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**DEVELOPING ADVANCED SYSTEMS THINKING**

**Evolutionary Design as a Means for Developing Ourselves and Our Society**

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In the 2001 issue of the ISSS Bulletin, Gianfranco Minati, Maria Pietronilla Penna, and Eliano Pessa (and I hope they forgive my interpretation) describe ethics as a set of rules able to induce the emergence of social systems. Emergence is social systems can occur with the herding activity toward collectively-held ethics. In Bela Banathy's (1996, 1998) work with evolutionary design and evolutionary guidance systems, Len Duhl's Healthy Cities, and Kathia and Alexander Lazslo's (1999) evolutionary learning communities, people consciously create social systems oriented toward collectively-articulated, ethically-oriented envisioning of a better world.

According to the hierarchical theories of developmental psychologists, the shift from the control and containment of the flow of people, information, and ideas of traditional social structures to the free flow of people, information, and ideas toward collectively-held, clearly articulated aspirations indicates a shift to a higher level of interpersonal, intrapersonal, and cognitive ordering of reality (Kegan, 1994; Richards & Commons, 1990; Wilber, 2000).

Robert Kegan (1994) describes traditional, in-control, top-down management style as an indicator of a particular way of ordering reality, a level of cognitive, interpersonal, and intrapersonal development. Mutual reciprocity as a basis for interpersonal relationships and internally-generated visions that are independent of the expectations of the environment indicate a lack of understanding of the interrelatedness and embeddedness of systems.

A higher level of reasoning is indicated when leadership “provides a context in which all interested parties, including the leader, can together create a vision, mission or purpose they can collectively uphold” (Kegan, 1994, p.322). Vision is never complete and always up for revisioning. Difference is valued and required; absolutes are rejected. Conflict is believed to result from an incomplete self and an indicator for further visioning of self. This leadership style indicates the ability to cognitively order reality from a trans-system view that is dialectical, post-ideological, and comfortable with paradox and contradiction. Systems thinking at this level has been found in less than 2% of the adult population, regardless of economic status and educational level (Kegan, 1994).

This paper describes *how* this activity, evolutionary design and the herding or “swarming” toward consciously-created, ethically-based purpose, develops the cognitive, interpersonal, intrapersonal, and ethical capacity of people to order reality in terms of systems and how it expands their capacity to apply and understand systemic processes in their work and in their world.

### **The Experience of Paia Youth Council, Inc.**

Four years ago, we, the board members, staff, and youth, of a small community-based youth center, redesigned our system in the following steps:

1. We created an idealized image of Paia Youth Council, Inc. (PYC) in nine dimensions through a series of meetings with staff, youth and board members.
2. Our aspirations or purposes for governance, social action, economics, esthetics, ethics, health and wellness, education, scientific knowledge, and technology , combined with our philosophy, became a guidance system for youth center activities.
3. The purposes were used to design activities, projects, and events. The executive director began to ask, “How does this project affect our health?” “Will the way we do this develop friendships? Will it be fun for all of us?” “Will this help the youth develop economic skills?”
4. We discovered the guidance system formed a simple and intuitive way to interact, plan, and assess actions.
5. We began to evolve as a system and as individuals.

The following shifts within PYC occurred over the eighteen months following the design of the evolutionary design system:

Prior to Design	After Design	18 months after Design
<u>System Environment:</u> •“We help the community”  •Youth as community problems	•“We are the community. We have to be the change we want to see.”  •Youth as community members	•“We learn from the community and become leaders when we stand by our values and purposes.” •Youth as assets and leaders

<ul style="list-style-type: none"> <li>•Boundaries defined by program and site</li> </ul>	<ul style="list-style-type: none"> <li>•Boundaries defined by purposes and are “fuzzy”</li> </ul>	<ul style="list-style-type: none"> <li>•Focused inward on the youth &amp; coevolving with community</li> </ul>
<p><u>System Structures &amp; Functions</u></p> <ul style="list-style-type: none"> <li>•PYC’s structure determined staff functions and purposes</li> <li>•Job descriptions define jobs</li> <li>•Hierarchical structure from board to recreational assistants</li> </ul>	<ul style="list-style-type: none"> <li>•Purposes guided functions and with some adjustments made to structure</li> <li>•Job descriptions constantly redefined to fit changing functions</li> <li>•Youth are in the center of the chart with staff circling them and the board overseeing the whole.</li> </ul>	<ul style="list-style-type: none"> <li>•Purposes guide functions and structure.</li> <li>•Job descriptions abandoned for time management plans that focus on purposes.</li> <li>•Youth are in the center with staff leading and mentoring and the board as community support.</li> </ul>
<p><u>System Processes</u></p> <ul style="list-style-type: none"> <li>•Planning based on assumptions about youth centers</li> <li>•Assessments are quantitative and conform to funding requirements</li> <li>•Motivation from individual initiative</li> <li>•”We need more money, qualified people, a better building to do the job.”</li> <li>•Focus on fixing problems and the past—negative feedback processes</li> </ul>	<ul style="list-style-type: none"> <li>•Planning involves designing creatively toward purposes</li> <li>•Assessments based on how activities address purposes</li> <li>•Motivation from collectively-held purposes</li> <li>•”We can improve our work right now with what we have</li> <li>•Focus on the future and achieving purposes—use of both negative and positive feedback processes</li> </ul>	<ul style="list-style-type: none"> <li>•Continual design replaces planning</li> <li>•Assessment as a continual design process</li> <li>•Motivation from the design process itself</li> <li>•”Problems and concerns are indicators of incomplete design.”</li> <li>•Focus on continual design—positive feedback processes</li> </ul>

