

Fostering Design competencies:  
Empathizing With and Enhancing Individual and Collective  
Self-Development Capacities

by

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Abstract: Creativity is not something that can be taught, yet it can be learned. How is it possible to 'learn' others to be creative? The key lies in the ability of the learning facilitator (for lack of a better term) to inculcate in others the desire and the confidence to idealize alternative futures through the full play of their imagination. This paper explores the role of the learning facilitator in this process: the utility of the systems concept of 'cognitive maps' for understanding and enhancing indigenous self-development competencies; and the operational aspects of creating realizable pragmatic scenarios with individuals and groups. Through such considerations, it may be possible to recognize the competencies, language, values, and methodologies that could be used to empower social systems with the ability to create their own learning ecologies and thereby to shape their future in the context of -- and in co-evolutionary relationship with -- their environment.

Key Terms: Creativity, idealization, design, learning,  
cognitive maps, system thinking.

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Fourth Generation Designers (FGDs) strive to foster individual and collective design competencies. These learning catalysts are concerned to capacitate individuals and groups to actively engage their changing environment by triggering in them the desire to creatively envision realizable futures. The FGD must be able to empathize with the values and desires that shape the disposition of the people with whom he or she works. Of equal importance, the FGD must not impose personal preferences, visions, and judgements on others. If he or she does, the future toward which they strive may not in fact be a true expression of their desires, but rather a fulfillment of the desires the FGD has for their future.

Although these notions concern design rather than development, they are very much in accord with the thesis put forward by Joanna Macy in Dharma and Development. According to Macy, development (like design), to be effective, "must merge with the indigenous ethos and interact with the specific genius of a culture."<sup>1</sup> In both cases, significant social changes can be brought about only if those who are most likely to be affected participate in soliciting the changes, choosing how they shall be made and implemented. Only then is it possible to inculcate fundamental transformations in social systems since, in such systems, human beings are the critical factor, and change must necessarily both emanate from and incorporate them.

. This paper explores 1) the competencies that distinguish a Fourth from a Third, Second or First Generation Designer; 2) the conceptual tools that would help the FGD to attain the level of empathy and sensitivity he or she needs to stimulate Human Activity Systems (HAS) into creative self-redesign; 3) a pragmatic set of assumptions that could guide the systems consultant in helping others to deal with their futures; and 4) some reflections on how the FGD might be able to approach the process of creative group design in ways that do not rely on pat algorithms pre-formulated methodologies.

### The Fourth Generation Designer

As worked out in the 1990 Fuschl Group D Conversation, First Generation Designers can be considered those who project the image of "expert," "specialist," or "authorfty" vis-a-vis the design process. They typically approach their design group with the attitude of "having studied your situation, I can show you

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<sup>1</sup> Joanna Macy, Dharma and Development: Religion as resource in the Sarvodaya self-help movement (Connecticut, 1983), 29.

what is the best way for you to develop. After all, I am the expert -- I know what is best for you and I can tell you what kind of future you want." The Second Generation Designer approaches the design situation in the role of the classical professional consultant." Like the First Generation Designer, he or she thinks they are able to provide the answers. However, in this case, they are willing to solicit input from the group for whom they are intervening. Their attitude is, "tell me what your problem is and I will design a solution tailored to your needs." The Third Generation Designer takes a radically different tack from the previous two by consciously striving to act in the role of "systems practitioner." Instead of proposing to design for someone or some group of ones, he or she strives to design with them. To these practitioners, design involves acting on the assumption that 'if I can get you to come up with workable scenarios for how you could redesign your future, then I can help you choose among them as well as choose the best way to turn your visions into a workable reality."

So far, to varying degrees, each generation of designer has worked within their own framework of values and beliefs. They all make rational or not so rational decisions of what would be "best" for the particular group in question. As a result, the degree to which their groups actually work out their own futures, rather than the future envisioned by the Designer, is compromised. The Fourth Generation Designer seeks not to impose his or her will. To borrow the terminology of chaos theory, the FGD provides dynamic attractors that serve to move the system out of its dominant regime and to stimulate it to seek new state attractors around which to establish an alternative regime. What does this actually mean in practice? It means that the FGD works to get people excited and involved in their futures. He or she provides the functional equivalent of a "pep talk" to get them to invest in the building of a common future. In other words, the FGD sparks the dormant autopoietic capacities of the HAS with

which he or she interacts.

