Socio-cultural Systems

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During the last 50 years, our worldview has gone though a profound transformation in two critical dimensions. There has been a shift in our way of knowing from *analytical thinking*, the science of dealing with *independent* sets of variables, to *systems thinking*, the art, and science of handling *interdependent* set of variables. There has also been a fundamental shift in our understanding of the nature of social systems from a mindless *mechanical* system to a purposeful *socio-cultural* system. Unfortunately, despite all of the rhetoric to the contrary, our newfound insights have had little influence on our choices. A dominant analytical culture, with a scientific tag, has kept reproducing the same set of non-solutions all over again. Effective use of these discriminating conceptions requires both a clear understanding of the operating principles of socio-cultural systems and unambiguous recognition of the emerging challenge of handling interdependent variables. This paper will try only to shed some light on the latter of the two dimensions, *the nature and the behavior of socio-cultural systems.*

To think about anything requires an image or a concept of it. To think about something as complex as an organization, we have used models of something similar and more familiar. The following three models represent the successive shift in our understanding of the nature of the social system, from a mindless mechanical tool, to a uni-minded biological being and, finally, to a multi-minded socio-cultural system.

The mechanistic view of the world that evolved after the Renaissance maintains that the universe is a machine that works with a regularity dictated by its internal structure and the causal laws of nature (Ackoff, 1999). This worldview provided the basis not only for the Industrial Revolution but also for the development of the machine mode of organization. In the early stages of industrialization, machines replaced agricultural workers by the thousands. The reservoir of unemployable unskilled agricultural workers threatened the fabric of Western societies. Then came a miracle, an ingenious notion of organizations. It was argued that in the same way a complicated tractor is built by assembling parts, each performing only a simple task of horizontal, vertical, and circular motions, an organization could be created in such a manner that each person performs only a simple task. The mechanistic mode of organization was born as a logical extension of this conception and became instrumental in converting the army of unskilled agricultural laborers to semi-skilled industrial workers. The impact of this simple notion of organizations was so great that in one generation it created a capacity for the production of goods and services that surpassed the cumulative capacity of mankind up to then. The essence of the machine mode of organization is simple and elegant: an organization is a

mindless system with no purpose of its own. It is a tool with a function defined by the user. The important attribute of this tool is its reliability, and its performance criterion is simply efficiency. The effectiveness of this mode of organization in producing goods and services created not just a quantitative change but also a qualitative change in the nature of the problem itself. Success changed the competitive game from an ability to produce to an ability to sell. The biological mode of thinking emerged to meet the challenge of managing growth and diversity.

Biological View: The underlying assumptions and principles of the biological mode of organizations are also simple and elegant: an organization is considered to be a uni-minded living system, just like a human being, with a purpose of its own. This purpose, in view of the inherent vulnerability and unstable structure of open systems (as defined below), is survival. To survive, according to conventional wisdom, biological beings have to grow by exploiting their environment. The growth then becomes the single most important performance criterion, and the sole measure of success. Although uni-minded systems have a choice, their parts do not. Parts operate on cybernetics principles as a homeostatic system, reacting to information in the same way as a thermostat (Beer, 1967). As a matter of fact, the beauty of a uni-minded system is that its parts do not have a choice and react only in a predefined manner to the events in its environment. For example, my heart cannot decide on its own that it doesn't want to work for me. My stomach will not get suspicious, thinking, "The liver is out to get me." No consciousness, no choice, no conflict. It is assumed that a malfunctioning of any normal uni-minded system is due to a lack of information or to noise in the communication channel. Therefore, the perceived remedy to most problems in this system has been more information and better communication. However, if parts of a uni-minded system develop consciousness and display choice, the system will be in real trouble. Imagine for a moment that the thermostat in your room suddenly develops a mind of its own—when it receives information about the temperature in the room it decides it doesn't like it and wants to sleep on it.

Socio-cultural View

Socio-cultural view, the focus of this paper, considers a social system to be a voluntary association of purposeful members who have a choice. They get together to serve their own purpose by collectively serving a need in their environment. This is a whole new ball game. Mechanical or biological models cannot explain behavior of a system whose parts display an ability to choose. Therefore, a social system has to be understood on its own terms. Understanding the following five principles is the key to appreciating the distinctive characteristic of a socio-cultural system. However, to get a handle on socio-cultural systems, we also need to explore the essence of information-bonded systems and explain the self-organizing behavior of multi-minded purposeful systems. In addition, in this paper, I will touch upon social learning and development and share my take on ideological terrorism as a major obstruction to the development of peaceful international order.

