comes from oil, and the International Energy Association (IEA) estimated global demand for the winter of 2007 at nearly 88 million barrels a day (mbd). In September OPEC agreed to add 500,000 bbl a day to its production, yet oil prices continued to surge toward $95 a bbl. (Wall Street Journal, 2007) Discoveries and new oil fields coming into production do not appear capable of meeting the growing demand expected for oil over the next ten to twenty years, much less of supporting larger economies through 2050. New oil sources do not fulfill what oil producers call the replacement ratio – adding as many new barrels to oil reserves as were consumed from reserves in a given year. Meanwhile, although present production capacity remains a subject of controversy, a consensus of oil observers indicates that production is nearing or has already reached its limits, that is, oil producers have little elasticity of supply to bring the world increasing amounts of oil. The world’s 14 largest oil fields produce 20% of what is presently consumed, but these fields average 54 years in age, a stage at which most fields are expected to diminish production. (Sykes, 2005.) According to the Financial Times:

“senior Saudi Arabian energy officials [privately warned in 2005] US and European counterparts that OPEC would have an ‘extremely difficult time’ meeting [increasing world demand.] Saudi Arabia calculates there is a 4.5m b/d gap between what the world needs and what the kingdom can provide…Saudi Arabia has the world’s largest oil reserves and will have to produce up to half OPEC’s production growth in the next 10 to 20 years, with the rest primarily coming from Kuwait and the United Arab Emirates.” (News International, 2005)

Reserves aside, the actual production of oil reveals non-OPEC countries presently produce 48 million barrels a day, and OPEC producing about 38 mbd for a total of just under 86 mbd. According to the International Energy Agency, oil consumption rose 1.1% in 2005, but in 2004, it moved up a surprising 3.8%, doubling the last decade's average rate of increase. (Mouawad, 2006)

In order to meet demand by 2010, non-OPEC countries are expected to produce 55 mbd and OPEC countries 48 mbd, a total of 103 mbd. (The Economist, 2006, p. 106) Just how this significant addition to production will occur remains a mystery. In calculating reserves, it warrants mention that oil wells in fact deliver anywhere from 15% to 50% of the oil they harbor, and that as wells age, they also see an annual drop of 5% or more in their production. Reviewing the global array of existing wells, this drop multiplies exponentially to a loss of 148 mbd by 2020, 176% of present consumption—oil that either must be
recovered from existing wells with new technologies, or discovered and brought to market. (Tertzakian, p.128,)

Experts struggle to make accurate oil production capacity estimates. New oil in uncertain measure – as much as 4 mbd – is expected to come from the Caspian Sea region by 2010 if Islamic jihadis do not sabotage its production and transport. Saudi Arabia draws principally on wells over fifty years old, wells said to be past, at, or nearing their peak productive capacity. Russian oil sources recently reported that they may have three times their proven reserves of 60 billion barrels (MosNews, 2004) Algeria, Kuwait, Libya, and the United Arab Emirates (UAE) combined are expected to add 2 mbd, and West Africa’s Nigerian delta region is also expected to add 2 mbd in this time frame as well. (The Economist , 2006) Canada’s oil tar sands reserves rank second only to Saudi sources, some 300 billion barrels, and with significantly improved extraction techniques, hold perhaps as much as a trillion bbl. (Kerner, 2004) Despite hard evidence that extracting tar sand oil is far more expensive, energy intensive, and environmentally damaging, these fields are projected to yield as much as 3 mbd in ten years (CNN, 3/19/06). U.S. production is expected to decrease from 9.5 mbd to 8.5mbd, then begin to drop off steeply in the years after 2010. With a few notable exceptions, other world sources are largely seen as unable to sustain present production rates.

Against these estimates and questions about sufficient supply, OPEC increased global supplies by 500,000 bbl in the fall of 2007. The U.S. Energy Agency projects that the world will need an additional 18 to 20 mbd by 2010, As a measure of how rapidly oil is used as it comes to market, the world’s market inventory levels in late February of 2006 stood at about 3.7 days worth of oil demand –328.3 million barrels, up from 300.9 million barrels a year earlier. (Mouawad, New York Times, 2006)

This information on global oil supplies merits some further analysis to allow the nuances of the issue to emerge. Despite varying claims about proven versus unproven reserves, global petroleum analysts generally agree that the peak of global oil production (the amount that can be pumped at sustained rates) either is now arriving or will arrive within the next decade. A BP Amoco study in 1999 put proven global reserves of oil at 1,033 billion barrels (bbl), with estimates of unproven reserves somewhere between 200 to 900 billion bbl. While geologists disagree on the possibilities for discovering major new sources, early in the 21st century authoritative estimates indicate that the world has roughly 1250 to 1950 billion barrels of oil to draw on, that is, an average of 1600 billion barrels of combined proven and unproven oil reserves as yet untapped. [Klare, 2001]

On a demand scale, the United States, the world’s largest oil consumer, presently consumes 21 million out of the 86 or so million barrels per day now produced, that is, 5% of the world’s people use 24% of the global oil supply. The U.S. harbors some 28 billion barrels of oil—2.9% of global oil reserves -- but is
depleting its known stores so rapidly that it faces ever greater need for oil imports. [Klare, 2001, pp. 54-5 and 85.] For example, if the U.S. were to rely solely on pumping U.S. oil, at present rates of consumption the US would exhaust all of its oil in a stunningly short period of time -- about 4 years (Kunstler, 2005) In contrast, the heavy concentration of oil reserves in the Middle Eastern countries -- with 673 billion barrels or 65% of proven global reserves in just nine countries.

Add another variable to the picture. The ability of a production system to operate reliably and efficiently at peak capacity over a long term is highly unlikely. Recent significant losses from Hurricane Katrina to U.S. Gulf oil and gas production, refinery breakdowns, and the BP pipeline rupture in Alaska demonstrate the serious uncertainties of oil supplies and overtaxed infrastructure. The global oil supply system, from well to gas tank, operates presently at 97.5% of capacity, which means it is stretched to the limit and has no margin of error – a situation that imperils the entire oil-reliant world economy. (Tertzakian, 2006) Against the multiple hazards of interruptions in supply—for example, another hurricane interrupting offshore oil production or a fire at a major refinery—the U.S. maintains a Strategic Petroleum Reserve of 680 mb – effectively 32 days worth of imported oil at present consumption rates.

Table 11.1 Major Oil Producing Countries By Percentage of Known Reserves.

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage of Known Reserves</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saudi Arabia</td>
<td>25.0</td>
</tr>
<tr>
<td>Iraq</td>
<td>10.5</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>9.3</td>
</tr>
<tr>
<td>Iran</td>
<td>8.5</td>
</tr>
<tr>
<td>Venezuela</td>
<td>6.9</td>
</tr>
<tr>
<td>Russia</td>
<td>4.6</td>
</tr>
<tr>
<td>Mexico</td>
<td>4.5</td>
</tr>
<tr>
<td>US</td>
<td>2.9</td>
</tr>
<tr>
<td>Libya</td>
<td>2.8</td>
</tr>
<tr>
<td>China</td>
<td>2.3</td>
</tr>
<tr>
<td>Nigeria</td>
<td>2.1</td>
</tr>
<tr>
<td>North Sea</td>
<td>1.5</td>
</tr>
</tbody>
</table>

Table 11.1 indicates the world’s major known oil reserves. This total represents 90.1% of global oil reserves presently in production. Again, recent discoveries in the Caspian Sea area of Asia and in the coastal areas of West Africa (Chad, Nigeria) are supplying significant new reserves. (International Energy Outlook, 2005)
With the exceptions of the Caspian Sea and West Africa fields, the Canadian and Venezuelan oil tar sands that are costly to extract, and Russia's newly determined reserves of as much as 150 billion barrels, significant new discoveries of oil elsewhere have fallen, and many major oil producers such as those in the North Sea and Mexico witness their maturing wells reaching or now extending beyond peak production capacity. Meanwhile, total global energy consumption is predicted to rise rapidly -- by over 50% -- by 2025, to 645 quadrillion BTUs. (International Energy Outlook 2005) Where much of the additional oil segment of this energy must come from is obvious. Aside from the discovery of some so-called “elephant” fields of 1 billion barrels or more off Algeria and Chad, the Middle Eastern countries hold two-thirds of the world’s known reserves. Nonetheless, as indicated above, Saudi Arabia, the largest of these sources, currently shows little interest in expanding rapidly to meet a greater share of rising demand by adding capacity or increasing its supply from existing wells and infrastructure. This combination of rising demand and in part accounts for oil prices in early 2008 hovering around $95 bbl. Consequently, the questions of if, how, and when Middle Eastern countries respond to rising demand and draw
considerably more from their reserves have become the puzzles which must be
solved to ensure the future of globalization. As observer Peter Gamble puts it,

“the power that exercises a dominant political influence over the
sheikdoms in effect governs the market. . . Secondly, oil revenues are
vital for the entire structure of global finance capital and banking interests .
. . the passages of that money are ultimately controlled by the power
which defends the Saudis – the USA. (Gamble, 1999.)

Whatever the military investments and diplomatic hopes of the U.S. for a
regional Middle East energy hegemony, or China’s aggressive reliance on one
region in turmoil to deliver more oil, the competition concentrates energy risks for
the entire globe. Writer Michael Klare sums up the declining situation succinctly:
"we appear to be entering a permanent energy crisis." (Klare, 2001)

Natural Gas

Natural gas supplies roughly 23%, of all global energy, with its use
projected to grow by 2.3% annually, meaning the world will need 70% more
natural gas by the year 2025. (International Energy Outlook 2005) Just where this
much natural gas will come from poses an alarming mystery at this point. Natural
gas produces significantly lower carbon dioxide emissions than oil or coal, and is
easily transported by pipeline. For example, the European Union (EU) imports
major quantities of gas from Russia, which has the world’s largest natural gas
reserves. The winter of 2006-2007 saw political strife in Eastern Europe when
Russia refused to continue to provide lower gas prices to some eastern European
countries.

Problems arise where gas cannot be transferred by pipeline. It must then
be refrigerated to extremely low temperatures to liquefy it, shipped in double
hulled transport ships, then unloaded with extreme care because escaping super-
cooled gas is known to hug the ground as it gasifies, then find a spark and cause
major explosions. Many ports refuse to accept ships carrying liquefied natural gas
(LNG).

World Natural Gas Reserves

Proving subterranean reserves of natural gas involves geology, politics,
marketplace forces, and changing technologies. According to the U.S. Energy
Information Administration, proven global natural gas reserves are estimated at
5,210.8 Trillion Cubic Feet(Tcf). The Middle East holds 1,836.2 Tcf, or 34
percent of the world total, with Europe and the former U.S.S.R. with 2158.7, or 42
percent of reserves. The United States, with 3 percent of the world total natural
gas reserves, ranks sixth among nations, with Nigeria, Algeria, and Venezuela
following closely behind.
Table 11.1 Largest Natural Gas Reserves by Country

<table>
<thead>
<tr>
<th>Country Rank</th>
<th>Proved Reserves (trillion cu ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Russia</td>
<td>1680.0</td>
</tr>
<tr>
<td>2. Iran</td>
<td>940.0</td>
</tr>
<tr>
<td>3. Qatar</td>
<td>910.0</td>
</tr>
<tr>
<td>4. Saudi Arabia</td>
<td>235.0</td>
</tr>
<tr>
<td>5. United Arab Emirates</td>
<td>211.1</td>
</tr>
<tr>
<td>6. United States</td>
<td>189.0</td>
</tr>
<tr>
<td>7. Nigeria</td>
<td>176.0</td>
</tr>
<tr>
<td>8. Algeria</td>
<td>160.5</td>
</tr>
<tr>
<td>9. Venezuela</td>
<td>151.0</td>
</tr>
<tr>
<td>10. Iraq</td>
<td>110.0</td>
</tr>
</tbody>
</table>


**Coal**

Of the remaining hydrocarbon energy sources, coal supplies 24% of global energy. At present demand rates coal reserves are abundant enough to last through the 21st century. According to the U.S. Energy Information Administration, coal demand will nearly double from 2003 to 2030, with non-OECD countries accounting for 81% of this increase. Globally, coal’s share of total world energy consumption will increase from 24% to 27% in 2030. Over 80% of increased use is projected to come from China and India, which have abundant supplies. (U.S. Energy Information Administration, 2006)

Coal causes major environmental damage and harms human health during production, transport, and use, destroying landscapes, polluting waterways, and filling skies with toxic emissions. New technologies for cleaner burning of coal and gasification of coal show unproven promise in limiting the significant emissions of sulphur, mercury, and toxic particulate matter. Experiments in capturing and sequestering underground CO2 from coal burning are underway, the hope being that coal, a huge contributor to global warming and human health problems, can be used without its current contributions to global atmospheric pollution. Further experiments include a promising new algae CO2 processing scheme that has yet to achieve commercial use. It warrants mention that scientific uncertainties attend many of the efforts at sequestering CO2 in oceans, or in new forests. Science magazine has reported that keeping existing forests and adding more trees appears to be a more effective way of sequestering carbon than using fuels such as ethanol from corn. (Science, 2007)

**Nuclear Power**
Seven percent of global energy is supplied by nuclear reactors. Aside from their military and research uses, nuclear sources presently supply 16% of global electricity. Many nuclear reactors have now aged to the point where they face shut downs and costly decommissioning; seven new plants are being built and ten more are presently planned. Nuclear engineers claim that new designs for smaller reactors will make nuclear energy much safer. Disposal of nuclear wastes, however, remains a seriously vexed question. It requires large government subsidies and strong regulatory oversight to control toxic radioactive byproducts. These materials pose extreme hazards, including possible uses in atomic weapons by terrorists. Also, the deadly wastes will last tens of thousands of years. Traces of wastes at nuclear plants in the U.S. states of Washington and Colorado have led to legal suits based on claims that the wastes cause cancers. Also, Three Mile Island and Chernobyl remain as mute testimony to the risks of a nuclear meltdown at an electrical plant. Estimates project nuclear sources to produce 17% more electricity by 2025, the preponderance of it from new plants in China, India, and Korea, but given increases in energy demand, this amount of growth may then leave nuclear with a smaller percentage of the total energy picture. Developing enough safe nuclear plants to produce that much energy will test governments, scientists, investors, and international oversight officials from the International Atomic Energy Agency (IAEA.)

Renewable Energy Sources

Renewable energy sources such as hydroelectric, biomass, wind, solar, wave, tides, ocean thermal energy conversion, geothermal, hydrogen, biofuels, and other sources supply the remaining 7% of world energy. (U.S. Energy Information Administration, 2005) With its solid Kyoto Treaty commitment to lowering CO2 emissions, the European Union is leading the way in introducing wind energy as a major alternative to reliance on fossil fuels, with over 20% of energy in Germany and Denmark coming from wind. Escalating energy demand in China has also led recently to a planned 1000 megawatt wind energy system, and the massive Three Rivers Dam for hydroelectric power. Wind and solar sources have experienced over 48% global growth annually in recent years, with wind particularly competing favorably with fossil fuels on price. Renewable solar energy in the form of concentrated solar power or photovoltaic power continues to witness quantum improvements in production, efficiency, and distribution. Notably solar energy can now come from a photo voltaic thin film that can be stretched across almost any surface. This film rivals coal in its price of production at $1 a watt. Ethanol and bio-diesel also have made major advances in production with subsidies in places such as Brazil, the United States, and China. New alternatives also show promise: wave energy; hydrogen taken from water; ocean thermal energy conversion; and research into renewable forms of energy which an experimental device can generate from carbon dioxide itself.

Nonetheless problems with alternative sources abound. In order to become significant parts of global energy supply, both wind and solar must achieve scalability, i.e., continue to improve their efficiencies and receive both
massive government subsidies and incentives, major private investment, and huge increases in new production and distribution, all very soon. Germany, Denmark, and China all have successful major expansions of solar energy underway. Reports of breakthroughs in photovoltaic efficiency occur almost weekly. In the U.S., spray-on solar power film has become a reality, and so-called CSP, concentrated solar power production, is expanding. But the question remains: can global energy producers expand and improve solar and wind rapidly enough?

Ethanol from corn has the attraction of cutting perhaps 20% of carbon emissions, depending on the entire cycle of its production. Sugar reduces carbon emissions more than twice as much as corn, and cellulosic grasses may cut three-quarters of its carbon emissions. Ethanol is now required as a 10% mix in gasoline in some parts of the United States, and Brazil relies heavily on it for automobile fuel.

Some sources of biodiesel such as soybeans, palm oil, and jatropha trees have a similar graduated scale of emissions, with jatropha thus far the most promising with lowest emissions. Growing fuel, however, means -- among other things -- competing with land use for crops, using fertilizers and pesticides, and competing for uses of increasingly scarce water supplies. This competition for land and water has already set global food prices soaring. Waiting in the wings is extraordinarily clean and efficient energy from hydrogen, which has known technologies that already sell the equivalent of 1.2 billion barrels of oil annually in the U.S. Hydrogen is actually far safer than gasoline for fire hazard, and price competitive with gasoline at the equivalent of $2.50 a gallon. A breakthrough signals that biofuels made into charcoal may become a source of hydrogen production.

Energy Demand

The U.S. Energy Information Administration predicts major increases in the uses of electricity across the globe, with developing economies increasing uses by 4% a year, and the overall global electrical demand increasing by 2.6% annually, nearly doubling electrical demand by 2025. (U.S. Energy Information Administration, 2005) Obviously meeting such demand will require huge new investments, increasingly heavy reliance on coal with its emissions problems, more oil/gas than presently appears available, and much greater energy from alternative renewable sources. It will also require new technologies and substantial conservation measures and incentives, but more on these subjects later in this chapter. Finally, it will require multiple effective ways to stop greenhouse gases from exacerbating global warming.

The larger picture of global energy, then, is a jigsaw puzzle whose many pieces continue to change shape. Consequently the pieces have yet to fit together in a coherent new version of the larger picture. Moreover, as oil scarcity becomes
more prevalent, continuing energy uncertainties will likely shape a troubled future for globalization.

To grasp just how fast energy demand is growing, it is useful to examine what growing economies will require if globalization continues its anticipated growth pattern. Then consider how rising demand will require shifts in where the energy for globalization will be found, who will control it, and how it will be distributed.

The U.S. Department of Energy predicts demand for oil rising from 85 mbl/pd to 119 or 125 mbl/pd in 2025, a rise of 45% to 50%, but just where that much oil will come from remains the central mystery on which globalization turns. (U.S. Energy Information Administration, 2005) Mature world economies are increasing their annual demands for energy by 1.1%, while in emerging economies the demand for more energy annually grows at the rate of 3.2%, with China’s oil consumption leading the way with an annual growth of 5.8%. Already China has recently become the world’s second largest consumer of oil behind the U.S., with both of these industrial powers relying ever more heavily on oil imports. The United States imports more that 60% of its oil, a percentage that rises annually as U.S. production exhausts its known reserves.

Eyeing the hard realities of global oil supply and demand, David O'Reilly, CEO of Chevron, a major global energy TNC, took out full-page ads in the New York Times in February 2006 saying: “One thing is clear, the era of easy oil is over.” (Klare, February, 2006) O'Reilly was emphasizing not only dwindling reserves, but the hard fact that the most accessible oil has already been found, and it will take progressively more energy to extract oil and gas. Tar sands and shale oil cost far more to extract and refine, and new oil discoveries will come only from places where their extraction will also be more difficult and costly. Gary McMurtry of the University of Hawaii put it another way in a March 2, 2006 speech entitled The Future of Industrial Society at the End of Cheap Oil, or It's Only the End of the World as We Know It. He stated,

“ The ‘tipping point’ will come when the global supply of fossil fuels begins to lag behind growing demand, at "Hubbert's Peak," not, as commonly believed, when all oil and natural gas are depleted. Hubbert's global peak is either upon us now, or may extend a few more years to 2010 or 2015 at the latest.” (McMurty, 2006)
Numerous other observers add that a sense of entitlement to an abundant consumer way of life among people reliant on cheap oil has led these populations to use sophisticated forms of denial, what McMurtry describes as, “a tragic point in the human experiment at industrial civilization.”

**Some Consequences of Fossil Fuel Limits**

In the Lewis/Harrison scenario, however, all forms of fossil fuels -- oil, gas, and coal -- will by 2050 face serious limits, partly because of diminished oil reserves, but also because of the absolutely essential need to limit greenhouse gases to inhibit global warming. Rapidly rising CO2 emissions are collecting in both the atmosphere and the oceans, particularly in the mid-level depths of the oceans, trapping heat and advancing global warming. The last century saw a one degree advance in global temperature, but now analysts continue to announce new projections of temperatures rising 50% more rapidly, anywhere from 3 to 11 degrees Farenheit (1.67-6.1 degrees Centigrade) in the 21st century.

Increasingly, signs in nature around the globe – melting glaciers, changes in ocean currents, droughts, intensified hurricanes -- support these estimations. As for hopes of carbon being held underground, coalmines, gas and oil fields, and other underground depositories lack the necessary capacity, and more, this kind of sequestration is not a technically proven solution. Carbon stored underground is considered likely to leak back into the atmosphere. Carbon emissions stored in
oceans is an unproven technology. Given the volume of carbon presently being emitted, and gauges of as much as 100% or more being emitted in 2050, proposals for deep ocean storage of carbon could mean changing the pH chemistry of vast parts of the seas, and hence are not considered a viable option. (Harrison, 2006) Keeping atmospheric C02 at or below 350 parts per million, considered necessary to abate global warming, would make carbon-free power a necessity.

