LOGICAL OPENNESS AND THE ETHICS OF GLOBALITY

Arne Collen
Saybrook Institute, 450 Pacific, 3rd Floor, San Francisco, CA 94133 USA

and

Gianfranco Minati
Fondazione Barbarini e Centoni per la Correlazione, Via Cefalonia, 70,
25125 Brescia, Italy

INTRODUCTION

In this brief presentation we discuss the relationship between openness and ethics. More specifically, our focus here is one form of openness, *logical openness*, previously described [4, 5, 11, 12], and its relevance to globality. We use the term *globality* to mean the emergent state of the Earth as a result of the impact of humanity on its biosphere. In this regard, *globalizing* refers to the processes of human interaction with and engagement in the biosphere, which are currently being described and disseminated as the trends of humanity [1, 7, 8, 9, 15], because of the apparent reproductive and survival success of *homo sapiens*. Undoubtedly, this success is transforming rapidly almost every aspect of the biosphere. Whether the transformations are desirable and beneficial is the ethical question.

Through the educational service provided by media presentations, we are learning the subtle ways in which these transformations impact evermore on our health, family relationships, and places of work. Further, we are aware that our recognition and concern for these developments are reflective of many, many persons, The concerns are voiced increasingly among citizenry, scientific communities, and government officials across all continents. As we struggle to comprehend the emergent global complexities, it becomes evermore apparent to us that a critical aspect of our preoccupation is the ethical dimension.

The human being is the most adaptable and successful species on Earth at this time. With so many humans, the management of humanity — from the single person to the human globality — may represent the most profound problem ever to face the human species, perhaps even more serious than the mid-twentieth century fear of extinction by nuclear war [13]. Certainly, the increasing domination of human

population can be viewed as the pivotal problem undergirding most local to regional trends, as corroborated by numerous sources of well documented evidence in the biological sciences [1, 2, 15]. The chronologically and spatially accumulative global effects have become part of our central concern, thus, the problematique now spans from the local to the global levels. Questions arise whether individual actions have local to global consequences, and if so, what can a person do to act more conscientiously in regard to the aversive impacts of daily actions. These types of questions are ethical. They bring the ethical dimension of human affairs into the center of discourse.

Although the topic of ethics represents a voluminous literature and field of study, for our purposes here, we view *ethics* as a social derivative of morality which deals specifically with human behavior as expressed in interpersonal relationships. We judge and evaluation the acceptability of our actions and those of others within the social contexts of their expression. Our underlying morality — our sense of right and wrong — helps us to self-regulate our actions and provide the dependability of action we can expect from others. Religious texts are import authoritative sources perpetuating our moralities. But especially in civic affairs, when the boundaries of acceptable behavior are broached, we resort to legislation to help us more clearly define the ethicality of action. Thus conceptually, we shall affiliate ethics with realms of public affairs involving interpersonal transactions of all kinds that have a legal association, in contrast to moral transactions which stem from a religious association.

The purpose of our paper is to explore the importance of logical openness in fostering a more constructive and ameliorative ethics of globality. Our thoughts are preliminary, but we trust contributive to the conversation of general concern we experience from many quarters.

ETHICS, GLOBALITY, AND SCIENCE

The ability to foster an ethical view of ones actions locally is key for the development of an ethical view globally. In terms of human activity systems [3], local participation, such as in the home, office, and community organization, is the most immediate, personal, and meaningful arena of education for a more global ethic [6].

A traditional scientific study of a problem urges us to divide, or analyze, the problem into its principal parts. Further, we are asked to describe the problem in its context, that is, to circumscribe the problem in terms of when, where, and under what conditions the problem occurs. Having done so, we have defined the prominant

features (elements and variables) and we study their interactions to comprehend, and hopefully, discover root causes and formulate explanations of the problem. Eventually, we want to know means of application to ameliorate the problem. As scientists work more systemically, their analytical and synthesizing activities help us to develop a more holistic comprehension of the problem.