Systems principles

The five principles of Openness, Purposefulness, Multidimensionality, Emergent Property, and Counterintuitive behavior, acting together as an interactive whole, define the essential characteristics of a socio-cultural system (Figure 1).
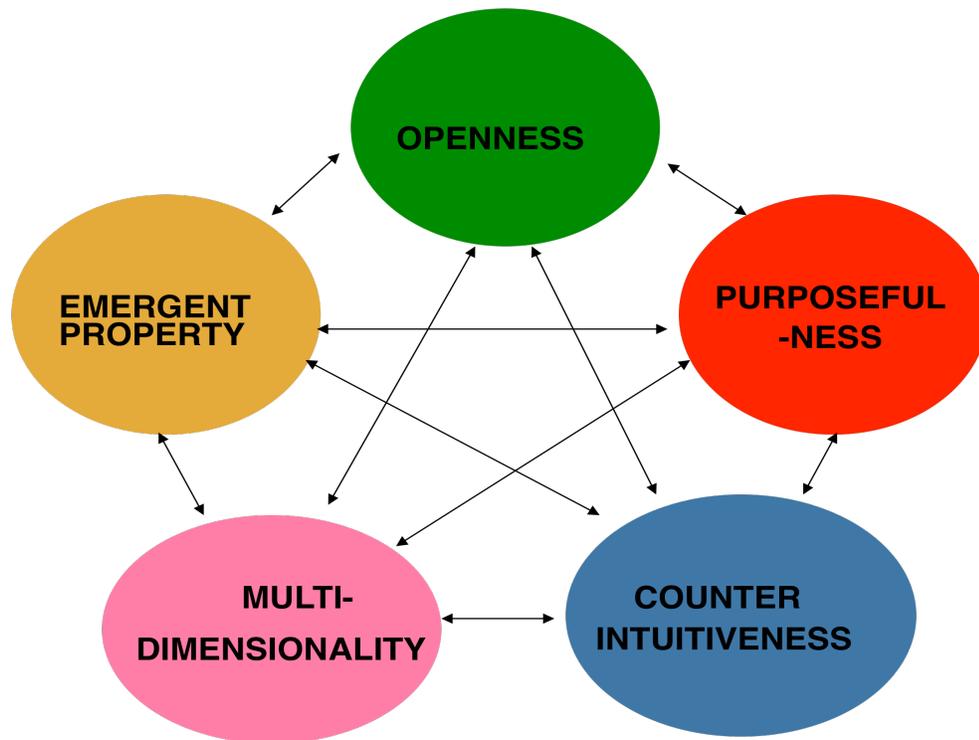
Figure 1 Systems principles

These five principles are an integral part of the systems view of organization from defining problems to designing solutions.

Openness: The recognition that in open systems everything depends on everything else provides a critical insight into the behavior of socio-cultural systems. Grouping this "everything" into two categories--those elements that can be controlled and those that cannot--gives us an operational definition of the system, its environment and the system's boundary. The *system* consists of all of the variables that can be controlled by the participating actor/actors. Meanwhile, the *environment* consists of all those variables that, although affecting the system's behavior, cannot be controlled by it. The system *boundary* thus becomes an arbitrary, subjective construct defined by the interest and the level of the ability and/or authority of the participating actors. For example, the boundary between individuality and collectivity--the question of how much of me is me and how much of me is those whom I love--is a simple manifestation of this dilemmas.