In light of a 10TW (terawatts) projected energy demand in 2050, the following energy sources might supply these amounts, according to Harrison drawing on Lewis’s research.

1) Biomass sources of 3 TW are possible but would require 600 million hectares of land, the use of which would seriously diminish food crops. As food is expected to be scarce as well in 2050, biomass has serious built-in limits and still produces greenhouse emissions.

2) Wind has a global potential for as much as 2TW, but it would require massive forms of storage for windless periods, and though growing rapidly in the early 21st century in northern Europe, it is not expected to produce 2TW in 2050. Amory Lovins says, however, that in North America wind energy in North and South Dakota could supply all of the energy needed for the entire continental United States. Wind energy can be saved by pumping water uphill during low energy demand periods, then using the falling water for hydroelectric power during windless times.

3) Global geothermal possibilities are minor, but hydroelectric power could generate as much as 3TW, unfortunately at a cost of stream flow and river fish propagation. The easy hydropower sources have already been tapped.

4) Ocean Thermal Energy Conversion (OTEC) might supply as much as 10% of what will be needed, but it has yet to receive investment in any serious measure and be proven as a technology. Wave energy is just emerging as an energy technology.

5) Solar energy has a global potential of 600TW and practically holds the greatest and perhaps the only promise for supplying a clean, renewable 10TW, or far more. Like other renewable clean sources, its cost has made it less competitive, but the demands of global warming for clean energy are combining with improvements in solar technologies to make solar energy more efficient, cost competitive, and attractive for investments. Notably the city of San Francisco recently issued a $100 million bond issue to transfer civic buildings to solar energy.

**Peak World Oil Production and the Road to the Olduvai**

According to The New York Times, “This year’s studies by the Intergovernmental Panel on Climate Change concluded that centuries of
warming, rising seas, and species extinctions would likely result without sharp curbs in emissions. Logic requires that we listen to the science,” Stavros Dimas, the European Union’s environment commissioner, said today. “I would expect others to follow that logic.” (Fuller, 2007)

Energy analyst Richard Duncan has developed an disaster-focused energy theory, the so-Olduvai theory, which, he says is “easy to understand and distressing for most people to accept”. He calls it an “inductive theory based on world energy and population data, i.e., energy production per capita.”

Duncan compares the growth of world energy production (use) with the growth of world population (the source of demand) in order to gauge the life expectancy of Industrial Civilization, i.e., energy growth vs. population growth, with no examination of the considerable differences in energy use among different populations. He sees the mature period of Industrial Civilization lasting roughly 100 years, from 1930 to 2030. Duncan cites global energy production per capita from 1945 to 1973 as growing at a pace of 3.45%/year with energy production outstripping human population growth. But from 1973 to 1979, the all-time peak of oil production vs. population, production growth dropped to a level of 0.64%/year. Then without warning energy production per capita entered a long-term decline of 0.33%/year from 1979 to 1999. The Olduvai theory explains the dropping ratio as simply population and its demands growing faster than energy supplies, i.e., energy efficiency improvements aside, demand is seen as overwhelming supply, and supply being unable to recapture its former strength. . . Duncan adds that:

“[e]nergy production per capita will fall to its 1930 value by 2030, thus giving Industrial Civilization a lifetime of less than or equal to 100 years. Should this occur, any number of factors could be cited as the ‘causes’ of collapse. I believe, however, that the collapse will be strongly correlated with an ‘epidemic’ of permanent blackouts of high-voltage electric power networks worldwide . . . You are back in the Dark Age. And the Stone Age is just around the corner.’""

Hence, the name the Olduvai theory, alluding to the African site credited as the place of first human emergence in evolution. Duncan says the per capita data suggest that the global economy is seriously at risk unless new energy sources can rescue it. He adds, “If the life expectancy of Industrial Civilization is less than or equal 100 years, then globalization will simply become a brief interlude in human history . . .” (Duncan, 2000.)

Some Consequences of Energy Scarcity

Energy scarcity has immediate consequences, some of them potentially devastating for energy-reliant economies such as that of the U.S. With 2007 world price rises in oil to the range of $75 to $82 bbl, the oil share of the U.S.
balance of payments deficit increased in one year to $360 billion, a major flow of dollars enriching foreign oil sources exacerbating the balance of payments debt that threatens America’s control of its economic future. During the same period, the OPEC nations selling oil to the U.S. saw their annual profits from the U.S. increase by 29%, to $92.7 billion. (New York Times, 2006) As stock markets demonstrated in 2006, threatened interruptions in oil supplies would lead to further swings in the price of oil and sudden shifts in the U.S. and global stock markets. It is worth noting that sales of oil worldwide are denominated in dollars, which also means that any significant drop in the value of the dollar could mean a corresponding drop in the price of oil. (Which could have a variety of both intended and unintended consequences. Iran, for example, has repeatedly suggested that oil sales be based on the Euro as its base currency, a prospect that could lead to a wide-spread global restructuring of dollar-denominated trade.)

What Globalization Will Require in Energy: Shifting Politics and a Shifting Set of Targets

Oil Requirements

Having enough oil to meet rapidly rising global demand will require:

1) The obvious -- discovering more oil, huge amounts, for existing reserves are rapidly depleting as demand is rising. Global warming, however, will require substantial cuts in fossil fuel reliance;

2) Investing in and developing new technologies to get more oil from known sources;

3) Substantially more investment in discovery, production, and refining;

4) Creating major new and effective conservation measures that substantially cut demand, such as hybrid autos with significantly better mileage and incentives to replace uses of fossil fuel. Technologies can now upgrade electrical grids to conserve energy;

5) Lowering prices of alternative renewable energy, in part by cutting subsidies to fossil fuels to make energy competition fairer.

6) Assuring that transportation systems keep oil supply routes open in the face of terrorist sabotage of oil production fields, pipelines, terminals, and tankers;

7) Developing an entirely new approach to automobile production that makes cars far lighter and safer, using innovations that allow them to expand mileage to hundreds of miles per gallon;
8) No major wars or serious diplomatic problems in oil producing regions, or between major oil producers and major oil consumers. For example, any Middle East regional threats of strife will threaten global energy security, and with it the entire global economy.

Natural Gas

Global natural gas demand in 2003 was estimated at 95 trillion cubic feet, with demand projected to increase to 182 trillion cubic feet by 2030. (International U.S. Energy Administration, 2006) Like oil, gas is subject to both scarcity and international politics. For example, Russia and Iran are the globe’s number one and two gas producers, but the pipelines to carry their natural gas to Europe and India require massive investment and are vulnerable to sabotage by terrorists. The willingness and ability of the United States to ensure safe transport for energy on a global basis is now coming into question. In the face of soaring U.S. federal deficits and rapidly rising U.S. balance of payments deficits, U.S. global force deployments appear stretched to the limit of both U.S. forces and U.S funding. Unless the U.S. continues to supply this regional security, ensuring energy sources will become all the more a demand on the national budgets of those nations most reliant on oil and gas imports, such as Japan, China, and most of the twenty nations of the EU. These countries may well face continual increases both in spending and troop deployments to ensure energy supplies, and these expenditures will likely displace domestic programs that in turn, for industrial countries, will have amplified domestic political and social consequences. For example, The Economist Reports China experienced a reported and rather amazing total of 74,000 riots and civil disturbances in the year 2005 (Economist, 2006), some of them triggered by people displaced by China’s new and increasing expenditures on oil and gas supplies.

A global oil/gas scarcity in the short term also may be expected to multiply and intensify disputes between nations over existing oil/gas sources. China and Japan have a long-running dispute about control of offshore oil and natural gas deposits in the East China Sea, an issue as yet unsettled. With its huge and rising energy demand, China is also investing in bringing natural gas in from Russia, investing in oil sources in Africa, wooing Venezuela for oil otherwise now sold to the U.S, and buying Iranian oil. Such energy links among nations have the potential for strife as well as for peaceful collaboration among energy trading partners -- wars or peaceful extensions of trade and cultural exchange. When gas supplies are cut off or suddenly limited, as with Russia’s Gazprom cutting supplies to the Ukraine and Georgia in early 2006, the nations generating energy demand face serious economic damage via any one of a number of possible internationally triggered energy crises. Moreover, the EU has a difficult question to answer about its reliance on Russia’s gas for 20% of its energy.

1
**Reserve Replacement Ratio: Exxon Mobil**

Major private producers of oil and gas such as Exxon Mobil, the world’s largest publicly traded energy TNC, face a constant need to discover and control new sources of petroleum and gas. The Securities and Exchange Commission of the United States, which sets requirements for all trading in stocks and bonds, requires energy producers to register oil/gas proven reserves as part of their assets. Stock analysts track annual proven reserves as an essential part of stock value, and average out oil/gas replacement ratios (in a given year how much of a corporation’s oil/gas is consumed versus how much new oil/gas has been discovered and controlled) over 10 to 20 years to establish the success of companies in finding new sources. These analysts commonly see 100% replacement of reserves as essential for a stock to retain or raise its value on the global market. Hence, as a practical matter both in meeting demand and in keeping up their stock prices, energy TNCs face a constant need to replace the proven energy reserves they have used up. The stock of Royal Dutch Shell dropped suddenly in 2005 when the company announced that its proven reserves were substantially smaller than previously claimed.

In 2005 energy major TNCs Royal Dutch Shell, Total SA, and British Petroleum (BP) all failed to maintain 100% of replacement of reserves, demonstrating the difficulty in finding new oil/gas fields. Exxon Mobil exceeded its competitors with a replacement ratio of 143% in 2005, but it faced a different problem: nearly all of the new reserves came from one new field in Qatar, meaning any interruption from this one field could leave a major part of their reserves unavailable. While oil/gas giants such as Exxon Mobil prefer to have reserves in diversified regions to limit the possibility of such interruptions, the scarcity of new oil/gas sources outside of the Middle East or the Caspian Sea region is beginning to concentrate required reserves in regions now facing major political and military disturbances. In summary, as part of the impending global energy crisis, energy companies must now live with fewer new oil/gas discoveries and greater risks of interruption in their regionally concentrated sources of supply.

(Wall Street Journal, 2/16/6)

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**Satisfying Demand**

Global energy resources available to meet growing demand vary according to who reports them, with unreliable claims about known deposits of oil and natural gas leaving the picture of energy security somewhat uncertain. One part of the energy equation involves new technologies that may be able to extract more oil and gas from known sources. Another variable includes mis-reported or over-estimated known oil deposits.
While demand and supply issues threaten the global status quo, North America and the U.S. face a scarcity of natural gas. Importing more natural gas from beyond Canada and Mexico will require costly and dangerous shipments of refrigerated, liquified natural gas (LNG) from overseas, the use of double hulled ships, the building of port capacity to receive the gas safely, and facilities to “regasify” the super-cooled liquid. The risks of massive explosions from gas leaks are much higher with LNG, and U.S. cities have justifiable fears about terrorists exploiting this potential for damage. Similar fears are expressed by industrial nations around the globe. Coastal communities in the U.S. have resisted building LNG terminals, but recent U.S. law may require them to create them. With demand for natural gas growing, a new process would allow the liquification of natural gas for use at ambient temperatures to make it a gasoline substitute.

The capacity of other sources to supply more energy varies. Coal reserves appear substantial enough to fuel growth for more than another century, although coal has serious drawbacks in its emissions with high CO2, and sulphur linked to global warming, mercury linked to the incidence of autism, and particulate matter that, according to the United Nations, causes some 800,000 deaths a year and other health problems from asthma to cardiovascular disease. (World Health Organization, 2005) Coal emissions also have links with lung cancer, laying consumers chary about the side effects and consequences of meeting demand. Beneath this pattern of industrial nations relying on distant energy resources and the prospect of oil production peaking (existing wells pumping as much as they can), consumer nations view the drop in replacement discoveries as cause to compete for oil supplies rather than invest massively in renewable, clean energy technologies. In the short term, we see:

India: Power Corrupts

According to writer Martin Feldstein in the Wall Street Journal, the rising industrial power of India has major shortfalls in energy, which in turn inhibit productivity. Major cities in power-hungry India lack centralized electrical systems. With energy demand rising rapidly as industries rely more on technology, Indian cities supply free energy to the poor, but have much of their energy stolen by users who should pay but don’t. Bribes to local officials lead authorities to ignore energy thefts, cutting the income expected by India’s antiquated electrical systems. Power brownouts are so common that many merchants and factories must use private power generation to ensure uninterrupted electricity.

In early March of 2006 President Bush signed an agreement with India to provide it sophisticated nuclear technologies for power plants which might abet as well India’s nuclear weapons production. The U.S. Senate appeared unsure whether it would consent to this treaty. (Feldstein, 2006)
1) a rapid scramble to clean up coal emissions to make coal use more acceptable;

2) the exploitation of new oil/gas sources;

3) civil wars and military conflicts breaking out in or near oil producing nations;

4) far too little investment globally to support urgent maneuvers attempting to replace fossil fuel reliance with alternative renewable energy -- solar, wind, biofuels, and wave or geothermal energy sources.

With recent profits at record levels, energy TNC’s face critically significant choices: invest in more oil/gas discoveries and more efficient transmission technologies; or invest massively in alternative energy sources, whose return on investment is as yet uncertain or less profitable. Sales of wind and solar sources are increasing at over 30% a year, but with the exception of major wind power investments by EU countries, the major new investments for alternative sources have not yet arrived. (Brown, 2003)

Reviewing Global Energy Possibilities and Problems

A review of world energy sources and consumption patterns raises unavoidable questions about the energy available for the continued growth of globalization. Energy scarcity leading to higher prices could trigger a global economic downturn. Or the reverse may occur, with a currency collapse from other causes leading to a global recession, followed by short term drops in energy demand and energy prices. But the predicted growth of global economies is poised to increase demand steadily, and in places such as China, rapidly. In the words of energy analyst Michael Klare, with oil and gas on the verge of not meeting rising demand, we face a long emergency.

A Hamas-based Palestine government threatened to escalate the low scale war between Palestinians and Israel, creating a regional threat to oil supplies from the entire Middle East.

Problems threatening oil and natural gas multiplied elsewhere as well. In Myanmar oil/gas giant Unocal stood accused in a U.S. court of enslaving peasants during its collaboration with the Myanmar government in building a new pipeline, and as mentioned above in February 2006 Russia played a card from its “oil-politics” deck, cutting natural gas to the Ukraine, Georgia, parts of Eastern Europe, and the EU. We described at the beginning of this chapter, the attack of insurgents in Nigeria on oil supplies there and continuing political uncertainties surrounding issues of the equitable distribution of oil profits within the country.

Meanwhile, in Afghanistan Islamic jihadis have continued to threaten sabotage to a planned major natural gas pipeline, forcing U.S. troops to engage
them in a guerrilla war. The descent of Iraq into a low intensity civil war combined with corruption and persistent sabotage by jihadi insurgents to cut Iraq’s oil production and much of its previous 4 million bbl per day of export oil.

As a consequence of this pattern of oil interruptions, some of the leading global industrial powers can no longer count on the oil or natural gas they require. The intensity of global energy competition, foreign direct investment in energy, and energy commerce is increasing. Disputes among Caspian Sea area rebels and developers of oil and natural gas are leaving unanswered questions about the security of these rich new regional supplies. Meanwhile in the struggle to secure a steady flow of energy for its rising demand, China agreed to invest $100 billion to develop the Iranian Yadavarian oil field, which would then guarantee China 10 million tons of natural gas annually for the next 25 years. (Honolulu Advertiser, 2006) As further evidence that the global race for energy sources is on, China has also invested $3 billion to develop oil in the Sudan (Friedman, 2005) Moreover, with China's appetite for oil soaring, and India also seeking more supply, the two countries have agreed to collaborate in buying or controlling foreign sources of oil and gas. If global competition to control available oil supplies is heating up, so is collaboration.

With the ongoing strife in Iraq and Afghanistan, Iran is facing possible sanctions from the United Nations for its nuclear initiative, and that translates into fears about Iran not selling the world the 5% of its daily oil that Iran supplies. Across the Middle East, the rise of Islamic militants and insurgents who conduct guerrilla warfare attacks imperils pipelines. This turmoil in the Middle East has already interrupted and diminished expected oil supplies, particularly those from Iraq. It bears repeating that even the threat of oil scarcity puts the entire global economy at risk and sets in motion a complex series of international political and military maneuvers. It follows that energy security dominates the foreign policies of major oil producing and oil consuming nations, as well as the boardroom discussions of global energy TNCs. The U.S. presently maintains 13 bases in 9 different countries, from Qatar to Uzbekistan, and a fleet of ships patrolling from the Straits of Malacca and the Persian Gulf, and has a newly planned navy base in West Africa. U.S. taxpayers subsidize this service for the entire industrial world via their taxes. Ironically, some describe global deployments of the U.S. military as simply turning American troops into mercenaries who protect global oil TNC’s.

The U.S. seeks a military presence wherever it is possible for it to secure oil production or oil transportation, which creates a paradox – gratitude from some industrial/consumer nations for the safety of their oil supplies, but anxiety from other producer and intermediary pipeline nations who suspect that the U.S. will use its forces as it has in Iraq, invading in a pre-emptive war. Russia, for example, suspiciously eyes the U.S. air bases in Uzbekistan and Kyrgyzstan, two former Soviet Republics on its border that were assumed to be in Russia’s sphere of influence. At the very least, the present global distribution of the U.S. military leads nations relying on these oil/gas sources—China and India included-
to suspect the U.S. of seeking a global energy hegemony, an arrangement that erodes their regional and national sovereignties. As competition for oil rises, it threatens every industrial economy. Finally, some money spent on foreign oil has found its way into the hands of international terrorists, leading some to observe that the U.S. the E.U., China, and Japan, all of them major oil importers, are through Arab country sources funding the jihadi militants who threaten oil and gas supplies from the Middle-East -- as well as those who oppose U.S./NATO forces in both Iraq and Afghanistan.

Venezuela, a major oil producer providing some 16% of the oil imported by the U.S., has seen its oil profits quadruple since 1998 (The Economist, 2006). Public payrolls in Venezuela have expanded and recently the number of unemployed has fallen by half, but the Venezuelan infrastructure continues to need such essentials as roads, bridges, and hospitals, which have been ignored, say critics of Chavez, as a result of incompetent government. (The Economist, 2006) In the climate of higher oil prices in 2006, the hopes of the poor in such countries as Venezuela, Bolivia, Nigeria, and Chad rise on the expectations of substantially more national income to provide them help. The same is true in Brazil where a major new offshore oil discovery could possibly make Brazil Latin America's largest oil producer. When help fails to arrive, the have-nots in these societies sometimes act out violently. We have already described the recent military attacks by the poor on Nigerian Delta oil facilities, and the civil war in Sudan. In contrast, rising profits from oil sales leave the leaders of oil exporting countries all the more in control via the patronage, programs, and the stronger military that the extra money can create. Some observers suggest that oil wealth paradoxically causes civil wars in some countries, yet it supports everything from dictatorships to stable democracies with social programs in others.

**OPEC**

The Organization of Petroleum Exporting Countries (OPEC) continues to meet and set production limits, and at the time of this writing keeping the price of oil between $55 and $80 bbl. Loss of production capacity in Iraq has pushed Saudi Arabia to increase its production. OPEC countries are presently enjoying a flood of profits, and the pending oil scarcity foreshadows increasing profits further. Unfortunately, during the 1990’s some spent part of their profits on expensive arms purchases of over $42 billion, much of that money returning to U.S. arms sellers. (Klare, 2001) As the Iraq attack on Kuwait in the early 1990’s demonstrated, added weapons can work at cross purposes with security, raising the potential of the Middle-East for interstate conflicts. And with OPEC’s maturing fields arriving at or near peak production, with Russia (a non-OPEC member) selling to energy to Europe, with Indonesia no longer oil self-sufficient, and with recent discoveries in the Caspian Sea region and in West Africa putting new producing nations into the energy market, the fabric of the OPEC cartel may well be strained by rising competition.
Caspian Sea Oil/Gas Sources

Discoveries of substantial new oil sources in Azerbaijan, Kyrgyzstan, Georgia, and Kazakhstan – the so-called Caspian Sea countries – have led to major recent investments by global oil TNCs in production and pipeline transport. Caspian Sea regional production may reach 4 mbd in 2010, and as much as 6 mbd by 2020 (Klare, 2001). Regional gas reserves are estimated as equal to the combined reserves of Mexico, the U.S, and Canada. (Klare, 2001 p.84) But intermittent wars, border conflicts, warlord struggles for control, and terrorist acts have clouded prospects for reliable new supplies of oil and gas from this region. Two new pipelines, one from Georgia and one from Kazakhstan, lead to ports on the Black Sea. Another pipeline is planned to reach Turkey's Mediterranean coast, and another is planned through Afghanistan. The complexities that oil/gas scarcity visits on globalization, plus the struggle to control these sizable new oil/gas reserves and their transport are now unfolding in foreign policy struggles involving the U.S., Russia, the E.U., the Caspian Sea and Middle-East countries, India, and China.

