Exploring Linkages between Sociocybernetics and Social Development Imperatives

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Paper for presentation at the 4th International Conference of Sociocybernetics, 
SOCIOCYBERNETICS – THE FUTURE OF THE SOCIAL SCIENCES, 
Corfu, Greece, June 30-July 5, 2003
Introduction

Nearly four decades after the 1948 proclamation of the Universal Declaration of Human Rights, the United Nations approved the basic principles establishing the Rights to Development for all individuals and nations of the world. This document, adopted by the General Assembly resolution 41/128 of December 4, 1986, provides a challenging roadmap to improve conditions of social development and quality of life in societies today. It also offers, in our opinion, an open invitation to sociology and other disciplines to generate valid and usable knowledge for a viable and sustainable world system.

The concept of development has captured the attention of intellectual leaders and social scientists over the last fifty years. However, assertive policies and implementation of the rights to development have remained elusive in most countries. The period of rapid changes and sustained economic growth achieved by western societies after World War II made more evident the increasing inequality between nations and the widening gap between the rich and the poor in the majority of countries. The World Summit for Social Development, held in Copenhagen in 1995, a decade after the adoption of the Rights to Development, clearly stated that inequality, poverty, discrimination, and other factors limiting the quality of life in developing nations were crucial problems for world peace.

Poverty and inequality persist as global social problems. The number of people still living in extreme poverty, with an income of less than a dollar per day, reaches 1.2 billion in the developing world. One of the negative consequences of globalization for less-developed nations is an increasing deficit that implies that more money flows out of poor countries to rich nations than the other way around. Because of this, inequality is increasing worldwide. Today, the wealthiest one percent of the world population enjoys as much income as the total income earned by 87 percent of the people at the bottom of the social and economic scale. Thus, less than 50 million individuals mainly from industrial nations enjoy as much wealth as the 2.7 billion poor people in the rest of the world (Gutman, 2003).

The economic progress of a few countries has not helped to provide primary health services to all members of both industrial and less-developed societies. In poor nations, health problems are compounded by the lack of basic facilities and public health programs. According to United Nations reports, the number of people who have AIDS in Africa has reached over 25 million. Hunger and malnutrition are also appalling features of modern society despite outstanding achievements in science and technology applied to agriculture and food production. As recently reported by news services, “tens of thousands have died from hunger in the Horn of Africa in recent months – and more than 20 million in Southern Africa live on the brink of starvation” (Socialist Worker, June 13, 2003, p.6).
Singh (2000), in his analysis of global economic trends and social development, acknowledged that technology per-se or even a high economic growth in itself is not sufficient to achieve the goals of social development. Today, social development requires emphasis on the quality of growth that includes, among other things, a more balanced distribution of income, availability of jobs, equal opportunity to attain resources, social inclusiveness, and political freedom. He concludes that “instead of the present organization of the world economy, a global Keynesian regime of managed world trade and controlled global capital movements is more likely to benefit both developed and developing countries” (p.v).

Since we support the notion that equitable social development is a present global imperative, this paper examines the following items:

1. Basic elements and implications of the U.N. Declaration of the Rights to Development. Special attention is given to the concept defining development as the process of social intervention for which a systems approach is essential if we are to attain human well-being in the world context. The sociological debate of the past between “theory” and “practice,” between “pure” and “applied” research has been largely responsible in reducing the amount and quality of “usable knowledge” badly needed in social development strategies.

2. Key concepts studied by contemporary authors in sociocybernetics that seem most relevant for observing and guiding the processes of systems’ change and social development. A more integrated vision of complex social systems provided by this field in recent years has emerged as promising factor to connect sociology with the development imperatives for the 21st century.

Right to Development: An Inalienable Human Right

Following the conclusion of World War II, on December 10, 1948 the General Assembly of the United Nations adopted and proclaimed the Universal Declaration of Human Rights (UDHR). At that time, this was a monumental effort to guarantee the basic rights of all people and include a broad spectrum of social, economic, political, cultural, and civic rights.