Board and staff meetings became dynamic and creative. Enrollment increased, the staff was energized, and the activities were youth driven and had more meaning and depth. The youth were learning more, the community was more proactive, and the families more involved.

We were thinking differently. PYC’s boundaries were clearly defined by the purposes rather than by the hierarchical structures of the organization. We saw how we were an embedded part of the community and yet leaders within it. PYC shifted from running from structure to function to carrying out purposes to running from purpose, then

carrying out functions which resulted in a structure. No longer were we trying to “fix” people or community; we were imagining new ways of living and then designing ways to bring the images to life. Positive feedback as a means for development replaced the negative feedback processes which were the means for maintaining order.

Through the process of evolutionary design and of “swarming” toward collectively-held purposes, we had shifted from a mechanically-oriented, problem-oriented approach to an ethically-oriented, upbeat, possibilities-oriented approach. I began to observe and ask what was going on within design to have such a profound effect on us, the participants in the design process. Drawing on developmental psychology, counseling psychology, and education, I identified the following practices.

### **Practices within the Evolutionary Design Process**

Four practices arising from a systems view of the world can be identified within the process of evolutionary design: mindfulness, constructivist education, the development of ethical expertise and moral reasoning, and the principles of psychology of mind or health realization.

*Mindfulness.* Evolutionary design is a “mindful” exploration of possibilities and actions. Langer (1989) describes “mindfulness” as a process that transcends the limitations of the more mechanical view of intelligence and that provides an alternative view of human capacity. Intelligence is a linear process from problem to resolution completed as rapidly as possible. It defines the optimal fit between individual and environment. Mindfulness considers several perspectives from which any situation may be viewed. It is a process of stepping back from problems and solutions and viewing them as novel. Intelligence involves an expert’s perspective that focuses on stable categories, while mindfulness involves the actor’s ability to experience control through shifting perspectives. Intelligence is a means of achieving desired outcomes, while mindfulness is a process through which meaning is given to outcomes. Intelligence uses facts and skills in contexts that are sometimes perceived as novel while mindfulness appreciates the fluidity of knowledge and recognizes the advantages and disadvantages of knowledge and skills (Langer, 1989). Evolutionary design is a mindful process of learning that efficiently and effectively teaches more than simply content—It develops a consciousness of the fluid nature of thought and results in open exploration and innovation.

*Constructivist education.* While two general approaches to education, instructionism vs. constructivism, are at the center of current educational reform (Kohn, A., 1999; Marlow & Page, 1998), evolutionary design demonstrates the power of the constructivist view. The mechanical, rote, controlled format of instructionist education contrasts with the more systemic, exploratory, emancipatory format of constructivist education. In constructivist education, the learner is discovering the complexities of information and selecting information. In instructionist formats, the learner is primarily repeating information. In constructivist education, the learner is organizing meaning, rather than simply accepting what is taught. In constructivist education, the learner discovers a

variety of points of view regarding the same subject from a variety of sources, while in instructionist education the teacher is the primary source of information. In instructionist formats, the learner given planned, fragmented information organized in consecutive, controlled order, while in constructivist education the learner's relationship with the material is entrepreneurial, contextual, and creative, arising from the learner's experiences. (Kohn, A., 1999; Marlow & Page, 1998).

Evolutionary design is the process of constructing knowledge through personal and collective exploration. Teachers and students are no longer a necessary delineation. We are all experts of our own experience. We require expertise in each area of purpose. We all learn from one another.

*Moral Reasoning and Ethical Expertise.* PYC's new evolutionary design processes resulted in a leap in moral reasoning that can be described in the terms of Kohlberg's (Kohlberg & Ryncarz, 1990) hierarchical theory of moral reasoning. Before the design of its guidance system, PYC reasoned from Kohlberg's fifth stage of moral reasoning. Staff members had different values and legal points of view and they worked independently on projects to avoid conflict. Diverse points of view conflicted and they were difficult to integrate. Individuals had their own values and rights, their own aspirations, and believed in their expression. Responses to youth behavior were personal responses that were based on individual points of view of the legal system, the needs of youth and community, and individual interpretation of laws and rules.