Environmental Threats and Responses

It bears repeating that energy uses turn on the critically the important variable in the energy equation -- the carrying capacity of global ecosystems to absorb further carbon and greenhouse gases from fossil fuel burning sources, and to survive as well further attempts at sequestering carbon. With the United Nations Framework on Climate Change and its Kyoto Protocol that limits carbon emissions recently signed by 189 nations – notably excepting the United States and China -- and 1200 scientists of the United Nations’ Intergovernmental Panel on Climate Change pointing to rapid global warming as a direct consequence of reliance on fossil fuels, the onrush of globalization faces a dilemma. The speed of global warming is tightly linked to the amount of greenhouse gases emitted, which has direct links back to the rising electrical production, increased transportation, widespread use of fossil fuel based fertilizers, methane emissions from livestock, and global commerce based on fossil fuels, all of which support globalization.

We refer above to the possible consequence of rising atmospheric temperatures of several degrees over the course of the (Adam, 2006) A one-degree Farenheit rise in temperature in the 20th century has already led to serious global consequences. Internationally scientists cite the rapid melting of glaciers in Greenland and major ice melts in Antarctica and the Arctic as evidence of dramatic global warming caused by greenhouse gas emissions from fossil fuels. Disruptions in Atlantic Ocean thermohaline currents are observed as threatening major changes in Europe’s climate. As Simon Tett of the prestigious Hadley Climate Centre says, “People don’t realize how dramatic these changes will be.” (Morell, 2004) Sea level rise was estimated to be growing as much as three times as fast as believed a short three years ago; and higher temperatures
from global warming have been associated with causing desertification and crop losses in Africa and China while intensifying global storms and storm damage. Nations in Africa and parts of Asia are seeking international aid to change their crop variations to introduce either crops resistant to drought (Africa) or chronic flooding (Bangladesh).

Further temperature rises caused by global warming will intensify cities suffering from thick smog, water tables being overdrawn, and industry polluting rivers and shorelines. These patterns also threaten to have a major negative impact on terrestrial and ocean ecosystems, species depletion, and human health. All of these dire consequences, then, threaten to throw the flow of globalization off course. As history repeatedly demonstrates, civilizations inevitably face huge risks if environments are seriously damaged or collapse. (Diamond, 2005)

**Carbon Trading**

At an added cost domestic carbon trading arrangements now allow greenhouse gas emitters to buy the rights to continue to emit CO2, methane, and nitrous oxide – the main greenhouse gases – into the environment. Carbon trading schemes create a limit on total carbon emissions, adding costs to the rights of electrical producers and other major fossil fuel energy users to emit a given quantity of CO2, but recent lower prices for carbon emissions rights show that the new markets probably have set emissions levels too high, allowing for too much CO2 to continue into the atmosphere. China recently established a program to cut GHG emissions by 20% by 2010, but thus far the program has had no success. Carbon limits and the trading of emissions rights offer cost incentives for emitters to use alternative, less polluting sources of energy. Opponents of this scheme point out:

1) that the Kyoto treaty, while a useful start, is too late with too little in encouraging too few cuts in emissions. A loose promise for setting emissions limits at the United Nations sponsored Bali meetings in December of 2007 showed at least a willingness on the part of the majority of nations to set and pursue curtailment of greenhouse gases.

2) that emissions trading still allows polluters to destroy air and water quality in ways that seriously damage nature, interrupt business, and devastate human health. The world’s seas absorb over half of the CO2 that is sequestered, with trees, crops, and other forms of foliage presenting the remaining natural storage reservoirs. As noted earlier, experimental attempts at pumping CO2 deep into oceans collide with recent science showing that deeper ocean waters already harbor twice the CO2 of surface waters, and that this amount of CO2 changes ocean pH content toward acidic, posing threats to marine life.
In summary, while U.S. government estimates project global energy demand to rise at approximately 2.2% annually, other variables in the energy security equation raise growing uncertainty about what energy issues may pose for the flow and growth of globalization. These variables include questions about:

- the impact of peak oil production, and the resulting stability of energy prices. Will energy availability and cost upset current criteria dictating comparative advantage in production?
- innovations in conservation and energy transmission;
- global warming, and storm and drought devastation through climate change;
- changing patterns in Atlantic Ocean currents possibly affecting industrialized Europe;
- sea level rise, and storms damaging heavily populated coastal areas;
- investments in alternative energy breakthroughs to improve price and availability;
- the unwillingness of the United States to join climate change agreements; can all nations agree on and enforce new, more stringent emissions levels?
- new global markets in carbon emissions trading;
- EU members agreeing to cut carbon emissions rapidly;
- China struggling to substitute less polluting and clean, renewable energy to cut its coal plant emissions;
- competition among industrial giants for secure access to energy, with resource wars and international friction interrupting oil and gas supplies.

The fate of globalization, indeed the fate of civilization itself, sits waiting for answers to critical energy, emissions, and climate questions. How will mankind meet its growing need for energy? How can globalization continue without causing the widespread environmental, social, health, and political damage that present energy uses cause?
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To view an interactive oil depletion atlas, go to [http://www.lastoilshock.com/map.html](http://www.lastoilshock.com/map.html)


Possible addition

U.N. report from just this past November found that a full 18 percent of global warming emissions come from raising chickens, turkeys, pigs, and other animals for food. That's about 40 percent more than all the cars, trucks, airplanes, and all other forms of transport combined (13 percent). It's also more than all the homes and offices in the world put together (8 percent)
Endnotes:

1. In 1950, fossil fuel uses created carbon emissions of 1.6 billion tons. In 2000, carbon emissions neared 6.5 billion tons, a quadrupling in just 50 years. Three fourths of the carbon emissions from human activities come from combustion of fossil fuels; the rest is caused by changes in land use, principally deforestation. The atmospheric concentration of carbon dioxide (CO2) has increased from the preindustrial level of 280 parts per million (ppm) to today’s 370 ppm, a 32-percent increase. In the last 20 years, the atmospheric concentration of CO2 has increased at the unprecedented rate of 1.5 ppm a year. As the volume of emissions rises, the earth fixes a decreasing percentage of emissions. The increased atmospheric concentrations of CO2 and other greenhouse gases (GHG) trap more of the earth's heat, causing temperatures to rise. 2002 http://www.earth-policy.org/Indicators/indicator12.htm

2. Emissions trading. At present only 45% of European Union emissions are available for trade. The remaining emissions are not covered by trading, and hence are cost free. To become efficient, the EU and other markets need 100% emissions to hold a cost and to be available to the market for trading.

EU member countries are: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, The Netherlands and United Kingdom.
Chapter Twelve: Labor

Introduction

In many important ways the era of contemporary globalization is about labor: who will work on what, where, under what conditions, and for what compensation? As we have indicated in the two introductory chapters of this book, contemporary globalization was triggered in the late 1950s and early 1960s by the movement of capital out of the advanced industrial countries into the developing world. In this shift—which at the time was termed deindustrialization -- millions of workers were left without work in the older economies, while millions more in the developing countries took on this displaced work in new enterprises at far lower wages. By the early 1980’s scholars referred to this change as the structural logic of the new international division of labor upon which globalization would be based. (Herod, et. al. 2002) Subsequent decades have accelerated the pace of this relocation, especially of manufacturing, and increasingly of service industries as well, a phenomenon known universally as outsourcing.

In this chapter we examine five features of the realignment of labor in contemporary globalization:

a) The extent of the relocation of manufacturing from developed to developing economies.

b) Outsourcing in the contemporary global economy.

c) The links between labor growth, labor transformation, and patterns of urbanization.

d) Global labor restructuring seen as a race to the bottom in which lower wage countries continually undercut wages in other countries, leading to a world-wide decline in wages.

(e) Additional shifts in global labor forces stimulated by demographic and economic conditions, especially the rapid aging of populations in the mature economic countries, and their need to import labor to maintain their manufacturing and service sectors.

All of these elements of the globalization of labor have been discussed briefly or alluded to in previous chapters. In this chapter we discuss these five themes in greater detail.

Relocating Manufacturing

In the immediate post WW-II decades, capital began to flow rapidly from the older industrial countries of Europe and North America into what was then viewed as parts of the Third World, namely non-socialist countries in South America and Asia. Often taking the form of foreign direct investment (FDI), private capital sought to make use of abundant and often well-educated labor forces that could create quality manufactured goods to sell at lower prices and high profit in the markets of developed countries. Cheap transportation was a key
element in developing this relocation of labor. Large jet aircraft (especially the Boeing 747), containerized shipping, supertanker oil carriers, and low cost petroleum made transportation inexpensive for goods from these distant production sites, simultaneously making the relocation of labor to developing countries all the more profitable. The remaking of the industrial giant Japan, along with the development in the four “Asian Tiger” economies of Korea, Singapore, Taiwan, and Hong Kong led manufacturing relocation in the period of 1960-1990, an era which saw spectacular economic growth in these countries. This model of translating labor and capital into export-oriented goods was followed in part by another set of countries, also sometimes labeled “tigers”: Indonesia, Thailand, Malaysia. The Philippines sometimes finds a place on this list, although economic growth in the Philippines has been stagnant over the past two decades compared with growth in the leading Southeast Asian economies.  

After the liberalization of the Chinese economy through the reforms of Chairman Deng Xiaoping in 1987, China has made stunning economic progress, posting annual economic growth rates in excess of 8%, and often reaching as high as 10%.

A parallel process triggered wide-spread, if highly uneven development throughout Mexico, Central America, and South America. Some developing nations such as Brazil and Chile would develop complex economies that became significant players in the global economy. Others such as Mexico and the Dominican Republic became labor intensive “nodes” notable as “assembly platforms” for global manufacture. Their assembled goods – ranging from clothing to cars -- are exported back into the global economy as finished products. Under the North American Free Trade Agreement, Mexico has been the primary model of this relationship with the U.S. economy. The thousands of so-called Maquiladoras companies located near the US-Mexican border and further south in the city of Monterey represent a less integrated form of capital relocation than we see in Asia, having regional impact within Mexico but lesser effects on the society as a whole.

Global manufacturing relocations have transformed the economics of advanced industrial nations — largely the OECD (industrialized) countries – by reducing the proportion of their economies devoted to manufacturing. In contrast, investment in developing economies has led to more manufactured products in their domestic economies and significant growth in their manufactured exports. Thus, when we seek to describe these changes, we can examine three sets of data: (1) the percentage of an economy devoted to manufacture (Table 12-1); (2) the relative growth of various economies over a given period of time (Table 12-2); and (3) the relative role played by exports across various economies. With respect to exports(3), globalization has also led industrialized countries to significant growth in exporting services. Table 12-1 illustrates the first point(1) by

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1 This “tiger” label refers to a dynamic, rapidly growing, export-oriented economy, and has been applied outside of Asia as well, more recently to Ireland (the “Celtic tiger”), Estonia (the “Baltic Tiger”) and Chile (the “Latin American Tiger”). (Reference.com 2006)
comparing employment shifts in OECD economies with those of Singapore during a critical period of global economic restructuring. As for the relative growth of major economies in Table 12-2, note in particular the relatively spectacular growth of the global economy as a whole from 1950 to 1998, increasing from an aggregate size of $5.7 trillion to $33.7 trillion in approximately fifty years. The figures underscore the point that during the period of contemporary globalization, the growth of the world economy has been unprecedented. We also make the point, explored in other chapters, and suggested by this table, that this growth has been profoundly mal-distributed.

To understand the transformation in the economic history of China, we can note the decline in Gross Domestic Product from 1913 to 1950, and then China’s astonishing increase from $239 billion to $3.9 trillion during the period 1950-1998. (Maddison, 2001) Table 12-3 allows us to see that despite the significant shifts in global manufacturing and service production from the advanced to the developing economies, the overwhelming bulk of global export of goods and services remains with the advanced economies, although the relative size is growing. If we break out the data (from the same IMF source) a bit farther to look at the relative roles of China and India, we can observe that of the 44.5% share of GDP and 25.4% share of exports of goods and services, China accounts for 28.3% of the GDP share and 19.8% of export share; India accounts for 12.9% of the GDP share and 3.7% of the export share. (IMF, 2004a, p. 5)

Table 12-1 Employment Sector Shifts in OECD Countries

<table>
<thead>
<tr>
<th>Industry</th>
<th>Change in Number (000)</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Singapore</td>
<td>OECD Countries</td>
</tr>
<tr>
<td>Total</td>
<td>503</td>
<td>35,940</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>112</td>
<td>-1,646</td>
</tr>
<tr>
<td>Construction</td>
<td>32</td>
<td>1,339</td>
</tr>
<tr>
<td>Commerce</td>
<td>128</td>
<td>9,9093</td>
</tr>
<tr>
<td>Services</td>
<td>244</td>
<td>31,404</td>
</tr>
<tr>
<td>Transport &amp; Communications</td>
<td>39</td>
<td>2,157</td>
</tr>
<tr>
<td>Finance &amp; Business</td>
<td>87</td>
<td>9,731</td>
</tr>
<tr>
<td>Community, Social and Personal</td>
<td>118</td>
<td>19,515</td>
</tr>
</tbody>
</table>

Source: Kheng and Lee, 1996

Table 12-2 Relative Growth of Major World Economies

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Western Europe</td>
<td>370,223</td>
<td>960,374</td>
<td>1,401,551</td>
<td>4,133,780</td>
<td>6,960,616</td>
</tr>
</tbody>
</table>
Table 12-3 Share of GDP, Exports of Goods and Services and World Population

<table>
<thead>
<tr>
<th>Country</th>
<th>% Share of World GDP</th>
<th>% Share of World Export Goods and Services</th>
<th>% Share of World Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Economies</td>
<td>55.5</td>
<td>74.6</td>
<td>15.4</td>
</tr>
<tr>
<td>United States</td>
<td>21.1</td>
<td>11.0</td>
<td>4.7</td>
</tr>
<tr>
<td>Euro Area</td>
<td>15.9</td>
<td>33.3</td>
<td>4.9</td>
</tr>
<tr>
<td>Japan</td>
<td>7.0</td>
<td>7.6</td>
<td>2.1</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>3.2</td>
<td>4.7</td>
<td>1.0</td>
</tr>
<tr>
<td>Canada</td>
<td>1.9</td>
<td>3.6</td>
<td>0.5</td>
</tr>
<tr>
<td>Other Advanced Economies</td>
<td>11.6</td>
<td>30.1</td>
<td>4.0</td>
</tr>
<tr>
<td>Other Emerging Market and Developing Economies</td>
<td>44.5</td>
<td>25.4</td>
<td>84.6</td>
</tr>
<tr>
<td>Russia</td>
<td>2.6</td>
<td>1.6</td>
<td>2.3</td>
</tr>
<tr>
<td>Developing Asia</td>
<td>23.8</td>
<td>10.1</td>
<td>52.4</td>
</tr>
<tr>
<td>China</td>
<td>12.6</td>
<td>5.0</td>
<td>20.8</td>
</tr>
<tr>
<td>India</td>
<td>5.7</td>
<td>0.9</td>
<td>17.2</td>
</tr>
</tbody>
</table>

Source: International Monetary Fund, 2004

**Outsourcing:**
Outsourcing has many variations. In its essential form a company in one country engages a firm in another country to perform an activity it previously did for itself, at lesser costs—usually at significantly lesser costs. Parts of an eventual product or the entire finished product, for example, a flat screen for a computer, began to replace those made in the original country of production. Four decades of such
parts outsourcing has led to the fundamental decline of manufacturing in the older industrial countries, as the finished product can often be made cheaper and sometimes better in the developing country.

It is important to recognize that the outsourcing (also called *offshoring*) of manufacturing involved more than just the relocation of capital from one set of countries to another, or the availability of cheaper labor in the developing countries. For outsourcing to work, the country where the work was to be done needed to have a set of capabilities that would make the relocation of capital and work attractive to those controlling them. A representative (but not exclusive) list of such capabilities would include:

1) A capable population available at competitively desirable wage rates for the labor involved.\(^2\) In the early days of substantial outsourcing of manufacturing, firms making such relocations created “process engineering” that allowed relatively low skilled and moderately educated work forces to produce complex products that could succeed in globally competitive markets. (Neubauer, 2001) By substituting design and technology for the education levels of workers, these processes effectively overcame the so-called *education gap* that then existed between populations in the advanced economic countries and those of the developing ones. This technological forward leap spurred much of the offshoring of the information industry in its early period.

Subsequently, as we have observed in other chapters, outsourcing has come to span a vast range of goods and services, leading to the familiar notion that if something can be digitized, it can be outsourced. The range of things that are outsourced from one economy to another is truly dazzling -- from aircraft parts, to super computer components, to surgical x-rays, to college and university courses. In effect, globalization has led to a vast expansion of what economists call *comparative advantage* – that is, within the limits of their productive capabilities, countries produce and trade goods in ways that work to the mutual advantage of each. That *advantage* is commonly defined as consumers receiving goods and services with the best price and quality, and producers enjoying the highest return on their investments of capital. As globalization presently demonstrates, labor unfortunately has less control over its role and rewards in this system, nor does the system protect the environments of developing countries. The infinite variety of goods and services produced via the interdependence of the global economy means that few countries now make their own “stuff” any more. Consumers now rely on a globalized system of

\(^2\) In the earlier days of globalization those investing in developing countries demanded relatively safe systems for capital transfer and use, and the availability of physical infrastructure. TNC’s famously demanded of receiving governments that such elements not only be present, but that the receiving country pay for some of them, as well as exempt the TNC from wide varieties of local and national taxes. TNC’s still play the game of threatening to leave one national environment for another if such conditions are not met, threats that were more viable in the early days of globalization when the overall availability of countries with surplus cheap labor was larger.
comparative advantage to lead goods and services to be produced and/or transported from wherever capital finds the cheapest labor and most favorable treatment from governments.

It seems to be that the larger an economy gets, the richer it gets, the more things it produces, the more those who invest and manage capital can gain from the discovery, mobilization, and use of inexpensive labor. But the logic of globalization also indicates that things constantly change, and that production can quickly move elsewhere. The more a country supplying outsourced, mobilized labor develops its own capital, the more likely it is to develop its own more affluent market society based on increasing incomes — all of which in turn tends to bid up labor costs and lessen its ability to compete globally. In effect, a country’s success in the global economy can leave it less able to sustain its place in a given market. This situation was typical of Korea in the 1970s and 1980s, as many of the products intended for the global market tended to be priced too high as labor costs grew. Korea was forced to develop its capacity to generate higher value products—making greater use of technology in their production—as well as to shift from an export focused economy to one that has also significantly served its domestic economy.

Economists debate the specific role that technology plays in promoting this growth and in controlling wage growth, but the direction of these developments is clear because the supply of inexpensive labor, while large, may not be inexhaustible. Wallerstein argued in the 1980s that the global system of labor needed to be seen as essentially finite. In the early stages of development through globalization countries with significant surplus labor enjoy a comparative labor advantage, but as these workers are themselves drawn into the consumption economies of their countries, these consumption needs produce upward pressure on wages, etc. (Wallerstein, 1984)

The total aggregate effect of outsourcing is difficult to estimate. The relative toll it takes on manufacturing in the advanced economies can be estimated by the impact of outsourcing on the U.S. For example, a detailed study in the US of the first quarter of 2001 indicated annual production shifts to Mexico and China, with a shift of 85,000 jobs to each. Over all, 204,000 production jobs left the US. By 2004, those numbers had approximately doubled with 406,000 production jobs leaving the economy, with gains of 140,000 to Mexico, 99,000 to China and 47,000 to India. (Bronfenbrenner and Luce, 2004) As service jobs have become more susceptible to outsourcing, the overall impact on the developed economies has increased.

Nonetheless, an examination of the phenomenon in detail suggests further the complex economic trade-offs involved in outsourcing or offshoring. The example of computer hard drives is instructive. As Gereffi documents, jobs in the U.S. hard drive industry migrated to Southeast Asia over a twenty-year period, resulting by the mid 1980’s in over 80% of the hard drive production jobs being
located outside the U.S. The hard drive design business, however, remained largely in the U.S. along with its higher paid engineer-dominated jobs. As a result U.S. workers, while accounting for only 20% of the jobs, received 80% of wages; in contrast, Southeast Asian workers, who now constituted 80% of the workers in the industry, received only 20% of wages. (Gereffi, 2005)

Such labor shifts set off debates on offshoring, especially when offshoring is combined with the huge global buyers who serve as primary market outlets for outsourced production. These retailers include the giant discount chains (e.g. Walmart), department stores, supermarkets, and brand marketers. As offshoring jobs are lost to countries with less expensive labor, nations such as the U.S. must supply unemployment support, job retraining for displaced American workers, and federal takeover of employee pension deficits as U.S. companies go bankrupt. Whole communities suffer economic collapse, losing their tax base. On the other hand, the profits that return to firms located in the so-called sending economies are viewed as providing social benefits via more employment and taxes on corporate profits. In addition, in these sending countries, the profits themselves stimulate new business investment, produce less expensive consumer goods, and in some cases raise the standard of living.

The controversy over jobs lost to outsourcing and offshoring currently holds the attention of the U.S. Congress, where increasingly voices address the decline of good jobs that have traditionally sustained the middle-class and upper-working class. In this view the U.S. economy is becoming polarized between job creation at the higher end of service and production complexity -- jobs that are more highly paid -- and the proliferation of mainly low paying service level jobs. This ongoing transformation of labor in the US leads to arguments saying that offshoring contributes to increasing income disparities in the US, and overall to a process that is shrinking the American middle class.