To the challenge of scientific study [8], we face new kinds of problems of such complexity that many different kinds of scientists must collaborate just to comprehend the nature of the problem. As the problems become more complex, often their amelioration appears farther away into the future. Consequently, it is imperative that more isolated scientific study must be coupled with interdisciplinary collaboration, which we view as a welcomed openness to the integration of diverse knowledge required to tackle the emergent complexity of problems.

OPENNESS

In previous publications [4, 5, 11, 12], we proposed a new kind of openness. Though thermodynamic openness rather than logical is usual when we speak of openness in General Systems Theory [14] and Living Systems Theory [10], in which a flux of matter/energy is only possible; however, in reference to human beings, logical openness is the usual form. This newer kind of openness is derivative of the fundamental concept of openness, and it places the observer in the active rather than the passive mode.

The hierarchy of logical openness extends beyond the classical concept of openness to the conceptual levels of central interest in human affairs. *Factual openness* is the classical thermodynamic level in which matter and energy are able to cross the boundaries, for example the system is able to send and receive signals but is not able to give or process meaning. *Active openness* involves the assumption that the meaning of the signals conveyed across the boundaries is identical and constant between the sender and the receiver, for example the formal language of some operating systems for computers. *Flexible openness* becomes relevant when the system (person or human activity system) generates a model of another such system and the communication between the two persons or groups becomes information between the two models as represented, as for example, when two persons exchange text or converse with the presupposition that they share the same meanings of the text communicated. *Creative openness* involves information and knowledge exchange in the communication process which conveys models and contexts of each, as for

example the negotiation between two competitors and the interrrogatory process. Lastly, *Reflexive openness* is that level which makes use of and commands the previous levels of openness. Engagement in reflexive openness means deciding how to act as an open system.

From our point of view, it is the more developed, higher order levels of logical openness, especially reflexive openness, that enables us to know direct action and the necessity of regulatory and corrective measures of our actions. Thus, we associate a general hierarchy of logical openness in human affairs to human ethics. But it is human action that links logical openness and the ethics of globality.

In human social systems we can immediately appreciate the importance of logical openness to ethicality, given the egocentricity and ethnocentricity of the observer, and the emergence of the human being as the domineering force in every ecological habitat.

The self-reflective capacity of human thought provides the well-spring as well as the hope of liberation and amelioration. To become aware of the social and environmental impact of ones actions takes us into the ethics of globality. The hierarchy of logical openness provides a schema for the study and design of an ethics of globality, and as we shall emphasize hereafter, the importance of education of present and future generations for a worldview based on a global ethic.

DESIGNING OPEN ETHICAL SYSTEMS

To be able to identify the human activity systems in which we are a part — in which we act, react, and impact — is part of developing a systemic view of our world. However, we must extend our vision to the secondary and even tertiary connections. Thus, we can move with such extensions from a local sphere of influence toward the more global view. Logical openness can be described in terms of our extensions beyond the provincial to incorporate our known and imagined impact on others, as well as their impact on ourselves, though they not be immediately visible to us.

The design of the human activity system relies on our knowledge of the more macro-level and micro-level systems relevant to its adaptive functioning within the larger societal context. Thus, for example, a family to function effectively must not only be vigilant to the current needs of each member, but also must establish ways to deal with numerous outside agents, solicitors, and creditors. To follow this example a little further, in the design of a family, this human activity system extends to a network of relationships with and within their neighborhood community. Given the high extend of human mobility today, some examination is necessary regarding the

family's network of relatioships with various kinds of communities which it chooses to affiliate. All of these interactive relationships require study and consideration in making design modifications of any human activity system which entail greater logical openness in support of a global ethic.

Interestingly, the incorporation of these relational extensions into the design of human activity systems also extends, we believe, our ability to design. Our primary interest is not to extend the explanation of the family as a human activity system via cause-effect relations, but to generate a more considerate description of the relational web, so that the more pragmatic features of the human activity system, as it functions in its larger social context, can come to our attention. The benefit of this activity will presumably be to become more involved in actively modifying the system. In other words, the system begins to engage in redesigning, or more to the point of this paper, globalizing. We assume that this process works best when those comprising the system and interacting with the system do the globalizing. In our illustration, this means that the members of the family along with its agents, solicitors, and creditors do the globalizing. Not necessarily an easy task when one begins to uncover and appreciate its complexities.