This declaration represents an important step in recognizing and confirming general values for social behavior after the tragic experiences of the 1940’s when many basic standards such as the rights to life, liberty, personal security, freedoms of expression, association, movement, and religious beliefs were placed at risk or flagrantly violated. The Universal Declaration of Human Rights, therefore, even before the adoption of the International Bill of Human Rights by the UN General Assembly in 1966 and enacted by all participating governments in 1976, provided the framework and general guidelines for social behavior and the organization of civil society at the national and international levels. It is within this larger framework comprising the entire global social system that the Declaration on the Right to Development, adopted on December 4, 1986, enhances the value and worth of all human beings. It is also from this perspective that the
Right to Development is recognized as an inalienable human right considering that the person is the central subject of the development process. From a world systems perspective and cognizant that wars and conflicts are serious barriers to maintain human and development rights, the United Nations sustains that international peace and security are essential elements for the realization of those rights.

Among the most prominent provisions recognized by the Declaration on the Right to Development are the following:

- The promotion and encouragement of international cooperation in solving social, economic, and humanitarian problems;
- The prevention of discrimination and full observance of human rights and fundamental freedoms for all members of the world community; and
- The responsibility of states for creating and maintaining adequate conditions for the rights to development.

According to the Declaration, development implies active and free participation of all members of society as well as a fair distribution of economic benefits and social rewards. Individual and collective participation become, therefore, instruments of what the 1980’s Brand Report on development considered the desirable social and economic progress and the re-shaping of organizational components of the social system. This notion of development places the process of change beyond the economic and financial forces and brings into full view systemic conditions that commonly have a profound impact in all areas of human activity.

The response of the social sciences and, more specifically, the role of sociology in providing adequate tools for the study and guidance of social change and development have been, at best, mixed. Early conceptual approaches with emphasis on evolutionary processes led to later perspectives focusing on modernization as a natural consequence of industrial and economic growth. In both cases, results have been limited in the practical world of development (or lack of it) as much as in generating valid and universal knowledge applicable to all social systems. An additional internal issue of the discipline has been an unproductive debate and false dilemma between the “theoretical” versus the “applied” approaches of sociology. While those in the academic barricades of concepts and theories may have neglected the need for relevant information for formulating policy and directing change, some prominent sociologists of the past and practitioners in the camp of applied social science searched for ‘usable knowledge’ to deal with systems change and development.

**Sociology and ‘Usable Knowledge’**

A little more than a century ago (1895), Max Weber, in his inaugural address at the University of Freiburg, expressed his thoughts about the purpose of sociology and stated that if “our work is to have any meaning, it lies, and can only lie, in providing for
the future, for our descendants” (Weber, 1994). This statement is certainly remarkable in view of its similarity with the current concept of sustainable development, defined by the Brundtland Commission in 1987, as development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Although Weber in his pioneering book *On the Methodology of the Social Science* vigorously emphasized the concept of ‘value-free research’ (or free of the values and biases of the researcher), he strongly promoted the need to recognize the values of the society being studied to strengthen and improve it. Social values, then, as far as they help to determine what is desirable and shape individual behavior and social action, clearly relate to the processes of change and development. In reference to this relationship, Weber states:

> Truly empirical sociological investigation begins only with the question what did and still does motivate the individual members of the community to conduct themselves in such a way as to bring about the creation of this “community” and to ensure its continuation (Weber 1962, p.29).

Weber considers values to be a driving force in societies, as illustrated also by his works *The Protestant Ethic and the Spirit of Capitalism*; and *The Theory of Economic Organization*. Today, the importance of values to understand society remains central to Sociocybernetics (Parra-Luna, 1998). Social values as axiological constructs orient human behavior and help society broaden the concept of development to include social equity, human rights, and social justice as essential ingredients to build stronger relations in a social system.

Efforts to understand parts of society in terms of relationships to the whole system (Weber, 1962) have challenged sociological theories and research since its origin. Different approaches, however, have occasionally diminished and even neglected some of the practical issues of applied research with a focus on the triangle composed by the elements of knowledge, understanding, and solutions of social problems.

Over sixty years ago, Robert S. Lynd (1939) raised the question, “Knowledge for what?” This basic question helped him and his students define the role of sociology and other related disciplines in a rapidly changing society. For this American sociologist, “If social science is to be free to be science, it must have the courage to fight for its freedom from the dragging undertow of a culture preoccupied with short-run statements of long-run problems” (p. 203).