Contrasting arguments abound. Some suggest that despite the number of jobs leaving an economy, concerns about offshoring are exaggerated. They claim that especially in the service sector, it is primarily IT jobs that are affected. Because of incomplete data on the offshoring of services, it is difficult to determine what they may suggest. For example, one of the more comprehensive studies, done by the McKinsey Global Institute in 2005, found that offshoring was generally beneficial to the U.S. economy and has had a far less negative effect than the offshoring of manufacturing. By its estimate, only 11% or about 130 million of the

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3 Gereffi points out that brand manufacturers are sometimes called manufacturers without factories in recognition that their goods are manufactured on contract within networks of differentiated suppliers. In the earlier days of outsourcing, these brand marketers were often cited as examples of virtual corporations, meaning that capital aggregation, design, and marketing were housed in a corporate structure separate from the actual manufacture of goods, a model of production very widely used in clothing and accessories manufacture. (Gereffi, 2005)
1.46 billion global service jobs could be offshored, and in reality a far smaller number would actually move offshore. (McKinsey Global Institute 2005) Within the political debates currently swirling around this issue, the magnitude of these numbers, especially for economies that have already lost millions of jobs to offshoring, is far from reassuring.

In the conclusion of this chapter, we will return to the question of how outsourcing or offshoring is meant to benefit various actors throughout the global economy.4

**Labor Relocation and Patterns of Urbanization**

As we have discussed in several places, most particularly in the chapter on urbanization and inequality, the primary “driver” of rapid urbanization in this period of contemporary globalization has been the movement of peoples into cities in search of jobs. Countries outside the older advanced economies have spurred this movement by the creation of export processing zones (EPZs) within which much of the assembly work of global production is accomplished. These zones were established as early as the 1960’s to “attract foreign investment, boost employment, increase exports, and generate foreign exchange by providing factories, modern infrastructure, and streamlined administrative procedures,” a kind of one-stop shopping for global production. The global expansion of EPZs has been rapid and extensive. The numbers increased from 75 in 1975 to 845 in 1997 to 3000 in 2002. In 1997 22.5 million were employed within such zones; in 2002 that number had grown to 43 million. 116 countries had established EPZs by 2002. (Gereffi, 2005, and ILO 2002) Table 12-4 provides some representative data on net labor migrations among several labor important countries in Asia.

Obviously, the EPZs are not the only stimulus that draws people toward urban areas. As we discuss in other chapters, changing global weather patterns (particularly desertification) and markets transformed by global demand and technology have destroyed the way of life for millions of rural residents who continue to move to cities in search of jobs. The increasing extension of cash and market economies into regions that had for centuries functioned as subsistence

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4 The logic of outsourcing is economically compelling for global firms that view their decision-making as driven by a large set of cost factors, especially with respect to the price they pay for labor. American Airlines in the United States, for example, has had a long and difficult history with its mechanics, who are organized in a union that over the years developed a characteristically hostile union/management relationship, punctuated by frequent strikes during periods of contract renewal. At a critical point in 2004 when American faced bankruptcy, a new relationship was formed between the union and management to create an authentic partnership in which union members would participate in shop floor decisions. Production zoomed and costs dropped over the next two years. American came to see that its mechanics union represented a huge investment in human capital that had been under-utilized in the old model. The corporation has recently moved to insource work from Latin America, an action made possible by the new economies gained from more effective productivity on aircraft overhaul, which can now be done more cheaply by various Latin American airlines than at their own facilities. This example demonstrates that it is not wage rates alone that determine outsourcing, but a range of factors that contribute to the famous “bottom line” of corporate profitability. (NPR, 2006)
economies also makes it necessary for those leaving farming to relocate where cash incomes are more readily available than within traditional rural settlements.

Table 12-4

<table>
<thead>
<tr>
<th>Country</th>
<th>National labor force (thousands)</th>
<th>Foreign population</th>
<th>Total migrant workers</th>
<th>Legal migrant workers</th>
<th>Migrant worker share of national labor force (percent)</th>
<th>Migrant workers with legal status (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>149,170</td>
<td>6,550</td>
<td>4,824</td>
<td>3,508</td>
<td>3</td>
<td>73</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>3,380</td>
<td></td>
<td>400</td>
<td>300</td>
<td>235</td>
<td>9</td>
</tr>
<tr>
<td>Japan</td>
<td>68,000</td>
<td>1,700</td>
<td>670</td>
<td>420</td>
<td>1</td>
<td>63</td>
</tr>
<tr>
<td>South Korea</td>
<td>22,000</td>
<td>350</td>
<td>310</td>
<td>95</td>
<td>1</td>
<td>31</td>
</tr>
<tr>
<td>Malaysia</td>
<td>9,600</td>
<td>1,500</td>
<td>1,239</td>
<td>789</td>
<td>13</td>
<td>64</td>
</tr>
<tr>
<td>Taiwan</td>
<td>10,000</td>
<td>350</td>
<td>345</td>
<td>329</td>
<td>3</td>
<td>96</td>
</tr>
<tr>
<td>Thailand</td>
<td>34,000</td>
<td>2,125</td>
<td>1,000</td>
<td>700</td>
<td>3</td>
<td>70</td>
</tr>
<tr>
<td>Singapore</td>
<td>2,190</td>
<td>1,000</td>
<td>960</td>
<td>940</td>
<td>44</td>
<td>98</td>
</tr>
</tbody>
</table>

Note: Legal migrant workers are foreign workers (1) with work permits and (2) considered to be workers under labor law. Total migrant workers are legal migrants plus students and trainers and unauthorized workers.

Source: Government data and estimates summarized in Migration News, various issues.

The American urbanologist Saskia Sassen has studied the “global cities” that have emerged at the core of the contemporary global economy, and has concluded that migration is essential to the creation and maintenance of these cities. Cities such as Guangzhou, Bangkok, Bangalore, and London, operate as central “nodes” in the financial and capital network of globalization. High-end workers migrate to occupy and manage the key institutions of finance, exchange, and governance in these cities. Lower end workers migrate there as well to supply the support services that range from the cleaning of offices to working in the thousands of restaurants that populate such cities, to the small commercial outlets that grow up to serve these new migrant communities. (Sassen, 2003)

Both of these populations are part of the new labor mixes of global cities. Each produces a distinct pattern of labor recruitment, usage, service, housing, transportation, spending, etc. As we seek to comprehend how labor movement is creating and changing modern cities, we can be mindful of these complex, interrelated circuits of labor within the emerging global city.

The Race to the Bottom
A significant number of commentators see the global relocation of manufacturing and services as driving down global wage rates, a process that is sometimes called the race to the bottom. In a major commentary on globalization in the late 1990’s, William Grieder argued that three decades of globalization showed that the mobility of capital had disrupted income distribution throughout the world; it had separated a swelling number of have-nots from a much smaller number of
haves. (Grieder, 1997) Others have used the phrase *race to the bottom* in a somewhat different way: to refer to TNCs moving across global political and economic lines and national jurisdictions, producing a competition among nations for TNC capital, which then is used to employ large numbers of people at progressively lower wages. As wages drop, social conditions descend as well. In contrast, however, still other observers note a different kind of race *toward* the bottom, the positive impact of globalization on lowering the prices of goods and services.

Illustratively, Brecher and Costello argue:

> In a competitive market, sales generally go to the competitor who offers the lowest price. As a result, prices tend toward the level of the lowest cost producer. When this tendency lowers the price of goods and services through the improved efficiency touted by the advocates of free-market forces, the effect may be benign. But when corporations and governments lower costs by reducing environmental protection, wages, salaries, health care, and education, the result can be malignant—a "downward leveling" of environmental, labor, and social conditions. (Brecher and Costello, 1994)

Current public policy debates in various advanced economic countries focus on this issue, although not always in the specific language of *the race to the bottom*. In our chapter on economics, for example, we make reference to the current plight of U.S. automobile manufacturers who argue that maintaining the health care and pension benefit programs of workers in the U.S. adds such a large cost to production that their vehicles cannot compete in many global or regional markets. Consequently U.S. automakers GM and Ford lay off or buy out workers, move parts production overseas, sell off company divisions, see their stock prices drop, and attempt to get the U.S. government’s Pension Benefit Guaranty Fund to take over company pension obligations. Unless this trend reverses, a case might be made here for this pattern as a corporate race to the bottom.

This phenomenon repeats across the U.S. economy and is described as a barrier to effective U.S. competition in global markets. As U.S. corporations have restructured in response to globalization, the numbers of good jobs (meaning well paying jobs in manufacturing, often unionized) available in the economy has dropped significantly. Increasingly, more American workers cannot find themselves jobs that offer a sufficient return to raise a family. Consequently they need several members working, or characteristically the primary wage earner holds several jobs simultaneously. When compared with their counterparts in other advanced economies, Americans are now viewed as “working harder” (meaning longer hours) with fewer employment derived benefits. For example, American workers have approximately one half the vacation time of their European counterparts. Moreover, the U.S. has a larger portion of its population without health care than any other advanced economic society.
Within developing countries these changes in labor, income distribution, and corporate competitive balance are experienced differently. Early into a development cycle capital flows into a society and is organized around lowering wages. A great many individuals experience this stage of development as having new opportunities to enter a wage/job structure that rewards them. No one disputes that the creation of new jobs where previously there were none is not a benefit to the society receiving them. The crux of the argument about the race to the bottom becomes apparent when organized corporate capital controls labor in later stages. Typically, labor is relatively unprotected, subject to being exploited. As labor becomes scarce and the wages in a given country rise, firms tend to relocate to another labor environment. As capital moves to another low wage country, the global mobility of capital in relation to labor distributes the misery of exploitation throughout the globe. As they compete for more capital investment, governments offer investors incentives by refusing to create effective regulatory systems to improve and protect worker’s rights, their health, and the environment. In other chapters we have discussed other patterns of exploiting labor --particularly the labor of women, children, and individuals who are trafficked as part of what is now called modern slavery. The various forms of exploiting labor and the flow of labor toward capital have become prominent features of the overall phenomenon of globalization and the movement of capital.

Global Dynamics in Labor Shifts

In our chapter on health we discuss the significant relocation taking place throughout the world of healthcare workers. Essentially, as the populations of the advanced economies age, caring for them places greater strain on healthcare and related care systems. Insufficient labor exists in these societies to staff this expanding care sector of their economies. Shortages in nursing are especially critical. The global effect is for these mature economies to create significant demand pull that attracts health care workers from the rest of the world. The aggregate result is an enormous maldistribution of healthcare workers, especially in the sending countries. In some of these countries wages remain comparatively low and other conditions such as the HIV/AIDS epidemic negatively impact such workers. Overall, this is yet another instance of the rich getting richer and the poor poorer. And, these dynamics persist despite changes in the supply of labor in both the advanced and the developing economies. Worldwide a shortage of over four million healthcare workers exists currently and is expected to increase. (Joint Learning Initiative, 2004) The implications of such a shortage are clear. If the dynamics of contemporary globalization persist in

5 The U.S. Department of State sees this phenomenon very much as slavery: “As unimaginable as it seems, slavery and bondage still persist in the early 21st century. Millions of people around the world still suffer in silence in slave-like situations of forced labor and commercial sexual exploitation from which they cannot free themselves. Trafficking in persons is one of the greatest human rights challenges of our time.” [U.S. State Department 2003]
their basic form, global labor shifts will continue to bring workers from the developing world into the rapidly aging, low-birth rate, developed world.

Mike Douglass, a noted urban global scholar, has recently begun to argue for a yet different way to discuss globalization and labor. We might view contemporary globalization as having two labor periods. In the first jobs shifted out of the more advanced economic countries into the developing world. In the second, demand pull has brought significant labor into the developed countries largely to fill job opportunities at the low end of the wage scale that domestic workers prove unwilling to do for the wages offered. Research on this phenomenon, including that cited in this chapter, has tended to be anchored in two conceptual sites. One has focused primarily on labor sent from one physical location to another. The second has continued to use the family, anchored in a physical location, as the basis of analysis.

Douglass has advanced the concept of global householding, in which he asks the question of how social arrangements have been transformed to relocate the family, and presumptively the household, away from its original domicile.

“…global householding is viewed as the interactive processes of forming and sustaining the household through global transactions. From a global household perspective, transnational population movement is only partially motivated by and manifested in work and income opportunities. Marriage, bearing, raising and educating children, and caring for the elderly are among the new motives for transnational movements and linkages among people, and all are integral to householding. From a societal level, global householding is also a response to collapsing population growth below replacement, severe labor shortages, rising dependency ratios, welfare systems going broke, and rapidly aging societies.” (Douglass 2006)

These distinctions signal important shifts taking place in the social vector that work and the family have historically defined. People throughout the world make critically important choices about where and how they will work, where and how they will educate and train for work, with whom they will mate and reproduce, and how the rewards of their labor will be distributed. Because an increasing number of people must make these decisions in a global context, some of them act to preserve the family through the creation of a household that extends beyond national boundaries, often beyond the language, and beyond the cultural and social norms that define a particular family. A familiar part of this pattern appears in the decision of where to seek higher education. Throughout Asia, these decisions involve gaining education abroad, presumably to acquire a set of experiences (and often a “brand” for the degree(s) achieved) that will translate into favorable employment. Douglass, for example, cites these trends in Taiwan, Korea, and China. In the latter the Ministry of Education reported in 2002 that 460,000 Chinese have studied in 102 countries and regions, 150,000 of them in
the U.S. The effect of such practices is reciprocal: at prestigious universities such as MIT in the U.S. as many as 70% of its graduate students may come from abroad. (Douglass, 2006, p. 10)

Global householding is but one emerging concept that better allows us to describe and analyze how global labor is transforming and is being transformed by the complex dynamics of contemporary globalization. The new global division of labor referred to in Europe and North America in the 1980s, has in this generation become a routine and accepted phenomenon. Labor is inseparably part of the global network system.

Sassen’s work focuses on how these global relationships of labor, capital, and movement are central to an understanding of contemporary globalization and the political economy that creates and reproduces it.

“The new global political economy is not simply a function of power, nor is it simply the result of an immanent tendency in capitalism toward imperialism. The new global structures need to be produced, implemented, serviced, debugged. …one of the strategic working structures enabling the formation of a global political economy is the network of global cities. This network is a strategic infrastructure enabling the production and servicing of components crucial for the constituting of global corporate capital… this network is a key structure for social reproduction, both in a narrow sense—its elites and cadres need to live—and a broader sense—the materializing of global corporate capital as a social force. (Sassen, 2003, p. 1)

Summary and Conclusions

Contemporary globalization has been primarily oriented around the relocations of capital and labor over the past four decades from the developed to the developing world. The initial stage of manufacturing relocation has been followed by a substantial relocation of services as well. These phenomena, variously termed outsourcing or offshoring, come to characterize elements of the production and distribution chain of globalization in which increasing numbers of countries relocate production to one or another country. The impacts on global labor are numerous and complex as various types of jobs develop and recede through progressive stages of economic development. Perhaps the most direct and immediately visible impacts of these transformations are evident in the explosive expansion and growth of global cities. The concentration of jobs in urban settings and the rapid extension of a goods and cash economy act as a powerful pull to attract people from rural settings, leading to considerable changes in the nature of rural life throughout the planet.
These dynamics of labor relocation have created complex patterns of work and investment that some analysts view as a race to the bottom in which the mobility of capital and its relative advantage in various country settings allows it to move production to labor markets with lower labor costs. Viewed as a system-wide dynamic, this relentless search for cheaper labor costs provides tradeoffs in which workers in higher labor cost countries are likely to lose jobs, those in developing countries gain jobs, consumers in global trade have more inexpensive goods available to them, and increased profits accrue to capital. Those concerned with the race to the bottom see the nature of the negative dislocations involved as not being fully compensated by the gains provided elsewhere in the system.

Finally, examining patterns of labor mobility and application within contemporary globalization alerts us to even more profound changes taking place within societies as entire “ways of life” are altered by the movement of peoples through the global labor force. A new concept, global householding, appears a useful tool for analysis as it focuses on the new and extended networks that are represented by the household as it becomes extended throughout global time and space. Functions and activities that we have historically viewed as located within the family and local settings, such as marriage, reproduction, child rearing, education and health care, increasingly take place through such network. Taken together and viewed from the lens of global householding, we as students of globalization, can be alerted to yet other dimensions of the significant changes taking place as a result.
References:


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Chapter Thirteen:
Global Crime

Around the globe, crime has many faces. In the spring of 2006, as the U.N. War Crimes Tribunal was announcing the death by heart attack of former Serbian dictator Slobodan Milosovich (accused of state-sponsored genocide), news media reported African Union requests for U.N. or NATO troops to stop ongoing genocide in the Darfur region of Sudan, where some 400,000 have been murdered and 2 million have become refugees. As the trial of Saddam Hussein for crimes against humanity continued in Baghdad, the United Nations and a variety of international human rights organizations such as Human Rights Watch were pressing Iraq’s invader, the United States, to stop human rights violations of foreign prisoners held by U.S. forces at Guantanamo Bay, Cuba, and Bagram prison in Afghanistan. And amid deadly daily terrorist bombings by insurgents in Iraq, the newly formed Iraqi government was fighting the insurgents while also issuing strong protests against a series of civilian killings by occupying United States forces. This mosaic of violent acts precipitated by governments in various places was raising doubts around the globe. Have some governments or leaders now forsaken the rule of law and embraced policies of persistent and violent criminal behaviors?

Some thirty-three countries have in recent years suffered violent terrorist attacks on businesses, government officials, and civilians. Global coordination of the battle against terrorism is ongoing. Does the criminal behavior of insurgents or government opponents, however, sanction criminal behaviors in response by the governments assaulted? Despite the existence of an International Criminal Court (ICC) and Interpol, the absence of effective global agencies investigating and punishing crime and protecting citizens was subverting global hopes for the rule of law.

Under pressure from globalization, definitions of crime continue to shift. A recognized business practice in one culture can be defined as a crime in another. Clearly what the international community or a given nation might define as a crime, another nation could characterize as self-defense or lawful behavior irrespective of international agreements.

During the first half of 2006, international agencies faced a variety of difficult demands to prevent crime, including a dispute over Nuclear Nonproliferation Treaty provisions, an investigation of Iran by the International Atomic Energy Agency (IAEA), and possible UN sanctions for Iran, which was insisting on producing weapons grade uranium. Meanwhile, crime on a global scale took an almost infinite variety of other forms -- from illegal aliens crossing many borders, to terrorists setting off bombs in Egypt and Indonesia, to trans-national corporations (TNC’s) exploiting slave labor to grow coffee (a global commodity)
in West Africa. Because foreign investment has eased via globalization, a given nation's regulation of corporate crimes can affect a large number of global investors. Witness in the United States New York State Prosecutor Elliot Spitzer's prosecutions of some 56 U.S. investment banks for bilking international investors during initial public offerings of U.S. stocks. The prosecutions by Spitzer were shaped to yield not criminal penalties, but civil fines in the form of settlements that mounted into the billions of dollars to investors and national regulatory agencies such as the Securities Exchange Commission (SEC). But like weeds that can grow in unexpected places, other SEC investigations continued to reveal more corporate crime. U.S. mortgage giant Fannie Mae paid a $400 million fine for its corporate leaders having overstated earnings by some $8 billion in order to yield themselves more in pay, while in another court room jurors convicted former leaders of the bankrupt former energy giant Enron. (New York Times, 2006) Investors across the globe faced losses in the Fannie Mae scandal, the Enron collapse, and a variety of other celebrated corporate crimes such as a massive theft and fraud at global Italian-based food giant Parmalat that almost took the company into bankruptcy.

Much as we would prefer it were otherwise, crime has evolved into a regularized accompaniment of the phenomenon we call globalization. On a grand scale, some say, the ultimate global crime goes unchecked, this crime taking form as global industrialization exhausts global resources and devastates global environments, imperiling humanity and all of the earth’s species. The causes, consequences, and possible remedies for this crime receive more attention in a later chapter on the environment.

The Array of Global Crime

The long list of global crimes and attempts to curtail them suggests that as corporations and nations seek global advantages over competitors, they use or countenance criminal behavior around the globe. To give the reader some sense of the range of things that may be considered “crime” in this context just consider the following sample of events and situations drawn from a number of sources.

• **State sponsored crime (also referred to often as state-sponsored terror).** This can be a highly disputed category. For example many in the world would consider the US invasion of Iraq a stark violation of the UN charter. Other instances of state sponsored crime might include Sudan’s genocide against the people of Darfur; the Rwandan genocide; similar efforts at ethnic cleansing in Kosovo; genocide in Cambodia by the Khmer Rouge; sponsorship of global terrorist activities by Iran; and historically, US secret efforts to overthrow governments and support state terrorism and death squads in 14 nations, including Greece, Brazil, Guatemala, El Salvador, Nicaragua, Venezuela, and Chile. Each of these state-sponsored crimes, often operating through proxy groups in other countries, or through government covert agencies, had its roots in government foreign policy,
military aid, and secret government initiatives partially to support resulting corporate advantages. (Wikipedia. 2006)

- **Human trafficking and sex slavery** extends throughout the world, but tends to predominate in Eastern Europe, Southeast Asia, and West Africa. Estimates suggest that as perhaps as many as 25 million people currently life in some form of slavery much of its directly tied to the sex industry. (Caraway, 2005)

- **Labor exploitation bordering on slavery.** Often people are moved within and between countries to provide labor. Their human condition is difficult to differentiate from slavery as they are often without documentation—and therefore illegal within the country of their residence. They are almost always under-paid, often paid nothing at all, and overall subject to working conditions that mirror those in the worst prisons.