Okay, ' so what does the FGD actually do? I mean, if the objective is no longer to do as Confucius said -- "to teach a man how to fish, " but rather "to foster the competency for fishing" - - then how does one go about it? It is no good to suggest that the key is simply empathy and interaction. Too much of these lead to a position of extreme cultural relativism where there is no basis for guidance anymore. Too little of them and development can be overly influenced by exogenous values. How then, does the FGD go about potentiating others? What are the conceptual and perceptual tools needed to bring out creative responses from others? And how is it possible to explicate design?

To address these concerns, it is important to begin with a clear set of conceptual tools. These are the tools with which the FGD works. The clearer and more explicit the concepts, the better able he or she will be to catalyze change rather than impose it.

### The Conceptual Tools of Design

To relate to the "indigenous ethos," or more precisely, to the disposition of people, the FGD needs to comprehend the specific culture of those with whom he or she works and to recognize the ways in which it is similar to and different from his or her own culture. How, then, can we define "culture"? In current usage, the-concept of culture is vague and nebulous. The basic weakness, of the everyday usage of the concept lies in being unclear whether it refers to culture with a capital "C"-- meaning what is sometimes termed "high culture" (the arts and literature, including certain elements of science, e.g., natural and social history, and archeological museums) -- or to culture with a lower-case "C" in the sense of the living culture of a

people (in which sense it embraces the popular arts and technologies as well as popularly held values, mores, and forms of expression). Recent usage tends toward the latter.

In the early 1950s, two distinguished anthropologists set out to clarify the meaning of culture. The pathbreaking work of Alfred Kroeber and Clyde Kluckhohn identified no less than one hundred and fifty different definitions of the term. They classified the many different definitions of culture according to their generic similarities: descriptive, historical, normative, psychological, structural, and genetic. The book they wrote on the subject is a milestone in the search for a conception of culture which is consistent with reality and its contemporary linguistic uses.<sup>2</sup>

Raymond Williams observed that by the time of Kroeber and Kluckhohn's work the broader and more all-embracing conceptions of culture were actively competing with and, in some cases, actually subsuming, many of the more traditional and less expansive conceptions of culture:

Before this period, it (culture) had meant, primarily, the "Vending of natural growth," and then, by analogy, a process of human training. But this latter use, which had usually been a culture of something, was changed, in the eighteenth and early nineteenth century, to culture as such, a thing in itself. It came to mean, first, "a general state or habit of the mind," having close relations with the idea of human perfection. Second, it came to mean "the general state of intellectual development, in a society as a whole." Third, it came to mean "the general body of the arts." Fourth, later in the century, it came to mean "a whole way of life, material, intellectual and spiritual." It came also, as we know, to be a word which often provoked either

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<sup>2</sup> Alfred Kroeber and Clyde Kluckhohn, Culture: A critical review of concepts and definitions (New York, 1952).

hostility or embarrassment.<sup>3</sup>

Sir Edward Burnett Tylor laid the basis for a tradition of cultural anthropology that viewed culture in this fourth way. In his Origins of Culture (1871), he sets out what has since become the classic statement of the anthropological conception of culture:

Culture, or civilization, taken in its widest ethnographic sense, is that complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of society.<sup>4</sup>

This notion has been echoed by many well-known anthropological and historical thinkers since Tylor's time, including Ruth Benedict, Franz Boas, Margaret Mead, Ralph Linton, Bronislaw Malinowski, Oswald Spengler, Pitirim Sorokin, Arnold Toynbee, T.S. Eliot, and Alfred Kroeber, with such definitions of culture as: "that complex whole which includes all the habits acquired by man as a member of society"; "the sum of all activities in a society"; "all manifestations of a community"; "the totality of material and non-material traits"; the "sum total of ideas, conditioned emotional responses and patterns of habitual behavior"; or "the total body of belief, behavior, knowledge, sanctions, values, and goals that mark the way of any people."<sup>5</sup> Common to all these definitions is the notion that culture is something created by all classes, and consequently, that it belongs to all classes. Whereas previous conceptions of

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<sup>3</sup> Raymond Williams, Culture and Society 1780-1950 (London, 1961), 16.

