

Chapter Four

Dynamics of Change and Novelty in Contemporary Globalization

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 reductionistic 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 (Lewin, 1999).

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 nanotechnology, or the properties of international finance, has led to all of these forms of human endeavor becoming interdependent and based on other innovations and inventions. All of these areas make use of computers, which means that all make

use of microprocessors. 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 takes 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 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, much as the first stage of the Internet led to development of its second based on social network sites. 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).

To mention just one additional form of novelty before moving on, the complex pattern of interactions that we term globalization has revolutionized how business is done. We explore this in other chapters where we discuss the economy, the nature of education in a globalized world, and patterns of migration and urbanization that are predicated on new forms of labor. This is a subject unto itself, and the processes of innovation contained within the contemporary business sector are continuous and extensive. A particularly interesting form arose in 2008 when first a little known T-shirt company (Threadless) and then a high-end sneaker company (RYZ) began pursuing a business model that has the potential of radically changing the relationship between consumers and producers. The model, called “crowd sourcing,” is designed in effect to let consumers tell producers what they want in a product before the product is produced. In short, the model allows the consumer to become the designer of a product. As MIT professor Eric von Hippel (cited in Kaufman, 2008), an expert in innovation management, says,

“ . . . online design is becoming a substitute for in-house research and development while voting takes the place of conventional market research.

"This is really the biggest paradigm shift in innovation since the Industrial Revolution," von Hippel says. "For a couple hundred years or so, manufacturers have been really imperfect at understanding people's needs. Now people get to decide what they want for themselves." (in Kaufman, 2008).

Contemporary communication dynamics virtually ensure that this model will diffuse and find applications in many additional fields of endeavor.

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, often new dimensions of change occur. 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, to take just one example, initiated the Sakai Project to develop a community source software program forming a Collaboration and Learning Environment (CLE) that builds on the open source model made famous by Linux, Mozilla, Apache and other non-commercial oriented products. Other examples have been subsequently developed based either on open source or made available without cost to users. As these examples suggest, combination changes operate by creating multiplier effects: 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. Combined changes may 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. Indira Gandhi University, established in 1985, is an extraordinary instance of these dynamics. Established as a combined distance and open university directed at providing widespread access, it enrolls 1.8 million students (Wikipedia, 2008).

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 have access. 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, and has expanded even more recent uses with point of sale commercial authorizations and the entire array of on-line commercial transactions, including those available through personal hand held devices.

This array of electronic linkages that permit one to pay bills, purchase materials, seek loans, and engage in a wide-variety of other bank related functions online may themselves be viewed as part of the same processes of change. 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 the now familiar and commonplace world of "e-commerce," shopping on-line, and auction sales via such exchanges such as eBay. Although global data are probably unreliable, one source reports the total volume of B2C (business to consumer) electronic transactions, primarily conducted over the Internet at \$280 billion (Mindbranch, 2008).

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 they did not become a significant market and did not begin to change consumer habits until they shrank 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 audiocassettes became available, and the entire music industry was transformed, following which videocassettes 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 videocassette 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 multimedia 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. Today, of course, the utilization of the entire array of digital devices is widely used across an entire variety of non-state political activity including the global coordination of terrorist networks. These in turn serve to call forth ever more complex and comprehensive state responses to such threats, impelling the world toward an organization of surveillance in which literally billions of communications are captured and monitored daily by the security services of many nation states (Ball and Webster, 2003).

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 on 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 linguistic 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 and 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. Korea adopted a policy in 2008 to change the teaching of English, making conversational English instruction mandatory in schools. The idea is that learning English through grammar and textbooks does not assure sufficient expertise to allow Koreans the currency they require to be globally competitive. As a result of this continual pressure to “globalize English” 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 may have differing meanings for 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. Some chaos may mean more creativity, but too much chaos means the destruction of the order and known patterns we rely on to feel secure and accomplish the demands of daily life. 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, 2008). (For a further discussion of complex systems see: *Science*, Vol. 284. No. 5411 1999, which is a special issue devoted

to this subject.)