This means that the behavior of open systems can be understood only in the context of their environment. Fortunately, we were able to observe that behavior of the variables in the environment, although uncontrollable, is more or less predictable. The less controllable a variable the more predictable it becomes. This realization led to the formulation of the first rule for getting a handle on open social systems: the imperatives of *predict* and *prepare*. Predicting the environment and preparing the system for it became the foundation of the neo-classical school of management. The emergence of econometric models created a game that was learned and played artfully by almost all entities. But success changed the game. In recent years we have observed, with much apprehension, that most of the predictions made by our prize-winning models were wrong. Subsequently, we discovered that we had missed a whole new category of variables: those variables that we do not control but instead *influence*. To control means that an action is both necessary and sufficient to produce the intended outcome. To influence means that the action is not sufficient; it is only a coproducer. As our knowledge about the environment increased, so did our ability to convert uncontrollable variables to those that could be influenced. As we increased our ability to influence a variable, we decreased our ability to predict it. (If a rain dance had any influence on the weather, we would not be able to predict the weather, because we would not know what kind of dance each group of people are performing). The new categories of variables, those that can be influenced, form a new region called the *transactional environment.* It includes all of the critical stakeholders of a system: customers, suppliers, owners and, ironically, the members themselves. Slowly, we are realizing that we do not actually control much of anything, but do have the ability to influence many things. Managing a social system is becoming more and more about managing upward its transactional environment. This means the ability to influence those we do not control, which requires learning why people do what they do.

Purposefulness is about the why question. Why people do what they do is a matter of choice. Choice has three interdependent dimensions: rational, emotional and cultural.

Rational choice is the domain of self-interest--the interest of the decision-maker, not the observer. A rational choice is not necessarily a wise choice. It reflects only the perceived interest or the "rationale" of the decision-maker at the time.

The *emotional* choice is the domain of beauty and excitement, in contrast to rational choice, which relies on instrumental values. The emotional dimension deals with stylistic values. It is the enjoyment and satisfaction derived from the emotional state in and of itself. While rational choice is risk-aversive, emotional choice is not. Risk is an important attribute of excitement and challenge.

But *culture* defines the ethical norms of the collectivity, and acts as the default decision system. For example, if we do not decide explicitly what kind of parent we want to be, our culture makes this decision for us. When we repeatedly use default values, we tend to forget that we have a choice. Instead, we treat such values as "realities out there," undermining the fact that those "realities" will remain "out there" as long as no one is willing to challenge them. The problem is that the implicitness of the underlying assumptions prevents actors from questioning their validity; therefore, the defaults usually remain unchallenged and become obsolete.

Multidimensionality is probably one of the most potent principles of systems thinking. It is the ability to see complementary relations in opposing tendencies. This mutual interdependence of opposing tendencies is characterized by an "***and*** " instead of an "***or***" relationship. Unfortunately, for the majority of cultures, a dualistic fallacy has dominated the treatment of opposing tendencies. Everything seems to come in a pair of opposites: collectivity/individuality, production/distribution, security/freedom, modernity/tradition, order/complexity, art/science. These pairs are cast as a "zero-sum-game" such that a win for one is invariably associated with a loss for the other. It seems as though we live in an age of paradoxes. Even time-honored values such as freedom and justice are not spared. Boulding (1953) acknowledges this dilemma with the observation that some are afraid of *freedom*, seeing always behind it the specter of anarchy, whereas others are afraid of *justice*, seeing always behind it the specter of tyranny. Furthermore, consider the relation between security and freedom. One cannot be free if one is not secure; one will not be secure if one is not free. Maybe freedom, justice, and security are three aspects of the same thing and were not meant to be separated in the first place. Certainly, treating them in isolation has been problematic.

Emergent Property is the property of the whole, not that of the parts. It is the product of interactions of the parts, not their independent actions. Significant social phenomena such as *love, life, happiness, success* and many others are emergent properties. I can love but none of my parts can love. If you take me apart you will lose the phenomenon of love. Emergent property cannot be deduced from the properties of the parts. It cannot be sensed by any one of the five senses and thus cannot be measured directly. The mere notion that emergent property is the product of interaction of the parts signifies a dynamic phenomenon produced on-line in real-time. Therefore, life, love, happiness, and success are not one-time propositions; they have to be reproduced continuously. If the processes that generate them come to an end, the phenomena will cease to exist as well. They cannot even be saved or stored for future use. They can be there one moment and gone the next.

Counterintuitive Behavior: Social dynamics are fraught with counterintuitive behavior. They stand on a level of complexity beyond the reach of the analytical approach. This means that actions intended to produce a desired outcome may, in fact, generate opposite results. It has been said that the path to hell is paved with good intentions. Things can get worse before getting better, or vice versa. One can win or lose for the wrong reason.