Eighteen months following design of the EGS, PYC is guided by its idealized image that is grounded by universal ethical principles--clearly Kohlberg's sixth stage of moral reasoning (Kohlberg & Ryncarz, 1990). Universal ethical principles are the basis for the dimensions of purpose and provide the basis for decision-making for those at PYC. Equality of human rights and respect of individuals is indicated by the flattening of the hierarchical structure and the respect of, and need for, diverse points of view. Modeling and response to the youth is now grounded in a higher level of moral reasoning reflected in the EGS.

Gilligan's (1990) emphasis on the development of caring and responsibility rather than simply intellectual moral reasoning is reflected in the process of evolutionary design. PYC's design processes put people directly into the dialectic of relationship: the interaction with others, the dialectic between PYC's idealistic, ethical aspirations and the individual's and group's perceived reality. In the exploration of purpose, particularly with the inclusion of the esthetic, the people of the system connect with and learn from one another through what they value, with their dreams and ideal images, and their common purposes.

But moral reasoning and the emphasis on care and responsibility do not fully describe the process of ethical development that occurs at PYC. Systems theorist Francisco Varela (1999), in his interpretation of the teachings of Confucian scholar, Mensius, describes the development of ethical expertise. This development can be seen in terms of the experience of design at PYC:

1. At the beginning, the process of creating an evolutionary guidance system that consists of the ideal image of the system in nine dimensions of purpose sets up a series of ethical standards that people begin to apply to specific situations. The way is not clear, not defined, and must be explored.
2. At the next level, interactions, plans, and assessments are consciously viewed in terms of ethical ideals, PYC's guidance system. Direct attention is given to ethical consideration of actions through the application of the guidance system to actions.
3. At the third level, habitual responses are transcended for creative, innovative, and direct responses to daily concerns. All actions are ethical actions and the guiding purposes are integrated into all actions and decisions.

The evolutionary guidance system and the process of design provide a field for the exploration and development of ethical expertise of the system's people.

*Psychology of Mind and the Design Experience.* Cognitive therapy takes a mechanistic approach—breaking thought processes into parts, identifying the problem thoughts, and then “fixing” the thoughts (Beck, 1979). Psychology of Mind (POM) recognizes that thought is transitory and mood-based. POM transcends the focus on thought and focuses instead on the raising the immediate feeling, moods, emotions that create thought. When the focus is on an ideal image that creates higher mood states, thinking and actions flow toward the ideal. POM operates on a positive feedback process while cognitive therapy operates primarily on negative feedback processes. POM represents an advanced systems understanding that transcends the limitations of the mechanical world view.

In the process of design, in the dialectic between the ideal and reality, and in the complexity of multiple viewpoints and input, we begin to see the separate realities of people and the illusiveness of thought. We begin to see that “the way the world is” is subjective, changeable, easily deconstructed, but the world can be reconstructed in any way the people of the system want to construct it.

The orientation toward the ideal promotes uplifting, expansive feelings, raising our ability to think clearly and creatively. The system moves in the right direction when it moves toward the highest ethical ideals and it tends to have problems when it gets “off track.” Awareness fluctuates, opening in the higher mood states created when one works toward one's highest aspirations and closing when one is not going in the direction of one's aspirations. In evolutionary design affect is used as an internal and systemic guidance system that signals the need to revisit the system's purposes.

### **Evolutionary Design as an Integral Transformative Process**

Robert Kegan (1996) points out that for the social support for higher levels of adult development, the “curriculum” is in development and the qualifications for expertise are suspect. Evolutionary design transcends our traditional systems and provides a means for

us to organize ourselves, educate ourselves, and ethically and psychologically develop ourselves.

Ken Wilber (2000) calls for an “integrative transformative practice” that “attempts to exercise all of the basic waves of human beings—physical, emotional, mental, and spiritual--in self, culture, and nature,” that supports people in the move from one “wave” of development to the next, from whatever “wave” or level they begin. In the process of evolutionary design, the full spectrum of our lives as individuals, as a group, and as a part of a global environment is guided by our idealized images of governance, social action, health, scientific knowledge, technology, esthetics, economics, ethics, and education.

Evolutionary design is an “integral transformative process” that is simple and intuitive. It is “built in” to our natures. People can join in from whatever “level of development” they are operating. We need all perspectives in design. We are free to design our own systems, to swarm toward collectively-held ideals, and to develop our own capacity to reason and to act in a complex, rapidly-changing world.

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