- **Terrorism by non-state groups** covers an enormous range of activities including efforts to acquire and use chemical and biological weapons, the emplacement of bombs and explosives, efforts to acquire nuclear materials, significant instances of murder and kidnapping, (rising to the level of routine industries in some places, e.g. Lagos, Nigeria), the use of commercial aircraft as weapons, and major acts of indiscriminate violence against civilian populations worldwide. (U.S. Senate 1998)

- **The Illegal Drug trade** worldwide involving almost too many nations to mention. No one knows for certain the size of this trade, but informed sources estimate that it may amount to as much as a trillion dollars in annual revenues. If this were so, the illegal drug trade would itself account for about 1.2 percent of the gross domestic product of the entirely global economy (estimated to be $42.7 trillion in 2007. Deane get citation from WTO

- The **Smuggling of goods** and its association with piracy is a centuries old phenomenon. The enormous volumes of global trade have created entire new smuggling industries in violation of both national and international laws. **Piracy** is rampant and flourishing in East African and Southeast Asian seas. (See for example Countryman and McDaniel, 2005)

- **Theft of goods and patented materials, and intellectual property** and processes costing legitimate industries tens of billions of dollars annually. An example follows; **Stop Here**

- **White collar crimes of massive theft**, illegal stock manipulations, accounting frauds, money laundering (Kuchinsky, 2005) market manipulations by major TNC’s, collusion in price-fixing, and misrepresentation of finances on a scale that leaves major global corporations suddenly bankrupt, their debts and obligations shifting to national agencies, and investors losing billions of dollars as markets are roiled;

- **Regular violations of global securities markets rules** by major U.S. securities companies and banks, with fines totaling some $4 billion annually; **stop here**
• Environments around the world suffering from illegal toxic spills, toxic emissions, waste dumping, over-grazing, illegal logging, resource extractions, water pollution, and violations of international fishing treaties. (Worldwatch 2006)

• Wars conducted with gross violations of human rights, and prisoners treated inhumanely outside Geneva Convention guarantees;

• International and regional gangs extorting, stealing, killing, and selling everything from drugs and sex services to stolen credit cards and illegal long distance phone services. (Shelley, Picarelli and Corpora, 2003)

• Illegal weapons trade. The world trade in small arms alone may be approximate $1 Billion per year. Disagreements among governments has prohibited effective global action to interdict this trade. (Wadhams, 2006.)

• Counterfeiting of pharmaceuticals and currencies. Estimates of the amount of counterfeiting that goes on in the global pharmaceutical market vary, but a fair consensus exists that it may be on the order of 10%, which translates into global sales of approximately $32 Billion a year. Other data suggest that the amount of counterfeit pharmaceuticals on the global market may be on the rise. (Buzzo, 2005) In the Philippines, 8% of prescription drugs are counterfeit. In Cambodia, 60% of 133 drug vendors were found to be selling anti-malaria medications lacking the active ingredient. Of the anti-malarial artesunate in Southeast Asia, 38% has been documented to be counterfeit. These statistics are just a minute representation of the extent of the drug counterfeiting problem worldwide. (Medscape, 2006) : http://www.medscape.com/viewarticle/465906

Simultaneously currency counterfeiting of some $45 million a year has been traced by US authorities through the Chinese Triad criminal syndicates back to the government of North Korea, which stands accused of counterfeiting $100 US bills and circulating them. Naturally the US and other nations need to assure the authenticity of their currencies to smooth the flow of global trade. (Perl and Nanto, 2006)

The list of crimes could extend much further, despite governments and international organizations such as Interpol working to stop or at least limit the advance of crime.

We will not attempt a comprehensive list of the forms and impact of global crimes here, but instead will review several examples that frame how crime has become integrated into the fabric of globalization, and how attempts to combat it struggle to keep it in check.

Crime in A Failed State

No one was surprised early in 2006 when a militia of poor people attacked and seized some 20% of the oil production and refining facilities in the delta of the Niger River. Nigeria in West Africa has some 129,000,000 inhabitants whose
poverty ($320 GNP per capita) has led much of its population to desperate behavior. Endowed with large oil and gas deposits and substantial wealth from its global oil sales, Nigeria recently paid off $12 billion in debt to the IMF as part of a debt reduction program that otherwise would have required that it pay $30 billion. This shining example would normally signal a developing country achieving notable success, but it is belied by Nigeria's other ongoing criminal disasters. Democracy in Nigeria offers the dismal picture of what can happen when corruption overwhelms government, order fails, criminality runs rampant, and the failure of the rule of law leads to chaos. In Nigeria kleptocrat government leaders steal so much of the income from oil (Nigeria produces up to 2.5 mbd of oil, making it the country's main industry) that the general population is left with crime as a principal option for survival. In Nigeria organized bandits tap into pipelines of oil and refined gasoline, and steal some 200,000 barrels a day of the commodities — up to 10% of the country's production --peddling them into the black market in Africa. In Lagos roaming gangs kidnap and assault others with impunity. The armed militia of the poor mentioned above have seized and held oil production facilities (and their employees) for long months, trying to force the government to redistribute oil income to alleviate dire poverty. The resulting decline of over 500,000 bpd in foreign oil sales has contributed in part to the global price of oil hovering around $70 a barrel. In Nigeria we have the tragic example of what happens when crime goes unpunished and citizens have little hope for security or justice. (People's Daily Online, Sept 25, 2005; New York Times, May 13 and 22, 2006) The issue of the role of failed states in contemporary globalization is discussed at greater length in our concluding chapter.

In its breadth and variety, global crime in many ways mirrors the entrepreneurial inventiveness and organizational networks of legal global commerce. As businesses have expanded to enter global markets, crime has followed and flourished. Early as 1991, for example, when the Bank of Credit and Commerce International (BCCI) international banking scandal broke, it revealed the bank's involvement in everything from illegal arms sales to money laundering to an international pyramid “Ponzi scheme” operating in the outward form of a bank. BCCI demonstrated how easily crime in the guise of normal business could go global and how many other entities (including the CIA of the US government) could use the bank for their own illegal purposes. (U.S. Senate Report, 1992)

**Human Trafficking and Labor Smuggling**

The plight of so many poor people around the globe seeking work and survival provides those who would exploit them ample opportunity to smuggle them and in fact enslave them for profit. Consider the case of Daewoosa in American Samoa, where a factory owner imported hundreds Chinese and Vietnamese women workers with false promises of good wages and working conditions, then confined them, refused to pay them, and abused them. When this exploitation
was ended after four years, U.S. prosecutor, Robert Moosey, described what the factory owners had done to these workers:

“They controlled who worked, when and where they worked, when and where they slept, if and when they would get fed and paid, he said. They seized the workers' passports so they couldn't flee and threatened them with deportation and beatings if they complained or failed to obey.” (Barayuga, 2003)

Workers faced temperatures of 34 degrees Celsius in the factory, were held prisoner, and were forced to sleep two to a bed. In April 2002, a civil court in American Samoa fined Daewoosa $3.5 million, and found that the owner and Tourism Company 12 owed an average $13,000 in back wages to each of 270 workers. The owner was convicted in federal court in Honolulu of holding the workers in involuntary servitude, fined $1.8 million, and faces 40 years in prison.

Law enforcement is less rigorous in many developing countries, where slavery or forced labor in hundreds of factories and agricultural enterprises continues without government intervention. According to the U.S. Department of State (2004), the enforcement of laws protecting children, women, migrants, factory workers, and others seeking work is often non-existent in some parts of China, India, Mexico, and other developing countries; conflict between worker’s advocates and authorities has led to workers’ imprisonment and other forms of human rights violations and silencing.

Human Trafficking

Each year kidnappers, con men, slave traders, and brothel-keepers manage to put approximately one to two million more women and children to work in the sex trade, on farms, or as day laborers and housekeepers. The trafficking trade is said to rank second highest in dollar income after drug smuggling. Most of those trafficked are poor women, girls, and children. Sometimes they are responding to the lure of higher pay and phony advertising promising jobs that do not exist. Sometimes families sell their children into slavery or smugglers take them to foreign countries where their travel documents are taken away from them and they are forced into work. Women are often kidnapped, held against their will, sold, resold, beaten, and forced into the sex trade.

As Ricky Martin testified before the International Relations Committee of the U.S. House of Representatives:

“Child trafficking is a global nightmare...human trafficking does not happen in isolation but...its roots lie in poverty and hopelessness.” (Walker, 2006.)
The entire human trafficking phenomenon is lucrative, with women and children selling for as little as $500 to $1000, after which they are forced to work long hours seven days a week to pay off the cost of their travel, and are kept enslaved until they no longer return a profit for those exploiting them. Large profits allow those in trafficking to foster corruption by bribing immigration officials and police.

According to Victor Malarek, discussing what he terms the new global sex trade, Eastern Europe accounts for 25% of the trafficking, with Russian, Ukrainian, Polish, Israeli, Czech, Georgian, Hungarian, Romanian, Bulgarian, Serbian and Albanian gangs collaborating to create an international flow of captive people. (Malarek, 2006). The U.S. Department of State classifies countries in tiers on the basis of the efforts individual governments make to enforce the minimal standards of the act, on the basis of its annual Trafficking Report:

TIER 1: Countries whose governments fully comply with the Act’s minimum standards.

TIER 2: Countries whose governments do not fully comply with the Act’s minimum standards but are making significant efforts to bring themselves into compliance with those standards.

TIER 2 SPECIAL WATCH LIST: Countries whose governments do not fully comply with the Act’s minimum standards but are making significant efforts to bring themselves into compliance with those standards, and:

a) The absolute number of victims of severe forms of trafficking is very significant or is significantly increasing; or

b) There is a failure to provide evidence of increasing efforts to combat severe forms of trafficking in persons from the previous year; or

c) The determination that a country is making significant efforts to bring themselves into compliance with minimum standards was based on commitments by the country to take additional future steps over the next year.

TIER 3: Countries whose governments do not fully comply with the minimum standards and are not making significant efforts to do so. (U.S. Department of State, 2006)

Official Responses to Trafficking

Because employers do not volunteer the countries of origin for their workers, the number of illegal workers moving within countries or crossing borders remains a matter of arrests, deportations recorded by officials, and guesswork. Labor moved within a country faces difficulty in finding work, housing, health care, and other necessities. Labor crossing borders also presents many other problems. According to the U.N. 2000 Protocol Against Smuggling of Migrants by Land, Sea and Air, which supplements the U.N. Convention Against Transnational Organized Crime countries dealing with undocumented aliens must distinguish if an alien has chosen to enter the country or has instead been forced into entry against his/her will, i.e., trafficked. Nations see illegal entry into a country as a crime against the state, while someone forced to enter – trafficked -- is the victim.
of a crime against the individual, needing the protection of the state. A basic
difficulty lies in determining if the alien has consented to be smuggled, and
therefore is a criminal, or if that person has been trafficked, which is defined as
being moved without consent and being subject to the “threat or use of force or
other forms of coercion, of abduction, or fraud and deception, of the abuse of
power, or of a position of vulnerability…. ” (United Nations, 2000, Article 3(a))

With the volume of trafficking at a stunning 800,000 to 900,000 persons annually,
countries have joined forces to combat it, their efforts thus far yielding mixed
results. While many undocumented foreign workers in the US (particularly those
from Mexico) enter, work, leave, and sometimes return, others take up residence,
and pay taxes including those for Social Security, even while remaining ineligible
to obtain Social Security benefits. The United States estimates its illegal
immigrant work force at somewhere around 12 million – 5% of the total U.S. work
force; many of these people have become an essential part of the construction,
agricultural and service industries. (Recent US immigration policies, however,
have set off disagreements with bordering Mexico.) Over the last decade some
twenty thousand undocumented Chinese have been smuggled into New York
City, where the Chinese community harbors them and helps them into jobs and
possible citizenship. (Estimating the numbers of possible illegal migrations
throughout the world is obviously a complex task. One reliable source estimates
that the number of persons living outside the country of their birth is between 150
and 200 million, of which 15-20% is “probably” undocumented, which would
mean globally somewhere between 30 and 40 million undocumented persons
who have become the subject of the “illegal migration” debate. (Papademetriou
2005.) ) As argued in our chapter on Urbanization and Migration, an increasing
number of countries is becoming dependent on remittances transmitted by
migrants to sustain segments of their growing populations, a force that drives
continued migration, documented and otherwise.

To take another example, the countries of Albania, Bosna and Herzegovina,
Bulgaria, Croatia, Macedonia, Greece, Hungary, Moldova, Romania, Slovenia,
Turkey as a group face major problems with trans-border crimes such as
smuggling and human trafficking. Consequently they have formed the Southeast
European Cooperative Initiative (SECI) Center, a regional law enforcement
organization with 12 member nations working to address a variety of criminal
problems. On a global scale, the U.N. Protocol to Prevent, Suppress and Punish
Trafficking in Persons, especially Women and Children, mandates that states
protect victims of trafficking by considering granting them temporary or
permanent status. National police forces and Interpol join in the efforts to stem
the tide of human trafficking and the corruption that accompanies it, but results
thus far are not promising.

A European Response to Environmental Crimes
Throughout the globe corporations have recorded a tragic record of spilling and depositing the wastes from their industrial production into nearby environments, daring authorities to catch them, and occasionally paying fines. Economists characterize this terrible pattern of dumping toxins as simply *externalities*, meaning that the producer of the waste refuses to deal with it accountably and covertly releases some or all of it somewhere outside the factory -- *externally*. Petroleum production, mining, and chemical factories have been particularly offensive as polluters, and coal burning electrical producers, pharmaceutical makers, and electronics manufacturers have achieved similarly negative reputations for careless polluting of ground, air, water, plant life, animal life, employees, and citizens, some of the latter thousands of miles distant from the origin of the waste. From the epic meltdown of the atomic reactor at Chernobyl in Ukraine to acid rain from coal-burning electrical plants, to the massive releases of feces from huge hog farms causing huge fish kills in the streams and shoreline waters of the United States, the costs of externalities to human health, the environment, biodiversity, fresh water sources, health care providers, and governments have proven staggering. In an example of the explicit entry of criminal groups into environmental issues, in the United States organized crime groups have taken up the dumping of toxic wastes for corporations, which refuse to deal with wastes accountably. While governments globally struggle to regulate such wastes effectively, and criminalize the unlicensed dumping of toxic wastes, they are reluctant to fine or mete out prison sentences for the criminal behavior of large corporations and their leaders. Meanwhile the damage mounts.

The international Protocol on Climate Change, otherwise known as the Kyoto Agreement, reflects the global effort of nations to agree on limiting a crime in the aggregate that poses threats to all life on a global scale -- the growing threat from greenhouse gas emissions raising global warming. More follows about these crimes in the later chapter on the global environment.

Beyond the wastes that global corporations externalize, however, lie the threats embedded in products and services that they offer. People with a sensitivity to chemicals, some of which have devastating, even life-threatening effects on the consumers who buy them (or others who encounter them), have little defense against the pervasive distribution of chemicals into their bodies and the environments they inhabit. In one response to this situation, the European Union has created an innovative crime-prevention system to protect all of the inhabitants of the EU from harmful chemicals. The strategy is simple and clear-cut: chemical manufacturers must prove that the chemicals they produce and sell are harmless to humans. Despite the insistence of chemical manufacturers in the U.S., the U.S. State Department, and other global interests selling chemicals (all of whom demand that the E.U. remain open to trade in chemicals according to the World Trade Organization agreements), the E.U. refuses to allow chemicals to be sold unless they are proven harmless. The Registration, Evaluation and Authorization of Chemicals (REACH), created in 2003, requires "better and earlier identification of the properties of chemical substances . . . The REACH
proposal gives greater responsibility to industry to manage the risks from chemicals and to provide safety information on the substances." (REACH, 2006) REACH offers a database where chemical users can find in-depth evaluations of chemicals that pose hazards. The regimen will require long years to establish its effectiveness via improved health of EU citizens.

**Intellectual Property Theft**

Some manufacturers that outsource work to China, India, and countries with less expensive labor call it the Third Shift pattern. It costs owners of intellectual property tens of billions of dollars annually, and it often works in this way. When a firm in the United States or the EU, for example, develops a patented or copyrighted design or product, then hires a factory in a developing country to produce it, the factory has temporary control of the intellectual property, be it a motion picture, a computer chip, or a dress design. The factory trains workers to handle the production, and calibrates its machinery to produce the design. Along with the design, the developing world factory has access to molds, specifications, and required secret information from the western company offering the production contract. After the first two shifts of workers meet the contract production quota, the factory has a third shift secretly continue production, then sells this share of production into the market with different labels or with slight alterations in the product. It may also use packaging similar to or indistinguishable from that of the original product. (Fortune Magazine, 2006)

Further forms of illegal copying involve digital theft yielding everything from complete computer operating systems and software packages, to pirated copies of the latest popular films, music CDs, and even golf clubs based on digital designs. Perhaps most problematic, however, is the highly profitable trade in counterfeit pharmaceutical drugs which, as we suggest above, in the absence of needed ingredients, sometimes leave their users tragically crippled or dead. Pharmaceutical companies have changed packaging, added chips to make individual packages traceable by radio, and pushed agencies such as the World Health Organization and the U. S. Food and Drug Administration (FDA) to crack down on the multi-billion dollar global shadow market.

With the Third Shift form of counterfeiting, the authorized contractor/factory or its marketing agents then become the unauthorized competition for the authentic product. Copying or slightly altering intellectual property and the products based on it have become extraordinarily common, and have left major western brands of goods with significant losses. In response a worldwide corporation called the Professional Investigation and Consulting Agencies (PICA), formed in 1982, now serves many Fortune 500 firms and other global corporations to protect their brands. PICA conducts audits of factory production, investigates thefts and illegal sales, and otherwise protects intellectual property. PICA and similar private policing firms have expanded apace with the growth of the outsourcing of manufacturing. (http://www.pica.net/)
In summary, the current pattern of policing intellectual property has its roots in a combination of influences:
1) The huge expansion of copyrighted and patented materials generated by rapid globalization. Even a single computer operation is now capable of being patented. When this phenomenon is combined with inexpensive and accessible reproduction technologies -- including digitized information, computers, and the Internet -- pirating becomes easy and very profitable.
2) A 1984 U.S. law amending trademark-protection creates criminal penalties for counterfeiters of up to 5 years in prison and a $250,000 fine. Clearly some governments have made the prevention and prosecution of intellectual property piracy a priority, but they struggle to enforce laws effectively in a world in which the rewards for non-compliance are great;
3) The advent of the private industry alliances such as the International Intellectual Property Alliance (IIPA) and private security firms such as the global PICA Corporation, all seeking new forms of security for intellectual property.

Theft of intellectual property presents copyright and patent holders with an expensive ongoing struggle, and many major commercial brands -- producers and retailers -- prefer that the problem remain in low profile. With similarly appearing goods in similar packaging invading the market, they fear that consumers may doubt the authenticity of their own legitimate products, costing them market share and leading to product liability lawsuits when the counterfeit products fail. Hence, while they push the foreign policy arms of their own governments to have those of developing countries put a stop to Third Shift and other forms of product piracy, global corporations also quietly continue to fight the sale of knockoffs and counterfeits everywhere. Because counterfeits have claimed a regular share of many markets in this relentless battle, the cost of fighting intellectual property piracy has become part of the cost of global goods and services, a cost we consumers pay.

International Illegal Drug Trade

Another pervasive form of crime, the illegal narcotics trade, has for the last generation become intertwined in the geopolitics of major nations. Because the use of illegal drugs such as heroin, cocaine, and crystal methamphetamine (often called ICE) so often link to crime and serious health problems in western nations, efforts to interrupt the flow and sale of such drugs have become a costly, permanent feature of globalization. The U.S. alone spends some $19 billion annually on its War on Drugs, with the states spending another $20 billion annually on police, criminal courts, incarceration, parole, rehabilitation, health care, and other drug-related costs. Thefts, violence toward victims, accidents, lost time at work, childhood deformities and brain impairment, special education needs, insurance, and massive military costs must be added to the total cost,
making a true total of the War on Drugs difficult to assess. (Drug Policy Alliance, 2006).