To appreciate the nature of this behavior one needs to understand the practical implications of the following assertions:

• An event may have multiple effects, each with a different time frame.
• Cause and effect may be separated in time and space.
• Cause and effect may replace each another, displaying circular relations.
• An effect may have an independent life of its own; removing the cause will not necessarily remove the effect.

Information-Bonded System

According to Lazlo (1972) many things about the behavior of a social system refer to the interaction rather than the individuality of its members. Each social system manifests certain characteristics that it may retain even if all its individual members are replaced.

The elements that characterize a social system are not only its members, but also the relationship of its members to one another and to the whole. This is, of course, implicit in the definition of a system. Some kind of linkage between the elements is presupposed if the aggregate is to be considered a system. The point of emphasis, then, is not the existence of a relationship, but the assumptions regarding the nature of the relationship. Relationships in turn depend on the nature of the bonds that link and hold the components of the system together. In this context, there are fundamental differences between the nature of the bond in mechanical systems and those in socio-cultural systems.

While the elements of mechanical systems are *energy-bonded*, those of socio-cultural systems are *information-bonded*. In energy-bonded systems, laws of classical physics govern the relationship existing between the elements. Integration of the parts is a one-time proposition. Nail two boards together, and they stay that way until the wood rots the nails rust, or a pry bar separates them. In energy-bonded systems, passive and predictable functioning of parts is a must, until a part breaks down. But the behavior of active parts of an information-bonded system is a different proposition: An automobile yields to its driver regardless of his expertise and dexterity. If a driver decides to run a car into a solid wall, the car will hit the wall without objection. Riding a horse, however, presents a different perspective. It matters to the horse who the rider is, and a proper ride can be achieved only after a series of information exchanges between the horse and the rider. Horse and rider form an information-bonded system in which guidance and control are achieved by agreement based on a common perception. A socio-cultural system is viewed as a set of elements linked almost entirely by interconnection of information. It is an organization of meanings emerging from a network of interactions among individuals. Integration of an information-bonded system into a cohesive whole is a lifetime struggle. To appreciate the unique challenges of integrating the members of a social system, think about the challenges of maintaining marriage, families, or any other close-knit group of human beings—each with a mind of his or her own. To clarify the meaning of information-bonded systems, we need to examine the concept of **culture** in more detail.

Culture

Image building and abstraction are among the most significant characteristics of human beings, allowing them not only to form and interpret images of real things, but also to use these images to create images of things that may not exist. These images are then synthesized into a unified, meaningful mental model and eventually into a worldview (Boulding, 1956). The dialectical interaction between objective and subjective realities lies at the core of a process called **design thinking** responsible for the dynamic development of human societies. This is so true that Nigel Cross (2007) in his beautiful book makes the following indisputable observation: "Everything we have around us has been designed" (p. 34).

Co-produced by the environment and man's unique process of creativity, the image (itself a beautiful design) establishes a link between man and his environment. It consists of a system of implicit assumptions on the nature of spatio-temporal-causal realities, along with concepts of good and bad, right and wrong, beautiful and ugly, and one's perceived role in the environment. Of course, once an image is formed, it acts as a filter that rejects all contrary messages. A considerable part of this image or mental model of the universe is shared with others who live in the same social setting. The rest remains private and personal (Figure 2). It is the shared image that constitutes the principal bond among members of a human community and provides the necessary conditions for any meaningful interactions. The extent to which the image of an individual coincides with the "shared image" of a community determines the degree of his membership in that community. For example, the assumption that nurses report to nurses and doctors report to doctors is an unquestionable part of the shared image among members of a health care system.