<sup>4</sup> Edward Burnett Tylor, The Origins of Culture (New York, 1958), 1.

<sup>5</sup> Kroeber and Kluckhohn, op. cit., 81-84.

culture were partial and, in one way or another, elitist, these conceptions strove to be egalitarian and complete.

Culture as "an organizing, valuing, or ordering process," as Ruth Benedict and T.S. Eliot observed,<sup>6</sup> is what makes culture greater than the sum of its component parts. Here, it is not only the totality of activities which is important, it is also the way in which these activities are orchestrated to yield different patterns and themes. The prominent sociologists, J.P. Gilliam and J.L. Gilliam, provide a definition of culture that both embraces this perspective and addresses the type of concerns that must be taken into account in the investigation of the relationship between culture and design:

The customs, traditions, attitudes, ideas, and symbols which govern social behavior show a wide variety. Each group, each society has a set of behavior patterns (overt and covert) which are more or less common to the members, which are passed down from generation to generation, and taught to the children, and which are constantly liable to change. These common patterns we call the culture.'

Such common patterns include the relationships among and between people, the objects they create, and the natural environment. These relationships are both reflexive and transitive; that is, they pertain to both the psychological aspect and the social aspect of human relations, to the objects created on the material circumstances of people's lives, and to the preservation of historical heritage. As Marvin Harris pointed out, the process by which these relationships are passed from one generation to the next does not depend on genetic

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<sup>6</sup> Cf. Ruth Benedict, Patterns of culture (London, 1963), 33 and 36; T.S. Eliot, Notes towards the definition of culture (London, 1963), 31.

<sup>7</sup> Kroeber and Kluckhohn, op. cit., 96.

heredity: according to Harris, culture is "the learned repertory of thoughts and actions exhibited by the members of Social groups -- repertories transmissible independently of genetic heredity from one generation to the next."<sup>8</sup>

These definitions suggest that culture can be considered that which distinguishes one social group from another, being the set of products and activities through which humans express themselves and become aware of themselves and of the world around them- It comprises the whole complex of distinctive spiritual, material, intellectual, and emotional features that characterize society and social groups. As such, culture comprises the full range of knowledge and values which were not specifically taught but which all members of a community nevertheless acquire.

Fine and good. But how can the FGD get a feel for the specific culture with which he or she deals as distinct from the one from which he or she comes? I suggest that the notion a "cognitive map" serve as a tool for doing so. The concept of individual and collective cognitive maps can help explore the role of the FGD in a design environment. I now turn to a consideration of the extent to which this concept derives from, and is a subset of, the notion of culture.

Cognitive maps, in general, serve to navigate the topography of socio-cultural and physical environments. We derive an understanding of this terrain through the structure of these maps. Over the ages, models of cognitive maps have undergone evolution, have been fine tuned and, at times, have been discarded as more meaningful ways of understanding became available. This process afforded an ever broader view of ourselves, and allowed us to see an ever larger, clearer, and

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<sup>8</sup> Marvin Harris, Cultural Materialism: The struggle for a science of culture (New York, 1974), 47.

more detailed picture.

How we see aspects of the world in which we live and our relationship to them depends our understanding of ourselves as living beings 'in complex social and physical settings. To attain a better perspective of this issue requires an exploration of the values and beliefs that underlie human behavior. Consequently, it will be important to elucidate the foundations of the contemporary cognitive maps that describe the values and beliefs of given communities and to explore the aspects that distinguish such maps from similar cultural paradigms and Weltanschungsm or Weltansichts, whether based on myth or on science. A truly operational framework for the FGD can be constructed on the bases of a model that would permit description of the set of conceptual and perceptual filters that orient cultural dispositions in different segments of society. To begin with, the general notion of the cognitive map of individuals in society and, in the collective, of societies themselves is explored.