The ethical considerations of design only complicate globalizing further. For instance, we have many worthy priorities where research funds earmarked to develop treatments against cancer may compete with research funds to improve environmental clean up of hazardous wastes thought to promote cancer. Further, money may support the development of products which later we discover polute the environment, while other money may support means to remove the pollutants and find treatments to the pollution-based chronic diseases. The automobile, cigarette, and microchip industries are exemplary areas having led us to such complex problems. The average citizen and consumer asks: Why should I pay for research which leads to the sickness from pollution and at the same time pay for research leading to the cures of pollution? Why not spend the money to stop the polluting?! This line of questioning is being re-expressed more commonly to ask: What can we do to redesign the system so that to stop the pollution is profitable?

In short, the challenge is to redesign human activity systems which are more logically open to the ethics of globality, but redesign them with profitability in mind. There may be a compatibility, a convergence necessary between ethicality and profitability, in order to solve the problems of humanity, or at the least, to address the trends judged detrimental to the survival of the human species.

THE NEW CENTRALITY OF HUMAN BEING

Whether one decides to view current events within the arena of discourse of the post-industrial, post-information, or post-modernist worlds, logical openness compels that a very high value be placed on knowledge. Knowledge becomes the central resource. And, without entering into the debate concerning artificial intelligence and the progenitors of knowledge, we will simply convey the position that from our point of view the primary producer of knowledge seriously considered important in this world is human.

Cosmological views of the universe have changed over the centuries. We realize that there are several vantage points today, which can be crisply stated by means of the adjectives: theocentric, geocentric, heliocentric, ethnocentric, and egocentric. In general, we think of the traditional religious forms to represent theocentric cosmologies. The Copernican revolution in Western European thought presumably displaced the geocentric view of the universe for a heliocentric one. The Newtonian revolution in Western European thought is widely believed to have spawned the replacement of science for religion, which has brought more emphasis to the study of ethnocentrism in sociology and egocentrism in psychology. The obsessive interest in individualism in the United States debated in the social sciences may be viewed as an egocentricity.

But a systemic view must contend with comprehending some configuration of them all, for all centricities mentioned above are relevant to the global problematique. In contemporary parlance, we can mention that there is a special emphasis emerging today on a gaiacentric view, which will likely become a hybrid of the others emphasizing the ecological concerns for the biosphere and an ecological ethics. In this cosmological view, the human being is paradoxically both displaced from as well as at the center of the universe. This line of argumentation stresses that the reproductive and survival success of the human species brings a responsibility for those dominated and the territories inhabited by humans. Such responsibility is not new in the history of humanity; however, the role of earthly caretaker within a context of a global ethic is new, especially to Western European thought and U.S. American thought in this century.

Furthermore, we suspect, the gaiacentric view may be new to most realms on Earth as evidenced by the global trends. Unfortunately, it appears to us, based on the constant media flow of information fed to us from around the globe, that humanity continues daily doing what it has always been doing, largely unconscious of what the

regional to global trends might portend. Each individual consumes one day after another in routine, which requires little if any reflective thought regarding the consequences of a person's actions within a larger sphere of consideration, that is, a person's contribution to the biosphere. This personal state of affairs is compounded by a social collectivity condoning ignorance, rationalization, denial, displacement, and intellectualization, because it tends to diffuse a person's sense of personal responsibility. Herein is a place for education.

A person's dialog with reality is the engagement in everyday activities. The purpose of education directed toward the ethics of globality is to develop the capacity of reflection, but here we wish to emphasize a reflection on the consequences of action. Reflection has a second order cybernetic relation to this reality dialog. In other words, we can "step back" and think about what we are doing. Did we do it correctly, well, beneficially, and so on? Naturally, we can think about what we are doing while we are doing it. With practice, the better we become skilled at what we are doing, the more time we have to reflect upon what we are doing, without disrupting what we are doing. Wisdom, expertise, and critical thinking are examples of the fruits of this secondary cybernetic loop.