It is the "*shared image*" that we refer to as the *culture* of a people. This shared image incorporates their experiences, beliefs, attitudes, and ideals. Culture is the ultimate product of their *history* and the manifestation of their *identity*—man creates his culture and his culture creates him.
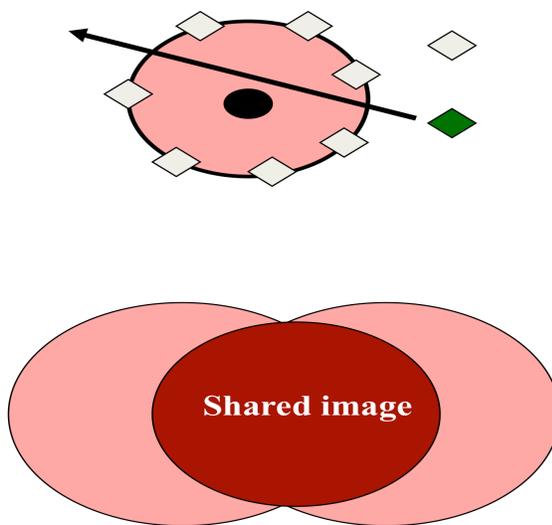

Figure 2 Shared image and Culture

Although culture pre-exists for individuals, it can be transformed and reproduced by their purposeful actions. It is here that the key obstacles to and opportunities for development are found, including the collective ability and desire of a people to create the future they want. Human culture with all its complexity, ambiguity, and manifold potentialities stands at the center of the process of change. This is so true that the success of individual actions invariably depends on the degree to which they penetrate and modify the "shared image."

Self-Organization

Self-organization, movement towards a predefined order, is one of critical conceptions that describe the essence of the behavior of socio-cultural systems. This is a conception shared by all four contemporary theories: **quantum theory**, **chaos theory**, **living systems theory,** and **systems theory.**

The formidable second law of thermodynamics states that the universe as a ***closed system*** has a tendency toward elimination of all distinctions. Thus, the ultimate state is sameness and randomness, a chaotic simplicity. Entropy (S), the measure of randomness and sameness, will therefore always increase.

But one of the major findings of quantum theory is the recognition that the universe is an ***open system.*** Open systems are neg-entropic (-S) and exhibit a tendency toward order. This means that according to quantum theory, the universe is a self-organizing system, continuously expanding and moving toward increasing order and complexity (Wheatley, 1994).

Despite its name, chaos theory (Gleik, 1987) considers the tendency toward order a natural phenomenon produced by the action of four types of attractors. There is an order in chaos, and the objective of chaos theory is to discover the hidden order or the attractor responsible for creation of the chaotic order.

Living systems theorist Stuart Kauffman**,** in his book *At Home in the Universe* (1995), sees self-organization as the co-producer of the stunning biological complexity around us. "Molecules of all varieties join in a metabolic dance to make cells. Cells interact with cells to form organisms; organisms interact with organisms to form ecosystems, societies. Where did this grand architecture come from?" (P.VII) Kaufman further maintains, "For more than a century, the only theory that science has offered to explain how this order arose is natural selection. But in crafting the living world, selection has always acted on systems that exhibit spontaneous order. Formation of this underlying order further honed by selection needs to be explained as well." (P.VIII). He then concludes that a natural tendency to self-organize must be present in the formation of the initial order. For Capra the organizing activity of living systems, at all levels of life, is a mental activity. "The process of living is a process of cognition. To live is to know." (2002 P.34)

The central insight of Santiago Theory (Maturana & Varela, 1980) is also the identification of cognition, the process of knowing, with the process of life. According to Santiago Theory, consciousness is a special kind of cognitive process that emerges when cognition reaches a certain level of complexity. Reflective consciousness involves a level of cognitive abstraction that includes the ability to form ***mental images.*** It is appreciation of this incredible ability to create a mental image that brings new understanding of life to the social domain. It provides a crucial clue to understanding the nature of social bonds, the process of socialization, and human development.

I have argued extensively in a previous work (1972) that to be self-organizing and to move toward *a* predefined order*,* a social system must possess a means of knowing, an internal image of what it wants to be. I have also suggested that in the same way that DNA is the source of this image for biological systems, ***culture*** (i.e., a shared image) is the source of

blueprints for the future of socio-cultural systems. The image of this future provides default values for all decisions and stands at the center of the process of change. That is why despite all kinds of obstructions, socio-cultural systems seem to pursue a predefined order with tenacity. The persistence of default values explains why it is so difficult to induce change into socio-cultural systems. Unless their stored image is altered, socio-cultural systems go on to replicate themselves almost indefinitely.