U.S. military attempts at drug interdiction have involved sending troops and military advisers to Latin American countries such as Colombia to assist in cutting coca production and suppressing the drug trade. But by far the largest, yet least effective, attempt at global drug interdiction occurred with the U.S. invasion and occupation of Afghanistan in 2001. With the United States and British troops continuing to occupy Afghanistan and with the new Afghani government attempting to suppress opium poppy production:

“Afghan opium poppy production is back to the levels that existed before the overthrow of the Taliban in 2001. According to UN drugs watchdogs, Afghan farmers grew more than 4,100 tons in 2005 and millions of addicts worldwide are hooked on the heroin they produced. . . Afghanistan remains far and away the world's largest supplier of opium, which the UN estimates is responsible for 100,000 annual deaths around the world. The cost of the crime associated with the trade is incalculable.” (Johnston, 2006)

Crime and geopolitics can create confusing arrangements and demonstrate how contradictory national policy can often be in this regime of contemporary globalization. Afghanistan’s opium poppy trade has supplied funding for terrorism, yet in the ongoing war in Afghanistan the U.S. has enlisted the support of warlords controlling opium poppy growth. Despite its costly War on Drugs, the U.S. in the 1980’s had its Central Intelligence Agency (CIA) foster the growth of opium poppies by Afghani mujahdeen rebels while Russia was fighting these insurgents. The rebels relied on the drug income to fight the Russians, along with weapons supplied by the CIA. That opium output supplied over half of the heroin used in the United States at the time, leaving U.S. foreign policy contradicting itself: one part of its government was conducting a costly war on drugs in Latin America while another part was helping Afghan rebels grow drugs that would be sold into the U.S. (Njm, 2006)) Following a similarly paradoxical pattern, the U.S. presently fears that abolishing opium growing in Afghanistan and Pakistan might threaten the rule of governments of these countries friendly to the United States, creating a greater harbor for terrorists. On the other hand, it is believed that some profits from present Afghani drug trade continue to fund terrorist efforts globally, creating yet another contradiction for U.S. foreign policy to resolve. (Nim, 2006) Afghanistan presently produces about three-quarters of the opium used globally with 1.7 million Afghans – 7% of the work force -- involved in its production Opium sales supplying a major part of Afghanistan’s rural income.

Although avowing a policy of stamping opium out, U.S./British forces and the Karzai government in Afghanistan have done little to oppose it, as the large size of the 2006 crop shows. (Nim, 2006) As expected, corruption of public officials
and the catalogue of woes experienced by narcotics users add to the cost of the
global commerce in illegal narcotics.

From money laundering, which costs governments billions in taxes, to drug
trafficking, human trafficking, or stealing from and extorting money from
businesses, global organized crime corrupts politicians, murders business
officials, and in some countries such as Colombia, Nigeria, and Russia has
threatened to control the political process. As a consequence, in the post-Cold
War era, it has threatened the security necessary for global commerce to
continue peaceably and legally. In the words of the former Director of the CIA
James Woolsey, “the tools of diplomacy are ineffective and irrelevant in dealing
directly with these criminal groups . . . there is no negotiating table where we can
try to work out a compromise or reach a consensus with criminals.” (Stephens,
1996) Like the transnational corporations they resemble in structure, production,
and distribution, transnational criminal organizations have grown to the point
where a United Nations Convention on Transnational Organized Crime now
meets to find ways to oppose the Russian Mafia, the Chinese Triads, the
Japanese Yakuza, the Italian Mafia family, and a number of global drug cartels.
(Love, 2003)

The local, national, and international distribution of transnational crime outposts
and processes in multiple countries adds substantially to the difficulty of national
governments trying to coordinate multi-agency efforts to curtail crime. Add to the
picture transnational crime employing sophisticated forms of transportation,
attorneys, accountants, counterfeit documents, and networking Internet services.
While reliable data on the extent of such crime remain difficult to establish, as
observer Maryann Love puts it, “Global illicit trade has assumed massive
proportions.” (Love, 2003) This observation is reached upon the eve of what
might be viewed as whole new eras of computer generated crime, which has
grown in direct proportion to the sophistication of the computers which enable it.
Conceptually, this so-called “white collar crime” threatens to have a greater effect
on the global economy than the more traditional forms of crime discussed
throughout much of this chapter. How well global governance organizations and
firms are able to address and combat it, and remain free from being captured by
it, remains an open question.
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Chapter Fourteen

If you study a map of the globe, it is difficult to see how its various separate ecosystems -- from the ice of the Arctic to Africa’s deserts to the prairies of North America and the shoreline waters of Asia -- are linked to one another by natural systems. But science can now show us how these systems tie one to another, for example, how global air circulation moves air pollution from coal burning in China into the air conditioning filters of buildings in America’s northwest. Science can also demonstrate how the red dust from the storms in Mongolia’s Gobi Desert carries via high altitude winds to supply needed minerals to the plants in the rain forests of Hawaii. As Dr. James Lovelock suggested in his Gaia theory, the globe can be viewed as a single large living organism, with its multiple interlinked parts and systems that make it habitable by humans. (Lovelock, 2006) As growth intensifies industrial production around the world, however, globalization has produced clearly identifiable and serious negative impacts on these natural systems. More particularly rising global warming reveals all of the earth’s systems confronted by a serious common problem. To understand the many threats that industrial globalization and the rising human population pose to our ability to sustain human life, we must examine how rising global commerce and the growing interdependence of distant peoples affect the global natural resources that nearly 6.6 billion of humans rely on to sustain them.

Mankind’s uses of nature leave us presently with what biologist Garrett Hardin has called the Problem of the Commons. Hardin likened the earth to a single, small piece of common ground owned by all of us, one on which each human hopes to graze his or her cow. As the human population increases, more people add more cows. Pursuing greater abundance, too many humans with too many cows inevitably face not enough water or grass, and overstress the grazing area. As the crowding continues, cows begin to starve, deserts overtake grassland, humans relying on products from their cows have nothing to sell or eat, and the original natural resource that made life possible -- the commons, the environment -- is severely damaged or destroyed. Hardin shows us that the underlying basis of the human economy is too often overlooked. In actuality every human economy functions as a subset of the environment, and without a healthy environment, economies will diminish, falter, and die, even in a global economy. (Hardin, 1954)
As you can see, multiple overlapping systems and influences, many of them with long histories, tie the world together, all of them part of the phenomenon we call contemporary globalization.

**Opposing Narratives: the Sustainability Dilemma**

With the interdependencies of globalization intensifying to meet the needs of a rising global population, the progress and disaster narratives narratives depict in dramatically differing ways the multiple problems arising with our common global ecosystems. Both narratives – anti-globalization and pro-globalization – attempt to address questions about just how much economic activity earth’s resources can sustain, but come up with very different answers.

Independently of either narrative, data mount about the human demands that may put our sustainability at risk, and naturally each narrative uses some or all of the data to offer a case for less or more globalization. Independently of the
narratives, science from the Intergovernmental Panel on Climate Change (IPCC) now shows us that global warming is producing widespread melting of polar ice, permafrost, and mountain glaciers. (The IPCC was established by the World Meteorological Organization (WMO), a United Nations specialized agency, and the United national Environment Program, UNEP, and represents a collaboration of some 2200 scientists from over a hundred countries. Its publications can be found at http://www.ipcc.ch/) Reliable scientific evidence also reveals a stunning array of global problems including: increasing desertification, crops and cropland destroyed, reef die-offs worldwide, ocean pollution rising, major fisheries depleted beyond recovery, invasive species rapidly spread by global commerce, major storm damage doubling every decade, species die-offs now so rapid as to require a new international organization to monitor them, air pollution causing hundreds of thousands of deaths and deformities annually, toxins from industrial and agricultural production invading our waters and land globally and harming human health in devastating ways. Environmental damage and losses make survival and sustainability all the more difficult for the more than 2 billion of the world’s poor, who see in the downward spiral of ecosystems their very survival at risk.

This growing aggregation of environmental sustainability woes, then, raises questions about sustainability and social inequality on two different scales--those of a global nature that require coordinated international responses, and those of a local, national, or regional scope. Because both scales inter-relate and overlap, local, national, and global forms of governance have yet to establish clearly who will or should assume accountability for what, and how we can effectively limit and repair the damage that humanity’s rising numbers cause ecosystems and social systems. As some point out, it may be less a matter of governance, in the larger sense in which that term is usually employed, and more one of community action, for communities must themselves protect their ecosystems if those communities hope to remain stable.

Underlying both sustainability narratives sits the global industrial economy, which relies on the assumption that unlimited growth is possible despite a finite environment. Capitalism, in its many forms, holds that only through continual economic growth and improvements in productivity can societies remain stable and flourish. (See Chapter 15 for a further discussion of this point.) These essential tenets of free market economies focus their measuring systems on various signals and predictors that support growth measured in greater output, and these indicators shape the policies of private enterprise, national governments, and international trade organizations encouraging that growth. Because each of us is the beneficiary of economic growth, arguing for its limits ostensibly suggests curtailing further abundance for oneself and one’s society. But as the American economist John Kenneth Galbraith pointed out some years ago, environmental issues require a high priority if there is to be a good society, that is, that those fostering economic growth must find also ways to limit and
eradicate its unintended, threatening environmental and social consequences. (Galbraith, 1996)

A variety of regional and national initiatives are presently under development to incorporate into traditional growth measurements an accountability for environmental draw-downs, and the impact of environmental losses on causing poverty. Naturally these innovations reflect differently in our two narratives of sustainability. Pro-globalization proponents argue that global organizations such as the World Bank and the International Monetary Fund have tuned their policies to mitigate environmental damage and poverty, and they supply data such as the rapid rise of the middle class in India and China to argue that regular increases in economic growth have significantly reduced global poverty. They point hopefully as well to environmental risks such as global warming now being addressed through the Kyoto Protocol, new market-driven systems such as carbon trading, and voluntary commitments to cut energy use and CO2 emissions by major Transnational Corporations.

The sustainable growth narrative, however, goes much further in noting the risks of a collapsing environment, and in describing what sustainability requires, citing innovations such as designing products for disassembly and recycling materials and wastes in ways that mimic nature. One hopeful leader advocating this kind of sustainable development, Bill McDonough, has proposed “the next industrial revolution” via an industrial system that mirrors the environment by integrating natural systems of design, resource use, and waste management. His book Cradle to Cradle (McDonough, 2002) outlines his thesis, and offers a complement to the book Natural Capitalism by Amory and Hunter Lovins with Paul Hawken. (Amory, Lovins and Hawkin, 1999) The latter see in present technology environmentally sensitive design possibilities; huge, readily available energy savings; ways to diminish the use of water and other resources in manufacturing; and innovative waste disposal systems that preserve ecosystems.

Sustainable growth advocates point to the global evidence of environmental decline and how traditional growth has exacerbated inequality and poverty in under-developed nations, leading to chaos, massive losses of life, and failed states. Drawing on substantial data such as sea level rise and alarming global shortages of fresh water supplies, they argue that unless the tenet of growth transforms into a workable version of sustainable growth complete with environmental and social equality measurements, and unless the policies of both industrial and under-developed nations seriously address sustainability, traditional forms of economic growth will soon on a global scale begin to undermine not only the fragile economies of developing countries, especially those of China and India, but also the stability of the older mature economy societies. In short, they argue that there are major environmental and societal failures around the globe that have already been triggered by growth, and more such failures rapidly arriving. As these aggregate, they create more than
enough of a burden to topple all of our successes, among them the successes of globalization itself. (We turn again to this possibility in Chapter 15)

**The Human Footprint**

Scientists have begun measuring human demands via what they call the human footprint, that is, required natural resources for human consumption per capita compared with available natural resources. Stanford University’s Peter Vitousek captures the human ecological footprint dilemma when he argues, “If human beings now directly or indirectly appropriate almost 40% of net terrestrial photosynthesis to their own use, and if 20% of the world’s population now consumes some 80% of the world’s commercial resources, it quickly becomes clear that the ‘developed’ world is no model for the ‘developing’ world to emulate.” (Vitousek, 1999) Globalization opponents would add, "Nor can the developed world and the engines of globalization continue their present draw-downs on nature." Moreover, "If everyone on Earth lived like the average Canadian," writes David Suzuki, "we’d need at least three Earth’s to provide all the material and energy essentials we currently use." (Suzuki, 1996)

In a condensed formula, human demands on global natural resources were captured by Ehrlich and Woldren over three decades ago when they formulated that: \( I = PAT \). (Ehrlich and Woldren, 1971.) The formula reads as follows: the Impact of human consumption on the environment can be determined by multiplying Population x its Affluence x its Technology. The larger the population, the more affluent it is, and the more technology it relies on, the greater the demands it makes on the global environment, both in consuming resources and in creating wastes that must find a place in the environment. As globalization pushes people to adopt the consumer habits of the world’s richer industrialized consumer nations, and as it creates new ways of drawing on and transferring natural resources globally, \( PAT \) leads to ever greater global environmental Impact.

Recently some global businesses and governments have begun to form coalitions and organizations to examine the risks that environmental losses may pose for them. In 2004, nearly 1,800 transnational corporations (TNCs) or their affiliates filed corporate responsibility reports, up from virtually none in the early 1990s. While this incipient corporate response reflects growing transparency and an acknowledgement of social and environmental necessities, 97.5 percent of the nearly 70,000 TNCs worldwide still do not file such reports. (Wackernagle and Rees, 1996) The clear implication is that if we are to be able to conduct effective assessments of the impacts of continued corporate investments (and these are the major forms of capital investments) we will need to have much better data coming from a far larger selection of firms.

Meanwhile, while the Kyoto Protocol on carbon emissions and the European Community’s Registration, Evaluation, and Authorization of Chemical
(REACH) agreement on limiting toxic chemicals show promise, global attention and governance responses to serious global problems continue to lag far behind in delivering solutions to the array of problems facing us. On the positive side of the ledger, Gerald Marten has identified both negative and positive environmental tipping points (ETPs) as a natural part of how societies self-organize to respond to changes that threaten their survival. Tipping points defined are those junctures where trends threatening or supporting sustainability appear, create feedback loops, and take on a momentum of their own. He cites the tension between forces of stability and forces of change naturally creating switches, complex system cycles in which growth, equilibrium, dissolution, and reorganization occur. According to Marten, “Sustainable societies are attuned to the cycles in their own society and their environmental support system.” (Marten, 2001) He examines how ecosystems and social systems co-evolve and co-adapt, providing numerous examples of societies solving their environmental problems with minimal government leadership or intervention. He suggests that, “ETPs provide a paradigm of hope that can foster deeper environmental literacy, more productive public dialogue, and more effective community action.” (Marten, 2001)

Nonetheless, as Jared Diamond points out in the final chapter of his book Collapse, How Societies Choose to Fail or Succeed, society after society over the last 3,000 years has failed by clinging to belief systems which tell members of the society that they are entitled to a certain material standard of living, unfortunately a standard that ignores losses of essential natural resources supporting that standard. As Diamond demonstrates, history shows us how these denials have cost these societies their survival. (Diamond, 2005) Further comment on societies denying environmental declines appears in the conclusion of this chapter. (A videostreamed lecture by Jared Diamond on how societies fail is available at http://video.google.com/videoplay?docid=3641551737596451012)
Next let us turn to the range of environmental problems and examine how material development and globalization continue to contribute to these problems.

The Global Environmental Dilemma

Earth’s environment can exist without a human economy, but a human economy cannot exist without a healthy environment.

"The Ecological Footprint is a measure of the "load" imposed by a given population on nature. It represents the land area necessary to sustain current levels of resource consumption and waste discharge by that population."

"According to the new 2005 Footprint of Nations report, humanity’s footprint is 57 acres per person, while the Earth’s biological capacity is just 41 acres per person. By comparing a population’s footprint with its biological capacity, Ecological Footprint analysis suggests whether or not that population is living within its ecological means. If a population’s footprint exceeds its biological capacity, that population is said to be engaging in unsustainable ecological overshoot."
“Humanity has moved from using, in net terms, about half the planet's biocapacity in 1961 to over 1.2 times the biocapacity of the Earth in 2002. The global ecological deficit of 0.2 Earths is equal to the globe's ecological overshoot.” (Dieoff, 2004)

Let us consider briefly the range of threats presently posed to both environmental and economic sustainability, then examine briefly some measures presently underway that may make sustainability possible.

**Challenges to Sustainability**

Concern over environmental decline has become a veritable publishing industry in itself. Combining evidence from the UN Human Development Report; The Pew Oceans Report, (Pew, 2003); Bill McKibben’s fine book *The End of Nature*, (Mckibben, 1999); other sources such as *Plan B 2.0* by Lester Brown at Worldwatch (Brown, 2005); and *Natural Capitalism* by Amory, Lovins and Paul Hawken (Lovins, Lovins and Hawken, 1999) we can -- via some oversimplification – thirteen significant challenges to sustainability.

1. **The Human Footprint** supplies an overview in the form of the total human drawdown on natural resources (oceans, deforestation, species losses (for example, coral), and wastes polluting the environment.

Other challenges include:

2. **Climate change, global warming, and sea level rise,**
3. **Communicable diseases and epidemics,**
4. **War, conflicts, and arms proliferation,**
5. **Access to education,**
6. **Financial instability and global economic collapse,**
7. **Governance failures and corruption,**
8. **Poverty, malnutrition, and hunger,**
9. **Energy shortages, and resource shortages,**
10. **Sanitation, access to limited clean water,**
11. **Trade barriers,**
12. **Population control,**
13. **International and local crime.**

Having already reviewed above humanity's over-consumption of natural resources as expressed in the human footprint, let us briefly examine the other issues that leave sustainability and globalization at risk.

2. **Climate change, global warming, and sea level rise**

Globalization growth proponents tend either to deny the alarming signals revealing these problems, or suggest that regulatory strategies such as
developing markets for carbon trading and technological changes sequestering CO2 underground will limit global warming and effectively allow for further traditional unimpeded growth. They also point to the Kyoto Protocol on carbon emissions as proof that international agreements will mitigate global warming, and add that the warming may be natural, not man-made.

Those insisting that growth is not sustainable point out that early in the 21st century, mankind now finds humans are inadvertently creating serious weather problems, ecological damage, and social disruptions via global warming. The Intergovernmental Panel on Climate Change (IPCC) has established global warming as a predictable phenomenon -- linking the rise in greenhouse gases to projected temperature rises of anywhere from 1.6 to 6 degrees Celsius in the 21st century. The outer limits of these incipient temperature changes, they remind us, will destroy life as we know it, an alarm that many find difficult to accept as real. The most recent studies suggest that as the globe warms, CO2 and other greenhouse gas releases speed up, intensifying warming all the further. In a tragic example of the consequences of warming, the heat that engulfed Western Europe in the summer of 2003 caused 52,000 people to die. 2005 has registered as the hottest year on record, and global warming is now melting the permafrost of arctic regions, which releases massive amounts of methane, also intensifying the warming trend.

A massive and apparently irreversible melting of Arctic and Antarctic ice packs into the oceans has begun. The most recent studies indicate that the Greenland ice pack is melting at triple a rate measured less than a decade ago. Scientists at the University of Maryland have established that for every 1 meter rise in sea level, shorelines will recede 1500 meters, or roughly a mile. (Steffan and Huff, 2005) At one meter of sea level rise, hundreds of millions of people living in harbor cities and along shorelines face displacement. (Brown, 2005) Consider the figure presented in Chapter One that relates development and income inequality in China. Some of the most economically important areas in China would be significantly impacted by such a sea level rise. In fact, given the importance of waterways in historic economic development, many of the world’s most important and largest cities are located in areas vulnerable to sea level rise. Storm damage triggered by warmer seas (sea temperatures have risen by 1 degree Fahrenheit in the last three decades) adds another barrier to sustainability. Hurricane losses in the U.S. in the decade of the 1990’s registered $113 billion, but in the six years since the year 2000, hurricanes have already caused $273 billion in damages, sending insurance rates soaring. Pacific Ocean typhoons have increased in frequency and intensity, which creates even greater levels of threat to countries with increasing populations. According to a study from Massachusetts Institute of Technology, hurricanes and typhoons arising in the Pacific and Atlantic oceans have doubled in power and now last longer. (Larsen, 2006.) As Hurricane Katrina in the United States demonstrated, storms can also seriously interrupt the production, refining, and distribution of the oil and natural gas on which growth, even parts of sustainable growth, depends.
The half million U.S. citizens who lost homes along the Gulf Coast to the 28 foot storm surge of Hurricane Katrina in 2005, and who cannot return represent a glaring example of global warming already displacing shoreline populations. We can predict in the coming decades that this phenomenon will increase.

Those advocating environmentally and socially conscious approaches to growth have strong evidence to support their case. The most recently projected upper limits of 21st century sea level rise — from 1 meter to 4.5 meters — will in time threaten the entire global array of harbors, docks, sea level airports, rail lines, highways, and other transportation infrastructure on which global commerce depends, causing massive dislocations and interruptions in its flow of supplies, and cutting off some markets altogether. Just-in-time parts supply — a key feature of efficiency in globalization — will face continuing risks. As environmental observer Bill McKibben has put it, “The same fuels that gave us our growth now threaten our civilization . . . We need to stop asking, Will this make the economy larger? Instead we need to start asking, Will this pour more carbon into the atmosphere?” (McKibben, 2006)

The destruction of species is occurring at rates that threaten whole ecosystems; the warming of continental landmasses, soaring storm damage, drought and desertification, and alarming losses in water supplies around the world all trace back to global warming.