One 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 more highly of ourselves and of 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 into the atmosphere, the melting of the polar ice caps or arctic permafrost would not stop. 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 that are no longer as cold as they once were. Examples abound. This, then, is the global warming predicament (Ministry of Forests, 2003).

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 losses, 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. We discuss this further in our chapter on food security.

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 (a) we can act with only partial information, (b) because a decision that creates positive change for one element of the predicament may negatively impact one or more other elements of the predicament, (c) because complex systems produce both unintended and unpredictable consequences, and (d) because we operate 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 uncertainty 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 (e.g., 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, and often would prefer a situation that preceded 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 (sometimes viewed as traditionalists) in business organizations, political parties, or on sports teams.

The core attitude is a belief in a value system that exists 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.

For Additional Study

Innovation and novelty are explored throughout a series of video lectures known as TED, which stands for Technology, Education and Design. Two of these of specific interest, by Negraponte and Ruiz are listed below. However, the entire series is available at: TED.com

Nicholas Negroponte discusses the global project of supplying one laptop per child throughout the world. Available at:
http://www.ted.com/index.php/talks/nicholas_negroponte_on_one_laptop_per_child_two_years_on.html

Hector Ruiz talks about a project to connect at least fifty percent of the world to the Internet. Available at:
http://www.ted.com/index.php/talks/hector_ruiz_on_connecting_the_world.html

References

- Ball, Kristie and Webster, Frank (eds.), 2003, *Intensification of Surveillance: Crime, Terrorism and Warfare in the Information Age*, Sterling, Virginia: Pluto Press.
- Castells, M. 1996, *The Information Age: Economy, Society and Culture. Volume I: The Rise of the Network Society*, Oxford: Blackwell Publishers.
- Crawford, James. 1998, "Endangered American Languages: What is to be Done and Why?" Available at:
<http://ourworld.compuserve.com/homepages/JWCRAWFORD/brj.htm>.
- Friedman, Thomas, 2005, *The World is Flat: A Brief History of the Twenty-First Century*, New York: Farrar, Straus and Giroux.
- Gills, Barry, ed., 2000, *Globalization and the Politics of Resistance*, New York: St. Martin's Press.
- Gladwell, Malcolm, 2002, *The Tipping Point: How Little Things Can Make a Big Difference*, Boston: Little Brown and Co.
- Kaufman, Wendy 2008, "Crowd Sourcing Turns Business on Its Head," National Public Radio, *Morning Edition*, August 20.
- Lewin, Roger, 1999, *Complexity: Life at the Edge of Chaos*, 2nd edition, Chicago: University of Chicago Press
- Mindbranch, 2008, "The Alternative Payment Systems Industry in the U.S.," available at: <http://www.mindbranch.com/listing/product/R567-566.html>.
- Ministry of Forests, British Columbia, 2003, "Backgrounder: Timber Supply Analysis, Mountain Pine Beetle Infestation," Ministry of Forests, October 30. Available at: <http://www.google.com/search?client=firefox-a&rls=org.mozilla%3Aen-US%3Aofficial&channel=s&hl=en&q=Pine+beetle+infestation+in+northern+latitudes&btnG=Google+Search>
- Outsource2India, 2005 "Outsourcing Radiology," available at:
<http://www.outsource2india.com/services/radiology.asp>.
- Stone, Deborah. 1997, *Policy Paradox: The Art of Political Decision Making*, New York: W. W. Norton & Co.
- Telemedicine Information Exchange, 2005. available at: <http://tie.telemed.org/>.
- Wikipedia, 2008. "Chaos Theory. Complexity Theory," available at:

<http://en.wikipedia.org/wiki/Special:Search?search=Chaos+theory+complexity+theory&go=Go>.

Wikipedia, 2008, "World's Largest Universities," available at:
http://en.wikipedia.org/wiki/World%27s_largest_universities.