The shared image, therefore, stands at the center of the process of change. The triumphant resurgence of old patterns of behavior despite the concerted efforts of change agents is an uninterrupted source of frustration. What seems to make this stubborn insurgency so overpowering is the fact that a set of organizing principles (cultural codes) makes the system behave the way it does, are implicit and more often than not are considered to be sacred.

The subset of implicit cultural codes responsible for regenerating the existing order is what we metaphorically refer to as the "second-order-machine." The second-order-machine is equivalent to the notion of the attractor in chaos theory. To produce a change in the behavioral pattern of a social system, its underlying assumptions need to be challenged. A new set of alternatives must be generated and the attractor in action must be modified. How, then, does change enter a social system?

Social Learning

Although social systems learn through the members who adjust their worldviews by mapping new realities and observing the actual or potential results of their actions, social learning, *is not* the sum of each member's independent learning. Rather, it is their collective, shared learning. Socio-cultural systems manifest greater inertia and resistance to change than do their individual members. The inertia of a culture is greater because a shared image is a stronger filter than private images. This tunes the receptors for particular messages. Those consistent with the image are absorbed and reinforced, while contradictory and antagonistic ones are ignored. This phenomenon, although an impediment to change, acts as a defense mechanism and has a structure-maintaining function. However, failure of a social system to learn leads to major difficulties. For instance, as systems become more sophisticated and problems become more profound, the increasing disconnection between science and the public image becomes the dilemma of the democratic process and remains its main challenge. The disconnection happens in a dynamic process with several stages of dissociation. At the outset, since truth is commonly identified with simplicity and comprehensibility, what one does not understand is simply rejected as false. Further, a high level of specialization in science moves it further away from the common image, creating a small, isolated subculture. Ultimately, creation of a scientific subculture that fails to communicate its insights reduces the influence of science on the behavior of the public at large at just the time when it may be needed most.

Fear of rejection and a strong tendency toward conformity among members of a social system are the other major obstructions to social learning. Despite a desire for

individuality and uniqueness, as vulnerable social beings we display a strong tendency to be members of a collectivity. Most of us have a burning desire to identify with others, to be accepted by others, and to conform to the norms of the collectivity. This phenomenon underscores the importance of peer grouping and the impact of peer pressure, especially in the context of public education. Unfortunately, the fate of many underprivileged youth in our existing system of education is predetermined by the zip code where they were born or raised. Carrying a book in Center City, Philadelphia, was once considered playing the white man's game and punishable by exclusion from the community.

Effective social learning, therefore, is about cultural transformation. More specifically, it is about changing the default values of the organizing principles. But challenging the conventional wisdom demands questioning sacred assumptions. This is a learning process of the second order, which must be distinguished from first-order learning where the underlying assumptions governing the selection of alternatives remain unchallenged. Second-order learning, on the other hand, involves challenging the assumptions (Ackoff 1999). It represents a qualitative change that identifies a new set of alternatives and objectives. Second-order learning redefines the rules for first-order learning and provides for orderly transformation and development of socio-cultural systems.

In this context, ideologies in any form or type are major obstructions to viability of a socio-cultural system. The significant and common characteristic of all ideologies is a claim for ultimate truth with a predefined set of ends and means. Underlying assumptions are not to be questioned by true believers. This is incompatible with second-order learning that requires questioning sacred assumptions and challenging implicit sets of default values.

Unfortunately, it is here that major obstructions to development of socio-cultural systems are found. Members of many traditional societies lack the freedom to question any one of their sacred cultural codes. Instead, most are subject to enormous intimidation by traditional forces. Questioning a sacred practice is often treated as an insult and is punishable by death in such systems. But the ability to question sacred assumptions-- without fear of repercussion--is not only an individual right but also a necessary social good that must be preserved at any price. Sometimes intimidating forces present such monumental obstructions to development that paying any price to remove them might be justified. So true is this that even the tragic intervention of outside power, if it results in dissolving the entrenched intimidating forces, may prove to be a tipping point for potent cultural evolution. The transformation of Turkey (dissolving Ottoman Empire) and Japan (defeat of militarism) provide sobering examples of this argument.