Delegates to the United Nations Climate Change Conference in Naiobi in November 2006 sought to adopt a wide range of decisions designed both to mitigate climate change and yet recognize that particular allowances may need to be made for developing countries such as China and India. Accepting this framework, which included a review of the Kyoto accords in 2008, assumes that the most developed nations, including the United States, can be effectively brought into a framework of limitation. (UNFCC, 2006)
Figure 4. Satellite photography shows the melting of the Greenland Ice Sheet accelerating. Source: Arctic impacts of Arctic Warming, Cambridge University Press, 2994  http://cires.colorado.edu/steffen/

Figure 5: Atmospheric Carbon Levels

Atmospheric Concentrations of Carbon Dioxide, 1000-2004

Source: Scripps, ORNL, and IPCC
Global Warming Mitigation Efforts

While the Kyoto Protocol of 1997 requires strict standards in the measurement and monitoring of CO2 emissions, and 122 countries have ratified it, these countries represent only 42.2% of global CO2 emissions. Worse, few countries have met their emissions lowering standards. The United States, which emits 26% of all global CO2, has refused to sign the Kyoto agreement, and China and India, major CO2 emitters, have been exempted. Cuts in emissions thus far average 5.2% of 1990 standards, but whatever its value as a beginning, Kyoto fails to address greenhouse gas emissions effectively. Scientists tell us that the entire world needs to reduce CO2 emissions by a minimum of 60% if we hope to limit global warming and sea level rise. (Marshall, 2001)

With those higher emissions limits as a framework of what may be sustainable, current so-called carbon trading markets (discussed in Chapter 11) fall far short of what is required, despite the $2.4 billion in carbon credits -- the equivalent of 374 million tons of carbon dioxide -- changing hands in 2005. Carbon markets are proliferating, and reveal a range of price for carbon emissions, depending on the emissions credits available. (If rich countries, or rich producers decide that it is in their interest to purchase credits—and an alternative might be to restrict carbon production—the availability of the greenhouse gas credits simply shifts the global burden to those making credits available without necessarily reducing
total emission totals.) Markets for carbon credits have yet to even out, as emissions credits range in cost from pennies to $27 per ton of carbon dioxide emitted. (The Economist, 2006) In a step toward developing an informal regulatory regime, despite a lack of norms for voluntary reductions in CO2, the Chicago Climate Exchange requires of its voluntary members to produce a 6% reduction, its 210 member firms including Motorola, Dupont, and Ford. Absent U.S. and Chinese energy policies cutting greenhouse gases, and absent much more stringent Kyoto standards, this slow shift from awareness of global warming to action by some major TNCs must speed up dramatically and achieve a larger critical mass if sustainability is to be achieved before warming overtakes and seriously alters environments and economies.

A current solution to ozone depletion via international agreement, it turns out, may result in an even worse problem. The Montreal Protocol adopted 17 years ago, with 189 countries agreeing to its provisions, phased out the production and sale of chlorofluorocarbons (CFCs) that were destroying the earth’s ozone layer. CFC’s were also trapping incredible amounts of heat in the atmosphere. Manufacturers substituted different refrigerant chemicals. Unfortunately scientists now discover that while these replacement chemicals do less harm to the ozone layer, they generate two to three times as much in greenhouse gases as the 1997 international Kyoto Agreement would have all of its signers cut from their emissions. Hailed as the first effective example of an international agreement solving a major global environmental problem, the Montreal Protocol solved one problem only to create another. The refrigerant replacements - HCFC’s or hydrochlorofluorocarbons – produce massively higher amounts of greenhouse gases. While Kyoto aimed at reducing carbon emission by 1 billion tons by 2012, these HCFC’s will by 2015 have emitted between 2 and 3 billion tons more of carbon into the atmosphere, the same amount CFC’s would have emitted. A U.N report indicates that earth’s atmosphere can be spared 1 billion tons of carbon dioxide emissions if countries re-engineer HCFC uses away from their use in refrigerants, fire extinguishers, foams, hair sprays, and roof and wall insulation toward ammonia, hydrocarbons, or other ozone friendly chemicals. Representatives from industry, however, point out that ammonia and hydrocarbons also pose safety and energy efficiency problems. (Heilprin, 2006)

3. Communicable Diseases and Epidemics

As the SARS virus showed us in recent history in Hong Kong and Singapore, quarantines can suddenly cripple trade between various producer and consumer countries. The list of communicable diseases includes a new virulent TB strain resistant to antibiotics, AIDS, SARS, bovine spongiform encephalitis, avian flu, malaria, dengue fever, and asthma. Natural systems such as bird migration are involved in the vectors of some of these diseases, and we have seen repeated slaughters of hundreds of millions of chickens to avert avian flu from spreading. Damage to environments such as deforestation and coastal water pollution
exacerbates poverty, puts toxins into food supplies, and multiplies disease. Global public health systems thus far fall short of limiting the threats, yet globalization accelerates the spread of communicable diseases. Researchers estimate the emergence or re-emergence of over fifty virulent infectious diseases over the past two decades. (Reinhold, 2005; Wilcox 2005.) Sustainable growth will require much greater investment in public health resources on a global scale, particularly in fresh water and sanitation, and probably new limits on raising pigs, cattle, and chickens in “factory” type settings to cut off the disease vectors inherent in raising large numbers of animals in close quarters.

4. War, conflicts, and arms proliferation
All wars are in some way wars against nature and threats to sustainability, and the poor suffer the most from the long-term consequences of such violence. Ironically the global trade in arms, with a few exceptions, is routinely accepted as trade in just another set of products, with industrial nations specializing in the marketing of sophisticated weapons. Acts of terror and bombings in more than 34 countries around the world, genocide as in the Congo and Rwanda, criminal gangs seizing oil rigs in Nigeria, and state sponsored killings in the Darfur region of the Sudan – all link to poverty, frustrations, depleted environments, and forms of collective behavior that threaten sustainability. Such violence also discourages investment and impairs all forms of growth. Human beings have been able to limit human violence, but never eradicate it. Sustainability advocates face the challenge of advancing more effective forms of violence prevention and dispute resolution. (Further comment on the impact of violence on globalization appears in Chapter 15.)

5. Access to education
Increased rates of literacy result in real benefits -- higher per capita rates of Gross Domestic Product and major decreases in infant mortality. Roughly two-thirds of the earth’s 770 million illiterates are women, with India registering 50% illiteracy among its women, and Nigeria some 15%. Among women ages 15 to 24 in India, however, the U.N. push for global literacy has increased the number of readers to nearly 70%. (National Geographic, 2006) The resources devoted to education will require substantially higher policy priorities if sustainable growth and its complements, lower birth rates and social justice, are to become global realities.

6. Financial instability and global economic collapse
As we point out in our chapter on Economy, the outwardly robust global economy resembles within a house of cards ready to tumble. The U.S. federal deficit actually runs over $700 billion annually, and relies on foreign sources to loan the U.S. that amount by purchasing bonds. This excessive government debt consumes capital that otherwise might encourage investments in sustainable growth. Meanwhile U.S. consumers spend nearly $1 trillion dollars annually on overseas products and services, creating a balance of payments deficit, which combines with the federal deficit to raise questions about the stability of the dollar. (Drucker, 2005) Any variance in this pattern of foreign support for U.S.
deficits – inflation caused by rising oil prices, a panic run on U.S. currency, or an interruption of global trade by environmental collapse or epidemic – threatens to cut U.S. demand for world goods, creating a global recession or depression. As desertification in China and new droughts in parts of Latin America show us, global warming will pose growing regional threats to sustainable uses of the environment and sustainable global trade. (Cooper, 2006.) A whole new approach to balancing the U.S. budget and shrinking its trade imbalance is needed to reverse the present trend that threatens all forms of global growth.

On a smaller scale, small loans to people in under-developed countries have in tens of thousands of cases succeeded in helping them start their own businesses. Poverty relief is an essential concomitant of sustainable growth.

7. Governance failures and corruption
Depleted environments combine with poverty and corruption to create so-called failed states, countries in which the rule of law, the assurance of personal security, and effective government have collapsed. In such countries dictators seize assets and use gangs and the military to suppress civil rights. Nigeria, Haiti, and the Congo presently qualify as failed states. Other states manage to keep public order but selectively limit or oppress the civil rights of their citizens. Still other states sponsor acts of terrorism or subversion abroad as part of their foreign policies, among these major industrial nations. All of these categories of states can be called governance failures, for they allow individuals with power to ignore the needs of their citizens. Remedies for failed states require international debt relief, pressure to end corruption, and dramatic changes in WTO policies fostering self-sufficiency in developing countries. Remedies for nations failing to govern justly may require that nations agreeing to the United Nations Universal Declaration of Human Rights also agree to submit to the settlement of grievances before a world court. (More on the subject of failed states and global governance may be found in Chapter 15.)

8. Poverty, malnutrition, and hunger
Population growth, environmental losses, failed crops, drought, lack of investments, global trade barriers, and corrupt or incompetent governments mired in debt combine to leave hundreds of millions of people in underdeveloped and developing countries struggling to survive. 80% of the world’s financial resources are controlled by 20% of its people. 2 billion or more people live on less than $2 a day. The United Nations Development Program focuses on environmental regeneration and sustainable growth to improve the lives of these people and the conditions in which they live. The U.N. Millennium Development Goals form a rubric that encourages sustainable growth. The challenges of energy, water, and poverty rank among the most pressing for those advocating global sustainability. More is available on this subject in our chapter dealing with urbanization, as well as that addressing food security.

9. Energy shortages, and resource shortages
We have seen in recent years collapses of the electrical grids in developed nations, leaving tens of millions without electricity. Even in stable industrial societies, aging electrical grids reliant on central power production and fossil fuels show signs of faltering. But a larger threat to traditional growth, one requiring rapid and massive investment in alternative distributed energy, is the arrival of peak oil production amid growing demand for more oil. Given the rising constraints on fossil fuel emissions posed by global warming, only with sizable alternative energy investments will sustainable growth become viable. See our chapter above dealing with global energy issues. The technologies for alternative energy and significantly better energy conservation exist but require massive commitments and investments.

10. Sanitation, access to limited clean water
A combination of climate change and poor resource management is leading to water shortages in even the most developed countries. Industrial production and mechanized agriculture require significantly more water. According to the World Water Assessment Program of the United Nations, “To ensure our basic needs, we all need 20 to 50 litres of water free from harmful contaminants each and every day. In addition, a child born in the developed world consumes 30 to 50 times as much water as one in the developing world. The state of human health is inextricably linked to a range of water-related conditions: safe drinking water, adequate sanitation, minimized burden of water-related disease and healthy freshwater ecosystems. Urgent improvements in the ways in which water use and sanitation are managed are needed to improve progress towards meeting the Millennium Development Goals (MDGs) related to human health.” (Foulkes, 2006.) One billion people presently live in urban slums lacking clean water and sanitation. Sustainable growth will mean ongoing reorganizations of water uses to make them sustainable, plus fair distribution of water for all. (United Nations Human Settlements Report, 2003. UNESCO, 2005)

11. Trade barriers
Subsidies to crops, tariffs, informal trade barriers, and cartels controlling prices all combine to keep many developing countries from sharing in the kinds of free market growth that globalization has fostered for developed nations. The recent failure of the Doha round of WTO trade talks indicates that free market ideology has collided with the pragmatic demands of domestic politics in a variety of countries. While demanding that lesser developed countries open to free trade, the U.S, Japan, Korea and most of the developed countries in the EU refuse to cut subsidies to farmers that will make global competition in crops and food animals possible. Sustainable growth requires food sufficiency on a global scale if other sustainability needs are to be met. The world presently has the food to feed all, but free markets do not distribute it in ways that ensure sustainability for those in poverty. For more on this subject see our chapter on Economics and Chapter 15.

12. Population control
China has achieved some success in limiting population growth, and Japan and the countries of Western Europe are characterized by below replacement population rates. Despite the considerable effects of in-migration, even the United States has slowed its population growth to roughly 1% per year. Nonetheless, we continue to add some 76 million more people each year to the nearly 6.6 billion people on earth. As the explanation of the human footprint reveals in #1 earlier in this chapter, population control, or more precisely population decline, has become a core requirement of long term sustainability. More on population appears in our chapter on Urbanization.

13. International and local crime
The international drug trade has an income of somewhere between $500 billion and $700 billion a year, ranking as one of the world’s largest forms of enterprise, supporting entire economies in Afghanistan and Columbia. Its uses of labor and capital come at the opportunity cost of other forms of sustainable growth. Other forms of crime such as international terrorism, genocide, human trafficking, slavery, government corruption, pre-emptive wars, and white-collar crime add significantly to the total of money, lives and costs to health care, police, prisons, courts, business productivity and the environment. Sustainable growth will require that all forms of crime diminish in order for the human and physical resources that crime consumes to be transferred into sustainable forms of work, resource use, and better lives. How crime is transformed into sustainable growth represents one of larger challenges we face. More discussion on this subject appears in our chapter on Global Crime.

Toward Sustainable Growth: A Summary

The list that you have just reviewed outlines but oversimplifies the size and complexity of what must be accomplished to achieve a shift to sustainable growth. The choice to embrace sustainable practices will mean massive changes in the expectations and beliefs of consumer cultures that now propel traditional growth, and changes as well in government policies at all levels. So large and profound a series of changes will inevitably encounter refusals, disputes, and denials from those denying the need for change and resistance from virtually everyone who believes that his/her current interests would be negatively affected in some way by these changes.

According to Donella Meadows et. al. in The Limits of Growth, in early stages, we see many who would disguise, deny, or shift the costs of moving toward sustainability to others far away. We see such behaviors already in the bogus science offered to refute global warming, in the advocacy of so-called “clean coal,” and in the export of industrial wastes from the U.S. to China. In a second stage we see compromises such as car pooling, government sponsored emissions limits and carbon trading, and tax incentives for alternative energy uses and environmentally friendly architecture. Such measures ignore the limits environments require of us, but attempt to limit the pressures of growth on
ecosystems. Unfortunately, for all their good intentions, such measures in no way assure protection from overshooting ecosystem limits followed by environmental collapse or devastating damage. In truly sustainable growth, however, the local, national, and global limits of ecosystems have been identified and established as requirements that cannot be approached or exceeded. Populations have stopped growing, lifestyles have adapted to meet ecosystem limits by shrinking the human footprint, and economies have adopted systems that mimic nature in the use and reuse of natural resources. Sustainable growth means that societies embrace the trade-offs between the number of people the earth can sustain, and the material levels at which each person is supported. (Meadows, et. al., 2004)

As we have seen, and it bears repeating, the earth presently holds nearly 6.6 billion humans, and adds another 76 million per year. Data from Africa, Latin America, and Asia demonstrate that increasing numbers of humans overwhelm ecosystems, leave nearly 2 billion people in dire poverty, stimulate internecine wars and violence, encourage slavery and the exploitation of labor, and pose much higher risks for epidemics. Consequently, the sustainable growth narrative holds that reversing population growth has become a critically important, pressing need. Proponents of traditional growth via globalization argue that if technological innovations have made population increases possible thus far, we should anticipate that more such technological fixes will arrive to allow still larger populations to survive. In response, sustainable growth advocates argue that the innovative basis for all industrial growth, cheap energy, has now become the problem that threatens all economies and ecosystems – global warming and sea level rise. In short, they argue that some technological fixes supporting larger populations and higher rates of consumption have embedded in them the next environmental and social crisis.

**Economic Consequences of Global Warming**

In a study commissioned by the British government, Sir Nicholas Stern in early November of 2006 indicated that the anticipated global warming of 5 to 6 degrees Centigrade would shrink the global economy by 20%, setting off a worldwide depression from which recovery would be very difficult. In Stern’s words, “We have the time and knowledge to act but only if we act internationally, strongly, and urgently.” Stern’s study suggests that by investing 1% of present GDP on a regular basis to drastically cut greenhouse gases now, the economies of the earth may be able to limit the damage of global warming and survive more or less intact. (Stern, 2006) If economies around the world fail to make such an investment promptly, Stern’s report makes it clear that, “floods from rising sea levels will displace up to 100 million people...droughts may create hundreds of millions of climate refugees...melting glaciers could cause water shortages for 1 in 6 of the world’s population...up to 40% of species could become extinct.” (Stern, 2006) Simultaneously, British Chancellor of the Exchequer Gordon Brown called for a “long-term framework of a worldwide carbon market,” the hope being
to reduce European-wide emissions by 30% by 2020, and at least 60% by 2050. (Stern, 2006)

The urgency of this new call for action, outlining the trade-off between investment now versus tragic economic and environmental consequences later, falls within what scientists and economists call the precautionary principle. This principle holds that beyond the prevention of the economic costs of a global calamity, economies and their leaders have a profound ethical responsibility to protect and maintain the integrity of the natural systems that underpin all economies. Hence the need to exercise precautionary measures even if the weight of the evidence leaves some uncertain or reluctant to undertake steps to avert disastrous problems. Sir Nicholas Stern’s call for global commitment and action will influence the European Union policies on emissions, but it remains to be seen if and how it will become the catalyst for global action to limit the impact of global warming.

At a variety of levels hopeful signs have already begun appearing. The largest retailer in the world, WalMart, is initiating a major push to incorporate sustainable practices at many levels of its global operations, and will push its suppliers to do the same. The world's 12th-largest emitter of greenhouse gases, the U.S. state of California, produces 10% of the country’s carbon dioxide and 2.5% of the global total. The state will take leadership by legally requiring mandatory emissions caps on power plants, refineries, and other heavy industry, plus energy efficiency measures, cuts in tailpipe emissions, and an emissions trading market. The legislation aims at eliminating 174 million metric tons of carbon dioxide, a 25% cut in greenhouse gases by 2020. Twenty-two states within the United States have some system of greenhouse has emissions limits in place or under consideration. In Western Europe the EU Commission’s REACH system for limiting the production and sale of chemicals until they are proven harmless to humans will have a very positive effect on "positioning" manufacturing in the direction of sustainability. Germany and Denmark have invested heavily in wind power, and China has under development the largest wind farm on the globe. Perhaps the key will lie in finding the positive tipping points, the situations and places where systems can readily profit from investments in and changes toward reducing the human footprint.

California’s experiment embodies what Gerald Marten describes as the resilience societies need in coping with change. He writes, “it [resilience] can be in conflict with stability and efficiency, which have become priorities for contemporary society. A key to resilience and ecologically sustainable development is to enhance the adaptiveness of contemporary society and its interaction with its environmental support system.” (Marten, 2001)

As Sir Nicholas Stern’s report on global warming indicates, scientific signals about pressing environmental issues such as global warming have begun to pressure national and global forms of governance to come up with policies that
will diminish the looming risks to all forms of global life -- reverse the wholesale changes in nature that put the quality of human life at risk. Absent such policies and general global agreements and action to pursue their requirements, traditional economic growth may continue for decades, but not without seriously damaging the hopes for survival of present and future generations. Beyond governance, however, the fate of globalization in many ways is a race between global capitalism investing in and adopting sustainable practices before damaged global environments begin to impose their own limits or threaten in major ways the very existence of traditional growth.
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Chapter 15:
The End of Globalization as We Know It?

To define contemporary globalization and discuss its major features, we have chosen to discuss it as if it is an on-going phenomenon and process that will continue to expand in the directions detailed in our various chapters. In the early chapters, however, we also pointed out that as globalization has emerged and taken form over the past five decades, clearly it operates much like a complex system. Its multiple inter-connected parts reveal a complex weave of interdependence. Novelty continually crops up in various parts of the system. Moreover, because of the vast number of continuing changes, the behaviors, processes, and outcomes that make up globalization are difficult if not impossible to predict. The levels of complexity are sometimes so great that they defy a satisfactory explanation.

In spite of these difficulties, in this chapter, we want to inquire into the future of globalization. In particular we want to challenge existing assumptions by asking, could this be the end of globalization as we know it? Might we have arrived at a point where the dynamics and directions of globalization as described in the previous chapters are nearing an end, or taking a turn toward another set of possible futures?

Returning to the form of inquiry introduced in the first chapter, we can note that those who favor the “globalization as progress” narrative would perhaps be shocked by the very idea that contemporary globalization might have already run its course. For many who favor the progress narrative, this new era of globalization is just opening up, being propelled by ever-greater economic growth, networking innovations, new technologies, and increasing exchanges through the many circuits that make up contemporary globalization. Even globalization-as-progress adherents who themselves see changes coming in the course of globalization, would argue that we should do everything possible to preserve the benefits already gained through globalization, and make sure we deter it from heading off in another direction.

Those who hold to the “globalization-as-disaster” narrative have advanced many arguments to support the view that globalization is a disaster precisely because it is unsustainable, at least in the dominant forms in which it has appeared to date. Having considered some of these views, we think it appropriate to pose various questions to readers to encourage them to draw their own conclusions about the possible future(s) of globalization.

The “Environment/Energy” Question:
As we have argued in Chapters Nine and Thirteen, achieving this current level of globalization has triggered a startlingly widespread series of environmental costs that are degrading the planet much faster than previous human activity.
Processes such as massive greenhouse gas (GHG) emissions and resulting global warming have set off large-scale environmental and economic system changes that will prove difficult if not impossible to reverse. For example, the prestigious Hadley Climate Centre in England now predicts that up to one-third of the earth’s surface will be desert by the year 2100, destroying crops and the planet’s forests that absorb GHGs. (McCarthy, 2006) The world’s governments and transnational governance organizations face two vitally important questions: 1) do decision makers globally understand the extent of the ongoing damage and its very real threats; 2) do they have the will to adopt and implement policies that will slow, stop, or reverse severe environmental threats, let alone stop them from intensifying?

As our earlier chapters suggest, the answer to both questions is No! Far from acting to slow or stop these global environmental damages, the consumer dynamics of globalization assume that even more growth is both possible and desirable, and in many cases they pursue very significant, large-scale growth. As some commentators put it, our social and economic processes are addicted to growth. China, which in some ways is such a recent participant in this phase of globalization, has already become accustomed to annual rates of economic growth of 10% or more of gross domestic product. In the wake of widespread incidents of social disorder, Chinese leader Hu Jintao recently asked his Chinese countrymen to work harder at harmony instead of working just to get wealthy. Managing the Chinese economy to achieve lesser rates of growth will be very difficult and may prove politically unpopular. Even relative declines to more modest growth rates of 5-6% may be perceived as economic loss and recession.