Lynd’s analysis of his time serves almost as a preview of many social problems still present in the United States and other nations. As a consequence, he sees the role of sociology as a tool for exploring and learning about the social system and its relationships as well as an organizing force for individual and collective action. He observed social change as a challenge for action, claiming:
…We are struggling to live today in a contracting world in which novel or upsetting things are happening all about us with startling speed and coerciveness… capitalism is in decline and democracy is on the defensive. The question our culture appears to confront is not ‘shall we change?’ but ‘how can we contrive change extensive enough and rapid enough, however radical its innovations, to enable basic human values to survive?’ (p. 207).

The list of social problems of a lagging system studied by Lynd six decades ago appears quite relevant in our world today, specially for sociologists. For him, the problems characterized then by a lack of an integrated world vision, the absence of political will, and the power of interest groups to avoid adequate policies are the best descriptors of basic imperatives for change and development. Four areas of central concern that connect with today’s social development imperatives emerge from Lynd’s assertions:

(1) **The need for developmental plans and strategies for action.**

According to Lynd, a major purpose of sociology is scientific discovery, but new knowledge must be connected to eliminate the gap between social problems and their solutions. Social science, he says, should “discover where and how large-scale planning and control need to be extended throughout the culture so as to facilitate the human ends of living” (p. 209).

(2) **The case for change and improvement.**

A second area of major systemic problems identified by Lynd includes poverty, inequality, and discrimination. In his opinion, these problems undermine the values of democracy as a viable form of organization and reveal conditions of political apathy and generalized ignorance on civic affairs. As a result of his sociological analysis, Lynd made a strong case for change and improvement in the social and political arenas. “If democracy is to continue as the active guiding principle of our culture,” he argued, “it will be necessary to extend it markedly as an efficient reality in government, industry, and other areas of living”(p. 215). Failure to achieve this objective would likely encourage the desire to abandon a purely formal democracy in favor of some other operating principle.

(3) **Global problems calling for global solutions.**

One persistent question for sociology throughout history refers to what kind of system would be more desirable, fair, and better equipped to sustain growth and quality of life for all. Judging the severity of social, economic, and political problems affecting today’s world, it can be argued that present models and formulas have failed to keep peace and avoid wars, to feed the people and eliminate starvation, to provide education and to diminish ignorance.

Again, Lynd’s observations conducted in the years following the Great Depression of the 1930s and anticipating the problems surrounding World War II focused
attention on the inadequacy of capitalism as a socially efficient economic model. His critical analysis includes an invitation to the social sciences to continue analyzing the economic and social organization from a systems’ perspective. He remarks,

…capitalism does not now operate, and probably cannot be made to operate, to assure the amount of general welfare to which the present stage of our technological skills and intelligence entitle us; and other ways of managing our economy need therefore to be explored (p. 220).

In light of the extent to which economic globalization based on neo-liberal economic ideas and capitalistic practices appear to have failed, so far, to bring basic conditions of equity and well-being to all nations and societies, Lynd’s comments of over six decades ago seem to gain in prominence and actuality. Today’s global problems, therefore, clearly call for global solutions to make society a sustainable system.

(4) Sociology’s responsibility to focus on change.

Lynd’s perspective of the role of sociology appears to point towards a discipline that is, or could be, both an ‘active’ inquiry of social reality and a ‘pro-active’ analytical tool to study and steer social change. He recognizes change as a pivotal process of society.

Sociological knowledge, therefore, cannot be conceived as separate from its application and impact on a changing social system. The fact that some traditional approaches of the discipline have managed to stay away from the practical needs of change and development has not silenced the voices of those arguing for a better balance between theoretical and applied knowledge for problem-solving endeavors.

Given the interwoven nature of global social problems, there are three important guiding principles to consider:

First, a systems perspective that requires an integrated vision and analysis of relationships in complex social systems. Sociocybernetics appears well positioned to satisfy the demands of usable knowledge in this area.

Second, a problem-solving approach that involves creating conditions for change with clear definitions of outcomes and expectations of improvement.