On the other hand, seemingly stable but frustrated social systems may experience a sudden, unexpected change. This phenomenon is produced when a small disturbance is fed back on itself to create a monumental impact. Of course, disturbance to any system will be resisted when it first appears. But if it survives the first attempts at suppression and resonates with pre-existing frustrations within the system, an iterative process of deviation amplification begins. This is how frustrated masses motivated by hatred can produce a phenomenal change in the structure of a less developed social system. Unfortunately, without the formation of an explicitly inclusive shared image of a desired future, chaotic struggles may not produce transformation to a self-evolving, purposeful, socio-cultural system.

The reality of highly developed socio-cultural systems that have outgrown the secure web of paternalistic cultures is fundamentally different from those that are still trapped within the confines of traditional and paternalistic cultures. Unless paternalistic cultural codes are properly challenged and modified, the repeated pattern of authoritarian ruler and alienated people will continue to emerge. (The Islamic Revolution of Iran and the collapse of the Soviet Union are the most recent anecdotal evidence.)

Development

Development is the core concept of a systems' view of the world. In contrast to mechanistic and biological views, which are respectively concerned with efficiency and growth, the socio-cultural view is basically concerned with development. Development of a social system is a collective learning process by which a social system increases its *ability* and *desire* to serve both its members and its environment by the constant pursuit of: knowledge, wealth, beauty, power, and values. Desire and ability therefore are the key active agents of this process.

Desire is produced by an exciting vision of a future enhanced by the interaction of creative and recreative processes. The creative capacity of man, along with his/her desire to share, results in an exciting process of change. This generates dissatisfaction with the present and motivates pursuit of more challenging and desirable ends. Otherwise, life proceeds simply by setting and seeking attainable goals that rarely escape the limits of the familiar.

Unfortunately, fundamentalist interpretations of some religions maintain that human beings are not allowed to engage in any act of creation. Art in almost any form--whether painting, sculpture, music, or drama--is prohibited. Recreation is also considered sinful. This antagonistic attitude toward aesthetics militates against social development in that it does not provide much opportunity to articulate and expand one's horizon beyond the immediate needs of mere existence. This self-limitation provides one explanation for cases of underdevelopment despite the availability of vast resources.

Dissatisfaction with the present, although a precondition for change, is not sufficient to ensure development. What seems to be necessary as well is a faith in one's ability to partly control the march of events. Those who are awed by their environment and place the shaping forces of their future outside of themselves do not think of voluntary or conscious change, no matter how miserable and frustrated they are.

Ability, on the other hand, is about the power-to-do. It is the potential to control, influence, and appreciate the parameters that affect the system's existence. More specifically, it is about the generation and dissemination of knowledge, about the freedom to choose, and competence to create technologies that in turn generate and disseminate wealth, power, and beauty, and enhance quality of life throughout the social system.

The viability of a *developed society* therefore, lies in its *creative ability* to meet the challenges of *emerging desires*. It is a struggle for the creation of new dimensions, appreciation of new realities, and finally enrichment of the shared image. It is a collective

learning process that entails coordinated changes in motivation, knowledge, and understanding throughout the social system. Design thinking, as systems methodology, aims at the core of this conception (Gharajedaghi, 2011). Its ultimate objective is to replace the distorted "shared image" responsible for regenerating a pattern of malfunctioning order with a shared image of a more desirable future. This pretentious and daring optimism, however, is based on the following assumptions:

• The best way to learn and understand a system is to redesign it.
• Penetrating the shared image is more likely a question of excitement than logic.
• People are more likely to accept a change if they had a hand in shaping it.

Ideological Terrorism: Finally, our discussion of socio-cultural systems would not be complete without mentioning a phenomenon that has become a troubling source of contention in our increasingly global community.