The concept of a cognitive map is becoming part of the accepted terminology used to describe human-environment interactions in evolutionary and adaptive studies. It has been most widely used to denote the mental representations by which animals and humans (indeed, all living creatures) navigate their evolutionary landscapes. The concept of a specifically human cognitive map derives from the notion that human beings "map" their environment as a conceptual representation of that environment.<sup>9</sup>

When humans map their social interactions cognitively there is actually a double representation. On one level, sensory stimuli are mapped: on the other level, the linguistic

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<sup>9</sup> Robert Artigiani, et. al. The evolutions of cognitive maps: New paradigms for the 21st century Vol. 1. (Vienna, 1989), 4.

descriptions of interactions appear. This dual representation makes human cognitive maps characteristically complex. Their information is communicated through linguistic portrayals, skilled behaviors, technologies, and other artifacts. To prioritize-and preserve this information, cognitive maps involve values: "the human ability to symbolize permits not only complex human mental models but the possibility of choosing among them. A 'value' is an expressed preference among a series of alternative mental models."<sup>10</sup> Values are symbols that record phenomena and catalyze reactions to them. They encourage repeating behavioral sequences, forming stereotypes, and performing rituals. By incorporating values derived from cultural contexts, individual maps incorporate a certain amount of developmental leeway. Much of the information in linguistic portrayals, skilled behaviors, technologies and the like, information on which individual maps depend, is transferred from others. Thus, human cognitive maps can be constructed without direct experience. The nature of these learning processes contributes to making our cognitive maps socially constructed realities.

At the most general level, therefore, individual human cognitive maps can be thought of as the means by which we structure and organize our experiences in a coherent manner. As such, individual maps refer to the specific representations or images of social and physical reality formed in the mind. According to Artigiani et al., a cognitive map can be understood to represent "the process by which an organism makes representations of-its environment in its brain."<sup>11</sup>

More specifically for the purposes of this Think Paper, it

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<sup>10</sup> Richard N. Adams, The eighth day. Social evolution as the aslf-organization of energy (Austin, 1988), 93.

<sup>11</sup> R. Artigiani, op. cit., 4.

is possible to define the concept of a cognitive map as the mental image or representation made by human individuals and groups of their environment and their relationship to it, involving not only the rational aspects of attitudes and behaviors, but also the values and belief components that shape human perception. As distinct from culture, cognitive maps pertain to individuals as well as to social groups, whereas culture is, by definition, a property of the group or of the individual's relationship to the group. Furthermore, while it is true that cognitive maps are defined by their general cultural context, they may also depict specific aspects of culture, such as the values and preferences of people or a people toward technology or technologies.

The "map" depicts a mental representation of one's environment and one's relationship to it inasmuch as it is the image, even though it is never an exact and one-to-one representation of external reality. To search for the map is to try to decipher the image, while "mapping" the map would be akin to creating an image of the image. The goal of any such search is to create a model of the mental representation of the various aspects of culture which take the form of cognitive maps; to generate a "map of the map," or a meta-map.

As mentioned above, on an individual level, cognitive maps are conditioned by the values and beliefs that are dominant in society at the time. Within a given culture, values and beliefs are relatively coherent. As a result, it is possible to talk about a collective or societal (social, cultural, as well as natural) cognitive map of the environment that is greater than the sum of the interpersonally coherent individual cognitive maps of which it is comprised. Such a societal cognitive map describes the general orientation of a given culture at a given time.

Cognitive maps that serve as vehicles for societies to probe environments quickly and effectively are the means to their ability to keep pace with accelerating rates of change. When "in sync" with socio-cultural dynamics, such maps permit cultural behavior that matches societal change by the efficient processing of environmental information and the effective exploration of various structural responses to future possibilities. When they no longer do so, however, they tend to perpetuate singular responses that no longer fit with the realities of a changed and changing environment. This is because information about one's environment is normally processed so as to reduce, rather than to increase, behavioral uncertainty. When information can no longer be effectively processed, individuals begin to rely on their personal representations of local experience rather than on the cultural representations of collective experience described by their societal cognitive maps.