Third, social development as an organizing principle. This includes the notion of applied knowledge to satisfy social needs and contribute to the solution of social problems. Consequently, social development is defined here as “a process of planned social change designed to promote the well-being of the population as a whole” (Midgley, 1999).
Sociocybernetics and Social Development

Sociocybernetics emerges as one of the most promising theoretical and practical endeavors to confront the analysis of complex social systems as well as a methodological tool for evaluating social problems.

The intellectual and scientific capacity found in the cybernetic tradition of Bertalanffy (1975), Ashby (1956), Wiener (1948), Luhmann (1990), Beer (1994), and others permits us to approach social and organizational problems from both theoretical and practical perspectives. Also, the contributions made by Buckley (1967), Bailey (1997), Geyer (1999), and a number of scholars studying modern systems theory seek an adequate balance between sociological theory and the concrete consequences of individual and organizational decisions.

Social processes and systems’ problems are far from being static. On the contrary, they can be changed and improved if knowledge is expanded, behavior is modified, and proper action is taken. Knowledge about society and a better understanding concerning the organization of complex social systems could certainly be invaluable for the task and goals of social development. In a sense, social problem solving may well be considered an integral part of systems analysis, the central objective of sociocybernetics.

At the beginning of a new century, and a new millennium, it is appropriate for sociocybernetics to review both its place in sociology and the problems upon which it is focused. Sociocybernetics deals with complex (sometimes referred to as second order) systems, especially including the role of information and information transfer, as applied to the analysis of social systems. The use of the sociocybernetic paradigm to explain complex social phenomena is especially important in light of problems of development, globalization, and a number of other processes affecting society today. Sociocybernetics may offer sufficient depth and breadth to examine issues of change, organizational diversity, and policy implementation within the context of a dynamic and complex social system. The systems approach may well provide us with the tools to explain the present and explore future improvements.

The analytical elements of earlier systems theory emphasized the notions of social control and systems’ equilibrium. As Buckley (1967) suggests, the implicit notion is that mechanisms of defense, adjustment, and deviance control are “aimed at the adaptation of individuals to the dominant structure” (p. 30). This early conception of systems theory rests on the ideas of stability and equilibrium, which may lead to rather simplistic explanations of social systems as resistant to change. Contrary to this static notion, Geyer and van der Zouwen (1991) state that “sociocybernetics inevitably tends to concentrate on problems associated with change and growth, rather than with stability.” Geyer (1995) returns to this issue, arguing that “Since complex modern societies –as compared to simpler ones- are highly dynamic and interactive, and thus change at accelerated rates, they are generally in a far-from-equilibrium situation” (p. 24).
Notions of change in terms of transformation and improvement as well as the premise of growth implying development and progress appear in the thoughts and writings of various authors in the field of sociocybernetics. For instance, Bertalanffy (1968), a pioneer of the General Systems Theory, recognizes early the importance of the individual and values as key elements for change in social systems. He implicitly accepts the recursive nature of social systems as recurrent interactions that permit transmission of values and the inherent dangers of the control of communicating those values. For him, such control tends to minimize creativity and change, and, when that happens, the system loses not only opportunities for all its members but also “the specifically human features of responsibility, free decision, and true human values” (pp.125-126).

Buckley (1967) also describes the advantages of modern systems theory in terms of the capacity of the social systems to change, adapt, and modify their structures.

Systems Theory, Buckley says, transcends the equilibrium reference...in recognizing the very different problem of the complex, open, adaptive system which depends not simply on mutual relations of parts, but on very particular kinds of mutual interrelations. In addition, the important problems of primacy of some parts over others and the varying degrees of connectedness of some parts of the system to others are made subject to analysis (p.79).

Sociocybernetic Concepts for Change and Development

Some key concepts pertaining to General Systems Theory that are relevant to the processes of social change and development include, among others, the notion of autopoiesis, self-reference, system differentiation, recursivity, and structural coupling.

Maturana and Varela (1980) introduced the concept of autopoiesis, describing living systems as autonomous, self-referring, and self-constructing units. The concept of autopoiesis refers to the capacity of systems to define and maintain their identity and self-generate their components. Although they first developed their conceptual constructs from a biological perspective, the progression and diffusion of their research has unveiled fundamental questions and propositions of importance to systems theory.