Civilization, according to systems thinking, is the emergent outcome of the interaction between **culture** (the software) and **technology** (the hardware) (Figure 3).
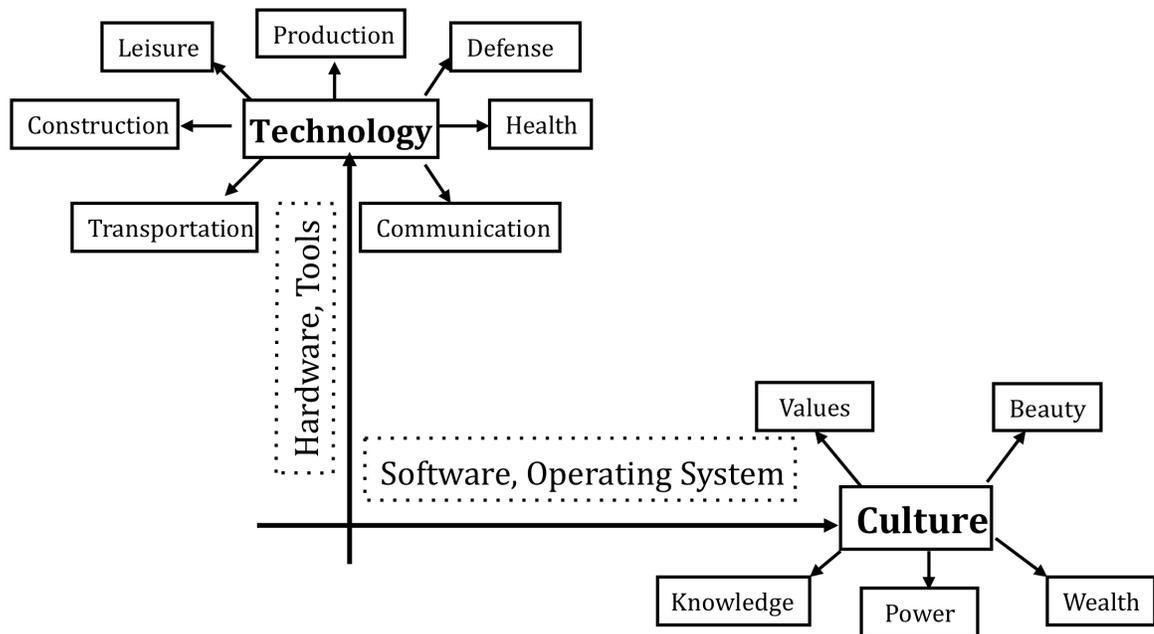

Figure 3 Two Dimensions of Civilization

Technology is universal, proliferating with no resistance, whereas cultures are local, resisting change with tenacity. In an open society, culture evolves with technological advances but in closed societies incompatibility between modern technology and the traditional culture leads to reactionary struggles. Fundamentalists are neither able to resist using the new technology nor able to tolerate its influence on their traditional values. The problem is amplified by the unfortunate fact that some cultures are producers of technology while others are only its consumers. Imported technologies that produce

unwelcome changes in traditional ways of life are often seen as "cultural invasions". This leads to reactionary movements and ideological terrorism that have become critical obstructions to development of peaceful international order.

There is no agreement on the operational definition of terrorism. One person's terrorist is another person's freedom fighter. However, irrespective of where one is coming from, there is no question that terrorism is based on the *false* assumption of the "zero-sum-game." If you lose I will win. As systems get more sophisticated they become increasingly more vulnerable to the actions of the few. Making the other side lose becomes easier than trying to win oneself. This is why terrorism becomes the favorite means of weaker sides when confronting stronger enemies. Nevertheless, this unfortunate strategy always results in a lose/lose outcome.

To get a handle on terrorism I propose to look at it as a means toward an end. The ends in this context seem to fall into one of three categories: ***revenge***, ***cry for help***, or ***ideological battle.***

Terrorism as revenge is a random act that is difficult to detect. *Terrorism as cry for help*, on the other hand, represents the struggle of desperate people trapped in an unfortunate, unjust politico-economic mess. This type of terrorism is a reflection of sustained frustration of a people unable to deal with their humiliating powerlessness through normal channels. The most effective way to stop this type of terror is to dissolve the paralyzing impasse.

Terrorism in ideological battle is a different story. Ideological terrorism, in all of its manifestations, left or right, has used intimidation and random terror to impose its value systems or preferred way of life on the population at large. The strategy is based on the assumption that to paralyze the opposition, one should make it feel guilty and insecure**.** This type of terrorism usually needs a powerful enemy to hate. Hate, converted to need, becomes a way of life. It produces goal-seeking robots. These robotic true believers are capable of brutality incomprehensible to normal human beings. Unfortunately, people involved in the first and second types of terrorists become foot soldiers for the people of the third type. This challenge is so profound that nothing short of a true cultural transformation can dissolve it. And the most critical agent in this long, critical process is the freedom and emancipation of women.

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