As we have emphasized throughout the text, world population growth is poorly aligned with the different national economic capacities trying to support that growth. The richest countries of the world — those that on a per capita basis make the greatest claim on global resources including energy — have population rates that are often below replacement — many of them are shrinking. (For example Japan and many countries in Western Europe.) The poorest countries of the world, and the largest — India, China, and Indonesia and much of Africa — have very high population growth rates, which means that even when they achieve high rates of economic growth, per capita benefits may be static or small. In the Philippines, to take the example of another rapidly growing Asian

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1 This difficulty is already illustrated in the tensions between the national political leadership and that of local municipalities such as Shanghai over the rapid increase in real-estate prices. (Illustrating further the kinds of tensions between “local” and “national” governments touched on in Chapter Seven on urbanization.) The national government is concerned that the rapid rise in urban housing prices creates a barrier for those whose incomes are rising less rapidly. The municipal government, on the other hand is willing to let prices rise as rapidly as they will, as it benefits in the short-run from a real-estate market that is “creating value” at such rapid rates.
country, population growth absorbs annual per capita economic growth, leading to a pattern of economic stagnation. Figure 15-1, which displays the historic population growth rates by continent, illustrates that most of world population growth in the present and near future is in Asia. As subtext, it is not just population growth that threatens globalization, but also the per capita demand individuals make on natural resources, the so-called human footprint. That footprint presently suggests that we need 1.2 earths to supply the present demands on the global environment.

Such concerns about global population, resources, environment, and sustainability are hardly new. They have been the source of significant amounts of research, data gathering, and policy consideration for much of the last four decades. Organizations such as The Worldwatch Institute (www.worldwatch.org/) — to take but one example -- provide the latest data and analysis, and offer conclusions and predictions. The first conclusion appears in the often-cited parallel between increases in global wealth and increases in global inequalities. The world economy has increased seven-fold over the last half century, to $61 trillion, and presently boasts a brisk global economic growth of 4.9%, yet 20% of the world’s population lives in dire poverty on less that $2 a day. In our discussion of this subject in Chapter Seven (Urbanization, Migration and Inequality), we emphasized that world-wide pockets of human settlements are becoming on balance richer, while other areas—often rural areas—are becoming poorer. (See, for example, the report of this outcome at Worldwatch, 2006. Or refer to Mygatt, 2006)

Figure 15.1 Historical World Population Growth
Mounting evidence from contemporary globalization poses a critical question: can continuing efforts to increase economic growth be sustained at current or greater levels of production and demands on resources? The analysis above of energy demand and costs, health, food security, rising inequality, and environmental damage would suggest that they can not be sustained. It follows then, that if current patterns of growth cannot be sustained, what does present evidence suggest about current patterns of globalization taking new forms? Out of many recent changes in globalization, one set of evidence points toward the rise of failed states, regional violence, and violent non-state based movements as contributing to the formation of new patterns of global interdependence and interaction.

Failed States and Global Insecurity

The contemporary era of globalization began following WW II when the US and Europe and several other major countries fashioned an international system that allowed for the economic recovery of war-ravaged nations, such as Germany and Japan. (These were the so-called Breton Woods agreements that produced various new transnational institutions, including the International Monetary Fund. See Chapter One for a review of these events.) This system also influenced much of Asia and Africa, leading to the emergence of a wide variety of post-colonial nations. Over the past six decades these vectors of change have vastly increased the number of nations: for example, United Nations membership grew from some 90 nations in the early 1960’s to almost 192 in the early 21st century. Contemporary globalization emerged amid the constraining tensions of the Cold War between the United States and the Soviet Union, yet it had sufficient vitality to survive that intense economic rivalry and the many smaller-scale “hot” wars—civil, national and international—that accompanied it. With improvements in shipping and communications, a surge of agreements and patterns of exchange created the trans-national global trade that allowed China, India, Brazil, Korea, and major new actors entry into global commerce. Globalization next saw the emergence of powerful new regional aggregations such as the European Community and its successor the European Union (EU). The collapse of the Soviet Union triggered significant changes in state structures, such as the reunification of Germany, the separations of the Czech Republic from Slovakia, the dismembering of the former Yugoslavia, and the emergence of the republics of the former Soviet Union as independent states – each with its economic consequences for global trade.

A variety of serious difficulties have accompanied these enormous changes in the international state system. For example, over the past 60 years a conservative estimate lists 228 state-centered armed conflicts in 148 locations.
Since the end of the Cold War there have been 118 conflicts in 80 locations. (Harbom and Wallensteen, 2005) Figure 15-1 indicates the numbers of armed conflicts throughout the world for the period 1946-2004. Harbom and Wallensteen have classified the range of armed conflicts in the post-Cold War period in terms of their relative expansiveness, as represented in Table 15-1.

Figure 15-2 Number of Active World Conflicts 1946-2004

Source: Adapted from Harborn and Wallensteen, 2005

Table 15-1 Dimensions of Armed Conflicts 1989-2004

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<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Intrastate</td>
<td>38</td>
<td>44</td>
<td>49</td>
<td>47</td>
<td>40</td>
<td>44</td>
<td>36</td>
<td>37</td>
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<td>33</td>
<td>34</td>
<td>31</td>
<td>30</td>
<td>28</td>
<td>25</td>
<td>27</td>
<td>90</td>
</tr>
<tr>
<td>Internalized Intrastate</td>
<td>4</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>2</td>
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<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
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<td>49</td>
<td>51</td>
<td>51</td>
<td>45</td>
<td>45</td>
<td>41</td>
<td>41</td>
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<td>41</td>
<td>37</td>
<td>36</td>
<td>32</td>
<td>29</td>
<td>30</td>
<td>118</td>
</tr>
</tbody>
</table>

Source: Adapted from Harborn and Wallensteen, 2005

Conflicts link closely with “failed states”, those whose governing structures have weakened to the point where government cannot maintain order or effectively implement policy. The journal Foreign Policy and the Fund for Peace have maintained an index of failed states since the 1990s. In 2005 this index identifies more than 2 billion people as living in over sixty failed states. The index uses 12 indicators of instability that range from “domestic pressures” to “factionalized
“elites” and “external intervention”\(^2\). The index ranges in value from 106 for the #1 ranking (the most failed state), the Ivory Coast, to 82.4 for Gambia at #60. The top twenty failed states are listed in Table 15-2. Inspection of the table and the nature of the indicators that make up the index suggests several conclusions:

**One**, the indicators catalogue the kinds of inequalities that trouble poorer countries in contemporary globalization – sprawling urbanization, health system collapses, educational system failures, maldistribution of income, etc. These are the countries that by and large are being left out of the positive, integrative benefits of globalization. As the director of a research facility in the Philippines said to one of the authors some time ago, “current globalization tends to be about the globalizers and the globalized.” This assessment parallels the progress and disaster contested narratives that we have outlined throughout the text. By and large, these failed states are the globalized countries.

**Two**, nations suffering from violent dislocations, rapid urbanization, and exclusion from the developmental benefits of globalization find themselves “left behind,” progressively more disadvantaged when compared with the richer, more powerful nations involved in globalization. From these positions of disadvantage and despair, their impoverished citizens find little incentive to support governments that fail to help them. Groups in some of the failed countries form anti-state movements that take root and are more likely to continue to evolve. Moreover, it is from such movements that increasing numbers of “non-state” guerrillas and agents may be recruited for violent acts against the states that benefit broadly from globalization. For example, terrorists have set off bombs in 34 countries recently, most of these countries being beneficiaries of globalization. The disadvantages and despair permeating failed states create the well-spring of recruits for global terrorism.

Table 15-1 Failed State Index

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Index Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ivory Coast</td>
<td>106.0</td>
</tr>
<tr>
<td>2</td>
<td>Democratic Republic of the Congo</td>
<td>105.3</td>
</tr>
<tr>
<td>3</td>
<td>Sudan</td>
<td>104.1</td>
</tr>
<tr>
<td>4</td>
<td>Iraq</td>
<td>103.2</td>
</tr>
<tr>
<td>5</td>
<td>Somalia</td>
<td>102.3</td>
</tr>
<tr>
<td>6</td>
<td>Sierra Leone</td>
<td>102.1</td>
</tr>
<tr>
<td>7</td>
<td>Chad</td>
<td>100.9</td>
</tr>
<tr>
<td>8</td>
<td>Yemen</td>
<td>99.7</td>
</tr>
<tr>
<td>9</td>
<td>Liberia</td>
<td>99.5</td>
</tr>
</tbody>
</table>

\(^2\) The 12 indicators of instability are: (1) domestic pressures, (2) refugees and displaced persons, (3) group grievance, (4) human flight, (5) urban development, (6) economic decline (7) delegitimization of state, (8) public services, (9) human rights, (10) security apparatus, (11) factionalized elites, (12) external intervention. (Foreign Policy, 2006)
<table>
<thead>
<tr>
<th></th>
<th>Country</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Haiti</td>
<td>99.2</td>
</tr>
<tr>
<td>11</td>
<td>Afghanistan</td>
<td>99.0</td>
</tr>
<tr>
<td>12</td>
<td>Rwanda</td>
<td>99.5</td>
</tr>
<tr>
<td>13</td>
<td>North Korea</td>
<td>95.7</td>
</tr>
<tr>
<td>14</td>
<td>Columbia</td>
<td>95.0</td>
</tr>
<tr>
<td>15</td>
<td>Zimbabwe</td>
<td>94.9</td>
</tr>
<tr>
<td>16</td>
<td>Guinea</td>
<td>94.7</td>
</tr>
<tr>
<td>17</td>
<td>Bangladesh</td>
<td>94.3</td>
</tr>
<tr>
<td>18</td>
<td>Burundi</td>
<td>94.3</td>
</tr>
<tr>
<td>19</td>
<td>Dominican Republic</td>
<td>94.2</td>
</tr>
<tr>
<td>20</td>
<td>Central African Republic</td>
<td>93.7</td>
</tr>
</tbody>
</table>

Source: Foreign Policy, 2005.

**Three.** In addition to their unwelcome contribution to the global accumulation of human misery, failed states place a burden on *global governance* that may prove insurmountable. *Global governance* takes two basic forms. First, it refers to creating institutions and processes through which specific forms of governance can function. Many observers would see the United Nations in this light, or the World Court, or the World Trade Organization. Global governance springs from nations recognizing their common interests and establishing inter-national institutions to which governments willingly lend their support. While such agreements may in some ways limit their sovereignty, national governments see the benefits of global governance as outweighing such risks because the international agreement operates on behalf of all its subscribing members. Because global trade depends on the willingness of countries to alter some of their domestic policies – such as crop supports or import duties – inevitably some countries see the policies and agreements of global governance failing to meet their needs. At these junctures, initial points of agreement wane. The good will and positive hopes of some nations give way to divisiveness, mistrust, and disagreement. Such apparently has been the case in the recent so-called Doha World Trade Organization round, where the pursuit of further free trade agreements ended in a stalemate and failure.

Another related meaning of *global governance* places the emphasis not on authorizing institutions, but on seeking to govern the specific consequences or threats posed by globalization, such as climate change, or regional security breakdowns, human trafficking, global crime, disease outbreaks etc. In these situations, nation states, transnational agencies (including non-governmental organizations, and transnational corporations) may work through quasi-governance organizations, such as the World Health Organization, in a disease outbreak, or try to fashion a new arrangement such as talks or a treaty to work cooperatively on a given problem. These kinds of arrangements are limited by which nations agree to participate and which decline. Examples would include efforts to stem the production of greenhouse gases through the Kyoto Accords, with which the United States has refused to cooperate (claiming that to do so
would be to create unacceptable costs within the US economy), the Montreal
Accords limiting the release of CFC gasses in the atmosphere, or efforts to
develop six party talks to deal with North Korea’s development of nuclear
weapons.

Failed states negatively impact both kinds of global governance. With respect to
the first, they are often the very producers of the instabilities and social ills that
such governance mechanisms seek to prevent or govern. The continuing
genocide in the Darfur region in the Sudan presents a case in point, with the
government attacking its own citizens, and these victims calling for international
intervention to provide them security. (Note that the Sudan holds the # 3 ranking
in the Failed States Index.) In short, failed states make it unlikely or at best highly
problematic that global governance organizations such as the United Nations can
produce security and stability for the world. Failed states also impede the second
kind of global governance activities, those directed at a particular process or
outcome, for example, the recent cease fire in the conflict in Lebanon. Even when
failed states out of self-interest participate in such efforts, their various disabilities
(as represented by the indicators of the Failed State Index) make it difficult for
them to produce controllable outcomes. Frequently, segments of a failed state’s
population—for example, the army of the poor that periodically seizes oil
production facilities in Nigeria—prevent the failing government from achieving the
stability or other outcomes needed. While a given failed state may desire the
same outcome that other more successful governments urgently want to see (e.g.
control over the vectors of bird flu), failed state leaders or agencies lack the ability,
integrity, or control to deal effectively with the problem.

Globalization depends on a series of interwoven actions, e.g. the creation of
production and consumption networks, and creating a variety of complex social
structures, e.g. production facilities, sustainable labor forces, transportation
networks, legal and social order networks, education and healthcare facilities,
minimal public health capabilities, effective media of communication, etc.
Failed states are unable to provide for, maintain, and reproduce many of these
requirements for social exchange, which frequently leads to them being left
behind as other economies grow and flourish. In the terms we employed in the
introductory chapters, the global circuits of exchange will be imperfectly
developed throughout the world. As we inquire into the future of globalization, this
lens would suggest that we are likely to see development become more rather
than less un-even. As the circuits of exchange intensify through growing trade and
the frequency of exchange, the hot cells of globalization grow, distancing
themselves ever more from the cold cells, in which growth is slow or failing. How
the more successful globalization participants can deal effectively with failed
states presently poses a persistent, growing problem, one presenting a series of
dilemmas for those who look to global governance for security.

Regional Domination
This sense of profound unevenness in the development of the world (note how many of the top 20 ranked failed states are in Africa) leads some scholars to suggest that the root forces that have impelled globalization over the past four decades may be running out of steam. They point to the persistence of inequality in the midst of growth, conflicts in failed states, looming energy shortages, and severe environmental changes such as global warming as possible causes for globalization to begin to fail. Others point to contemporary globalization and say, in effect, our world has passed a point of no return — many of the innovations, communications breakthroughs, and improved efficiencies in business practices that have come to make up the world are irreversible, save some unpredictable catastrophe. (For more on the first argument, see Friedman, 2005, and for more on the latter, see Diamond, 2005.)

Others perceive regional and national differences as persisting despite the homogenizing influences of globalization. From this viewpoint, language, social institutions, religious and cultural beliefs and practices, genetic differences, plus environmental, geographic and population distinctions combine to make life in many areas and regions of the world significantly distinct. For all the commonalities that globalization has brought to the world, this argument goes, these regions are and will remain significantly different. Over time, it can be expected that the pressures toward commonality and consumerism that have characterized globalization will inevitably give way to the powerful, ancient patterns of regional and local life.

This argument -- seeing regional “determinants” as balancing or outweighing the press of global forces -- sadly has supporting evidence in the failures of economic development, the descent into ethnic or tribal conflicts, and the severe mal-distribution of wealth in some failed states. Similarly in the clusters of successful states, as they progress toward further trade integration (even though the WTO has stalled), one can observe a sharp increase in regional and bi-lateral trade agreements, economies linking nations together via the benefits of comparative advantage. This pattern appears to be more representative of a kind of regionally-led globalization that differs from patterns of the past thirty years.

Over twenty years ago, the well-known peace scholar Johan Galtung argued in a series of lectures presented at the University of Hawaii, Manoa that the world might in a reasonable period of time come to be organized in what he called “regional hegemonies”, meaning various nations in a loose geographic region under the influence or leadership of a dominant nation or nations. Galtung’s view is that hegemonic leaders of regions are identifiable by the complex sets of beliefs and practices—views of the world, basic cultural practices, and ideas of life’s purposes—that make up people’s lives. As observers we might compile a list of potential regional hegemonies with cultural and state leadership that looks something like:

Asian-Confucian-China
Asian—Non-Confucian—Japan
Russian—
European—EU
Arabic—Persian—Middle Eastern
South Asia—Vedic—India
South East Asia—no leading hegemon, perhaps economically under the increasing influence of China
Central Asia—no leading hegemon, but perhaps Islamic in overarching form
Africa—no leading hegemon
North America—Secular modernism—US
South America—Contested modernism—Brazil, Venezuela, Argentina

The unfinished nature of such a list testifies to the changing relative positions of nations and regions on any such list. The absence of a clear-cut hegemonic power in Asia, Central Asia (where previously Russia occupied such a position) or Africa indicates the fluid nature of any regional organization. As recently as two decades ago, Japan’s role in North and East Asia appeared stronger than it appears today. The extraordinary rise of China as economic power may signal its emergence as a regional hegemon for all of Asia. This triumph of economic power would mirror the central role that the US played in the earlier decades of contemporary globalization, along with Japan during the period from the mid-1970’s until the collapse of its bubble economy in the late 1980s. Alternatively, the current movement toward Islam may represent a cosmological view of the world that serves to knit countries together in a broad geographic region that includes much of Central, Southeast and South Asia and parts of Africa.

However one explores these arguments about regionalism, the point remains: regionalism is a pervasive source of commonality and identity, and may emerge as an organizing principle equal or superior to the characteristics of contemporary globalization.

Conclusion and an address to the reader:
In this chapter we have explored three simple scenarios questioning whether current globalization should be thought of as a fixed course along which the world should be expected to travel. We have underscored the disruptive effects that rising fossil fuel uses and intensifying global warming may have on the course of globalization. We have also emphasized that the proliferation of failed states under the current regime of globalization may destabilize the world sufficiently to interrupt its current course. In a worse case scenario, prolonged regional armed conflict could escalate into more broadly based wars involving regional powers. And, we have introduced the phenomenon of regional hegemony to suggest that, as economic power shifts, and as social, technological, and political changes occur, globalization seems likely to promote regional interactions and groupings.

We hope to encourage the reader to examine the various patterns of globalization and to inquire after their many ramifications. Globalization is not a single
phenomenon, as we have consistently argued. Quite to the contrary, as we argue in Chapter Three, contemporary globalization most resembles a system whose interactive variables constantly produce a wide variety of behaviors, some familiar and expected, and others novel and unpredictable. Because the system is so fundamentally complex, humans quite understandably back away from so much complexity, or ignore it, trusting in whatever local institutions exist at the political and civil level to take care of one’s interests.

This text promotes another kind of view. First, if one is not aware of something, one is less likely to act on it with a clear purpose in mind. Thus, we have offered text that identifies and describes some of the more important phenomena that make up globalization. Globalization presents a constantly shifting face. Witness the surprising growth of the annual U.S. trade deficit from few billion dollars thirty years ago to over $800 billion this year, with the U.S. assuming the role of a major buyer fueling growth in economies around the world. Our message is that as individuals, we need to be aware of the scale of globalization and the variety of consequences it holds for most of the earth’s population. Second, our analysis of contemporary globalization underscores that large-scale actors -- states, global corporations, extra-governmental organizations -- propel and shape most of what we define as globalization. This recognition tends to encourage a deterministic view of globalization, a sense that individuals can do little to change those forces and outcomes that do not benefit us. But, there is a paradox here. On the one hand, massive economic forces, especially those of production and consumption, underlie globalization. As we have pointed to in our discussion of neo-liberalism, market mechanisms and ideology have served to extend globalization throughout the world. But we are all consumers, and demand in the form of all of our choices matters. While marketers have learned to develop and shape consumer choices, largely through advertising, our personal choices remain significant if in the aggregate they demand what benefits a sustainable way of life.

Consumer movements throughout much of the world can influence the market, which in turn can punish firms that ignore changes in demand. Granted that consumer movements have definable limits, but their success sometimes exceeds their scale. Organizing consumers through much of the world has led to the politics of “anti-globalization” groups, protests at WTO and trade group meetings, and calls for trade barriers and protection of domestic jobs and markets. The essential message reminds us that ultimately globalization outcomes depend on the nature of choices we humans make, not on some blind forces of history or economics.

Finally, it is important to realize that contemporary globalization – with its threats to us all (e.g. in environmental endangerment) and its benefits (in terms of increased incomes, life opportunities) -- relies on political institutions which we can influence. These institutions authorize and promote the decisions, for example, free trade agreements that lead to the outcomes that we experience as globalization. To the extent that the political discourse of a society fails to discuss
the positive and negative effects of globalization, then its critical decisions will be uninformed and flawed. Many of those reading this text will come to it from outside of the political process and will not see the pro and con viewpoints of globalization as within their personal capacity or responsibility. They also are unlikely to try to influence the direction of globalization through the political process. But most of the people reading this text in an educational situation have an opportunity to develop their views critically and to seek to influence the views of others with whom they have contact. And many of the people reading this text will go on to have careers in business, or education, or government. Our hope as authors is that this brief introduction to the complexities of globalization will engage you, pique your interest, start you on a lifelong journey of discovery in this rich subject matter, and stimulate you to participate in the political processes that shape globalization.
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