While their later works appear well-connected to issues of concern for sociocybernetics in studying social systems, there have been some questions about the applicability of autopoiesis to all types of social systems. Biggiero (2001), for instance, asks whether firms and commercial organizations are in reality autopoietic systems. He sustains that as autopoiesis is basically defined as “self-production of the invariant organization of a closed network” (p.127), it would follow that systems such as firms and business organizations are not autopoietic units (p.125).
Biggiero considers the characteristics and conditions defining autopoiesis for biological living systems too restrictive if applied to social systems. He concludes that second-order cybernetics can provide valuable help to analyze and understand social systems “if concepts like self-organization, self-reference, and autonomy are interpreted as a question of degree and not as on/off conditions” (pp.134-135).

According to Maturana and Varela, however, autopoiesis and networks of relationships are essential elements in defining a social system with potentials for change and development. They affirm that “the structure of a society as a particular social system is determined both by the structure of its autopoietic components and by the actual relations that hold between them while they integrate it” (p.xxv). Systems, therefore, owe their basic identity to the set of inter-component relationships that define their organization. In addition, it is through a number of recurrent interactions between two or more systems, or the ‘structural coupling’ between systems, that changes take place in each of the systems involved.

Hornung (1999) discusses the concept of structural coupling and its relevance for social systems underlining the notion that human beings as recursive systems engage in interactions and communication, organize communities, and are ‘capable of reflective information processing’ that constitutes elements of consciousness. Structural coupling, then, connotes the attributes of cognition, consciousness, and value orientations that are reflected in change and co-adaptation of connected social systems.

Systems identity as well as systems differentiation are both linked to the self-referential capacity of the system that permits a unit to determine what is unique and different from other systems. Social differentiation, then, may be observed as a condition characterized by higher complexity in a system as a result of change in its components and also changes in related systems. Social and cultural changes involve, therefore, a higher degree of differentiation and complexity in systems and their environments.

The recursive nature of systems allows, and even requires, recognition of the importance of each individual within the social system. Recognition of this fundamental aspect of social systems carries with it the acceptance of the importance of social values usually viewed connected to purposive change or development. According to Maturana and Varela (1980), “In man as a social being, all actions, however individual as expressions of preferences or rejections, constitutively affect the lives of other human beings and, hence, have ethical significance” (p.xxvi). This incorporation of values into the study of social systems allows them to affirm: “All kinds of societies are biologically legitimate. Yet not all are equally desirable as systems in which an observer human being may wish to live” (p.xxix). This is indeed an interesting remark about social values applicable to conditions of development or under-development in the world today.

Values, or the fundamental shared beliefs of a society, are the single most important factor to drive social change (Beer, 1975; Meadows, 1993). Parra-Luna (2000) asserts that “the needs/value binomial becomes the essential raw material for
sociological analysis, needs as a factor of motivation as well as values as a factor of satisfaction” (p.1).

In his work on the development of an axiological systems theory, Parra-Luna (2001) sustains that values are essential in order to meet individual and collective needs. Consequently, he affirms, “the logical aim of any society, then, can be no other than to best satisfy the individual needs of each and every one of its members…”(p.7).

Parra-Luna (2000) stresses, however, that values are shaped and voiced by the ruling elite. He suggests that the elite decide “what, when, and how the system should produce,” and that the interests of those with power overshadow the needs of the rest of the population. A particular strength of Parra-Luna’s axiological perspective in dealing with issues of social inequalities and systems’ exclusion is the recognition that every human being counts if a society is to perform effectively. The axiological systems theory is fundamentally humanist and inclusive. It considers all persons, or as Parra-Luna (2001) affirms, “each and every one of the individuals that comprise (a system), insofar as they are units of decision with self-awareness of their rights and obligations in society and the ultimate aim of social activity itself” (p.4).

A similar viewpoint is also expressed by Maturana in the preface of his book Autopoiesis and Cognition (Maturana and Varela, 1980) where he explains:

A human being that through his interactions with other human beings participates in interactions proper to their social system in a manner that does not involve his autopoiesis as a constitutive feature of it, is being used by the social system but is not one of its members. If the human being cannot escape from this situation because his life is at stake, he is under social abuse (p.xxix).