At this point, we want to tie together this section with the previous one. Reflexive logical openness is an inherent and naturally emergent phenomenon of human consciousness. It is the role of education to foster logical openness and develop this emergent process. The new centrality of human being will mean for most persons experiencing new ways of being human, in that thoughts and actions must change to support a more responsible participation in the world. The new centrality of the human being, postured for a gaiacentric view, will rest on the redesign of our education systems in order to meet the challenges posed by the global trends.

THE IMPACT ON EDUCATION

To design an education requires a developed capacity for self-reflection. As we are making value judgments in every social situation and human interaction, the ethical dimension is always present. To make it overt and explicit in the design process challenges our customary forms of thought, but it distinguishes a design process which is ethical from one that is not. Ethics is an indigenous property of all human activity systems. It cannot be designed into it; it is already there. The matter is to deal with it openly as the activities and actions occur, and provide general, or generic if you will, guidelines (codes, mores, rules of behavior) in advance whenever possible. The rules

and codes of conduct influence the activities of those participating. They shape the boundaries, that is, the logical openness of the human activity system.

The design process of the logical open education system is very useful in teaching Systems Theory, because the student can engage in pedagogical activities to recognize where the system is and to identify and assess the extent of logical openness. In this regard, we have described a simple application model of logical openness [4], which shows the coupling of teach and pupil in the learning process. The process engages the primary (reality) and secondary (reflective) learning loops of both persons. The interactive process can foster movement to increasingly higher order levels of openness of the hierarchy of logical openness. This simple model attempts to illustrate the potential, power, and importance of drawing more attention to cultivating the capacity of reflection.

However, we do not restrict the concept of education system to the school, college, and university as it currently operates. Our definition of education system has no necessary institutional boundaries. The education process is ongoing with every human being throughout the life span, as we have alluded to the double loop learning model. Education accentuates *educare* — learning that is trustful, caring, and supportive interpersonally.

Importantly, the values associated with a global ethic must be part of the education system, and therefore substantive with the education process leading to reflective logical openness. These values the adult learners must bring to the education system and introduce to young learners.

In Italy, the Foundation Barbarini e Centoni per la Correlazione is planning a school for the younger generation that places in its curriculum great emphasis on systems thinking. Several pedagogical activities have been proposed for this purpose, such as for example those stated in Table 1.

Significantly, these seven kinds of pedagogical activities can be advanced further toward reflexive logical openness and a global ethic by posing additional questions for the children to address, having to do, for example, with what is helpful and harmful to oneself and others, and what conditions lead to helpful and harmful aspects.

For education to have an impact on the ethics of globality means changing the ways we think about reality and engage in reality. Our thought and action must take into consideration now more than in earlier epochs of human history the consequences of our actions on others and our habitat. We think that providing greater weight to the pedagogy of systems thinking in the design and implementation of our education

systems may be one beneficial direction, as illustrated above, toward supporting the central thesis of this paper.

Table 1.

Activities to facilitate the acquisition of systems thinking proposed for the Scuola in Teoria dei Sistemi.

SCUOLA IN TEORIA DEI SISTEMI

**FONDAZIONE
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PER LA CORRELAZIONE**

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1. Describe a system in terms of its subsets, and ways a system can transform into another system.

2. By use of a color mixing device or computer software, describe the interactions of colors and emergent color states of mixing.

3. By various musical instruments together and in solo via computer software, describe harmony, cacophony, and orchestration as a system.

4. Using the metaphor of water tranforming into ice, seemingly order from chaos, describe openness of a system for people, information, and knowledge.

5. Using pre-printed story board cards, write a story, then another, then another generated by various possible orders of the cards.

6. Design a new game by specifying a set of rules, then play the game.

7. With each person having partial knowledge, collectively describe a system made possible by the cooperative sharing of the knowledge; also applicable to 1-6 above as a group activity.

SUMMARY AND CONCLUSION

In this brief paper, we have linked several key constructs into a configuration that provides the basis for a comprehensive system design of education. This form of education is a human activity system, and it values a contributive place among other such systems in the education of present and future generations. However, this system takes as its central purpose education directed toward addressing the global problematique by means of the connection between globality and ethics, and the importance of fostering reflexive logical openness in establishing a more gaiacentric view in both thought and action.

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