It seems reasonable to suppose that evolutionarily unadaptive or unstable responses to change and the threat of crisis could be made more adaptive through conscious attempts to couple the mutually defining influence of cultural attitudes and socio-environmental change. In other words, if it is possible for systems researchers to elucidate the collective cognitive map that dominates contemporary attitudes and dispositions in given societies, then it should be possible for systems practitioners to elaborate on such maps and to seek a more felicitous harmonization between design opportunities and cultural development. The following line of reasoning sets forth the basic assumptions behind such a project.

1. Everyone has a way of ordering their perceptions and conceptions to make sense of the world around them and of their place in it. To do so, individuals create what are called cognitive maps of their external environments.

2. The maps are influenced by a shared culture which serves as a supraordinate framework that lends them interpersonal coherence.
3. coherent individual cognitive maps amount to a collective cognitive map which is, in fact, the cognitive map of a society. At this level, that aspect of culture which channels the general disposition of a people describes the cognitive map of the society.
4. society's cognitive map can be researched and its main features identified. This is then a model of the existing cognitive map (an operational framework to describe the society's culture).
5. Difficulties arise when individual cognitive maps do not jibe with the design visions of system facilitators.
7. To harmonize this disjunction, it would be necessary to explicate and enhance individual cognitive maps through specifically designed educational media (thereby addressing the imbalance on one side), while providing the conceptual means whereby FGDs could better adapt their interventions to prevailing cognitive maps (thereby addressing the imbalance on the other).
  - a. Through historical and contemporary case-studies, it would be possible to provide a systemic mapping of a society's cognitive map. Such a model could be used to make rational (i.e., culturally and technologically optimal) design choices.
9. The mapping could be accomplished through the generation of a design-culture typology wherein design alternatives are matched against culture types: the types of life-ways, values, and images of social reality that have the closest mesh with specific modalities of innovation.

By working through this line of reasoning, systems researchers could provide an understanding of social systems and the changes that take place in them over time, not just to comprehend them, but to help shape those forces that in turn shape our lives so deeply and lastingly. A clearer understanding of cognitive maps and their role in shaping and being shaped by the dynamics of change holds great promise for the generation of

a true Design Culture, both for what it has to offer social systems searching for meaningful futures, and for the insights it can provide the FGD in the design process.

### The Process of Design

How does the FGD start to explore ways to challenge and to be challenged to think creatively, interactively, and holistically? To approach some answers to this question, we have to work on reinterpreting our interaction space (the real-world environment that we represent and assess with our cognitive maps). Although classical education does nothing to help us deal with the uncertainty of questions like  $2+x=?$ , they arise frequently in the real world, and yet we are often able to offer reasonable answers to them and to take decisions based on such inadequate information. How do we do this and what is the character of our cognitive maps and those of others that permit us to navigate in a world of multicausal complexity?

As an initial conceptual spring-board to these issues, we must work at getting potential system designers and planners to learn how to learn, that is, to engage in what is known as 'second order learning.' Doing so would involve working through the set of assumptions listed above and recognizing the extent to which subjectivity is a crucial and welcome feature in the design process. The classical emphasis on objectivity provides no ground for empathy and the awareness of differences in methods of doing and ways of thinking. These reflections should provide the FGD with the "fuzzy guiding stimuli" that do not over-determine the design process but rather serve to channel it toward creative ends.

The FGD-want-to-be would focus on his or her own cognitive map as well as on those of the people with whom he or she works,

trying to understand the ways in which they determine and are determined by other contextual factors in their environment. This would furnish them with critical insights into various epistemological premises embedded in planning and futures studies. To understand the role of FGD, each facilitator should consider questions of in what ways the future is a social construction, what is the power of interpretation, and what is the role of the systems consultant in the process of representing the interests of others through design and interactive management activities. By considering questions such as these, we could help prepare ourselves to engage in meaningful design activities -- meaningful not only to us, but more importantly, to the system with which we are designing and that is being shaped and given life through the process of design.

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