A large segment of the world population cannot be expected to continue living indefinitely under social abuse. If one accepts that the statistics on education, work, and income reflect a non-sustainable situation for those in poverty and living in conditions of marginality, then one must also accept that the situation is not contributing to the realization of society as an adaptive, or viable, system.

The Viable System Model

The notion of viable system developed by Stafford Beer throughout a long and distinguished career illustrates the connection between theory building and practical application of systems research. Beer (1975) provides an articulated application of the analysis of social systems to problems of national development and other units through what he describes as the Viable Systems Model (VSM). He sees sociocybernetics as more than a diagnostic tool with which to point out the flaws in present society. The Viable Systems Model presents a paradigm for social analysis and directed social change:
If dogma, doctrine, and expertise fail to give effective answers, then what criterion of effectiveness shall cybernetics use? My answer to this question is: the criterion of viability. Whatever makes a system survival-worthy is necessary to it (p. 426).

Beer discusses the importance of planned change as a tool for improvement of all members of a social system in *Platform for Change* (1975), *The Brain of the Firm* (1972), and many other sources. An effort to apply the VSM was conducted in Chile during Salvador Allende’s socialist government in the early 1970s (Menanteau, D. 1999).

Other applications of Beer’s Viable System Model to issues concerning change and organizational development are discussed by Espejo and Harnden (1989). Over the last two decades, applications of this model have covered a variety of areas from managerial and organizational issues of industry and businesses to social and political problems of national development. The geographical diversity of these studies is as vast as the world map with projects conducted in England, Europe, Canada, the United States, Latin America, Australia, and New Zealand (Beer, 1989).

According to Beer, viable systems are defined in terms of their autonomy and ability to maintain their identity within a common environment. This means that a viable system is connected to other viable systems, making communications and relationships the vital linkages and primary conditions for viability. The interaction and network established between viable systems is explained by the theorem of recursion that determines that “In a recursive organizational structure, any viable system contains, and is contained in, a viable system” (p.34). The recursive nature of social systems represents one of the key rules of the model for social change and development.

Beer (1994a) also proposes three organizational principles that direct and facilitate the recursive relationships of all subsystems.

The first principle refers to systems’ complexity, called *variety*, and the organizational and managerial problems affecting social cohesion as a result of complexity. In social development programs, the number of diverse elements in a system that measure the condition of *variety* may constitute a major barrier if it is not carefully considered and controlled. The problem is certainly a problem of systemic complexity as the model recognizes the existence of managerial, operational, and environmental *varieties*.

The second principle focuses on the notion of ‘design’ which involves a number of organizational elements embedded in planning, policy formulation, and action implementation. From a social development perspective that recognizes the processes of goal setting and systems’ intervention to carry out a program, this second principle becomes highly relevant.
The third organizational principle declares an explicit concern for the people who as recursive living systems constitute essential components of the viability of the entire system. This point is illustrated by Beer (1994b) as he tells the story of the application of the VSM in Chile that although it was officially called Project Cybersyn, it was popularly known in that country as ‘the People Project.’ This new name alluded to one of the main purposes of the project, which was to examine the systems dynamics of the interaction between the government and the people.

In conclusion, as mentioned by Espejo (1989), who was one of the closest collaborators of Beer in Chile during the short life of Project Cybersyn, the Viable System Model “offers a paradigm for problem-solving. Its understanding offers a mental tool to approach the creation and design of effective context for the participation of people in human activities” (p.98).

The sociocybernetic experiment in Chile demonstrates that even in times of political and economic difficulties such as that country experienced in the early 1970s or, perhaps, under these types of social constraints, is when sociocybernetics may best contribute to build bridges and establish linkages between sociology and social development. To move forward in this direction, it seems that there are three essential factors simultaneously emerging: challenges, tools, and hope.

First, the challenges for change and development are visible and urgent globally.

Second, the conceptual and methodological tools of sociocybernetics appear to be better equipped to generate knowledge about complex systems and possibly ‘steer’ the processes of change and development.

And third, the virtue of hope, which according to the Agustinian tradition has two beautiful daughters: Anger and Courage. -- Anger at the way things are, and Courage to change them.
References


