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# The Epistemological Foundations of Evolutionary Systems Design

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## Summary

This paper presents the genesis of Evolutionary Systems Design (ESD) as a praxis that draws on General Evolution Theory and Social Systems Design methodology, in addition to Critical Systems Theory, to engage in lifelong learning and human development in partnership with Earth. The origins and foundation of ESD are portrayed as providing the basis for a framework that bridges evolutionary consciousness and evolutionary action. The roots of ESD are traced back to General Evolution Theory on the one hand and to the notions of evolutionary stewardship that grew out of the action-inquiry encounters fostered by the International Systems Institute on the other. It is described how these notions were given operational viability through the methodology of Social Systems Design. The fundamental tenets of ESD are presented and discussed by way of a four stage evolutionary learning framework. Finally, the vehicle of Evolutionary Learning Community through which ESD operates is shown to embody the potential for individuals and groups to think, live, and act in harmony with the dynamics of which they are a part as a means to guide the conscious creation of sustainability.

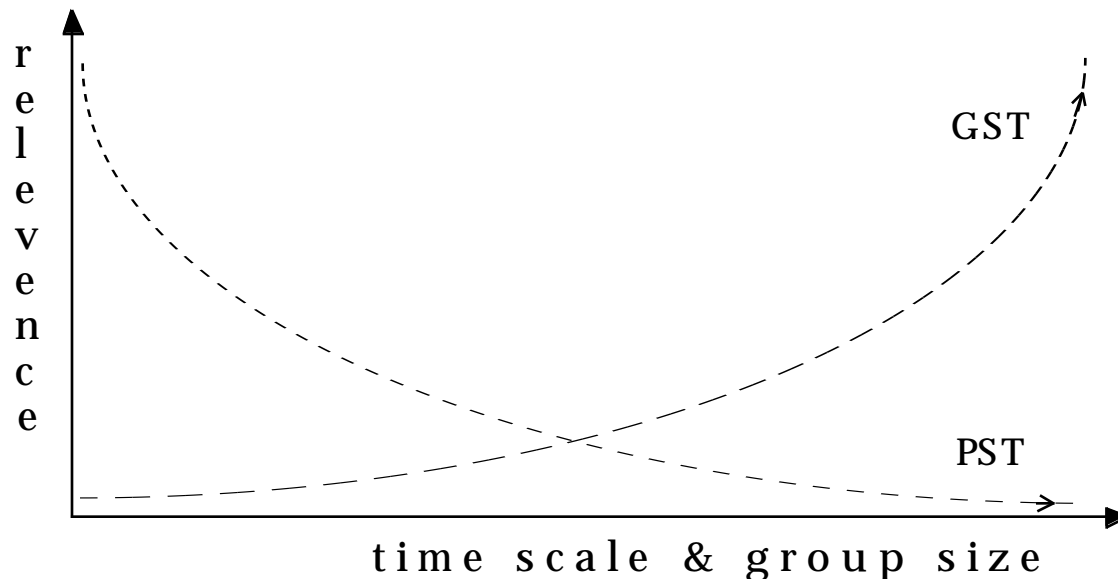
**Keywords:** General Evolution Theory, Social Systems Design, Evolutionary Systems Design, Evolutionary Learning Community, syntony.

## Introduction

Evolutionary Systems Design (ESD) is a relatively recent contribution to the field of the social systems sciences. It responds to a need for a future-creating design praxis that embraces not only human interests and life-spans but those on planetary and evolutionary planes as well. The split between macro- and micro-scale conceptual frameworks in contemplation of human

developmental concerns continues to provide a difference of perspective within the systems sciences that inspires either homo-centric change efforts or evolutionary interpretive frameworks for them, but little by way of evolutionary strategies for the design of healthy and sustainable modes of being and becoming on a day-to-day basis in partnership with the life support systems of planet Earth.

At the 31st Meeting of what was the International Society for General Systems Research (ISGSR) in 1987, I presented a paper comparing General System Theory (GST) approaches, in the tradition of von Bertalanffy, Boulding, Gerard, and Miller, with those of Purposeful System Theory (PST), following the work of Ackoff, Churchman, Emery, and Trist. Both approaches could be usefully applied to understanding sociocultural systems: within community-sized boundaries and generational time frames, PST interprets these systems to be purposeful, organized composites of purposeful systems. However, as the time frame and the boundaries are expanded, GST suggests that our perception of purpose in the developmental dynamics of these sociocultural systems becomes attributable less to their individual components than to the synergistic interactions among them.



**Figure 1. Relative Interpretive Power of Two Sociocultural Change Frameworks**

This comparison suggests that GST provides a powerful descriptive/explanatory framework understanding and interpreting sociocultural change, while PST provides a powerful action/interventionist framework for the same. And while these two ways of thinking are conceptually contiguous, they are rarely employed in conjunction. Through a creative process of learning about syntony, sustainability, and evolution, and consciously seeking ways of applying it to the creation of conditions that foster them in day-to-day living, ESD represents an effort to draw upon and integrate these two approaches. The primary vehicle for the implementation of ESD is the Evolutionary Learning Community (ELC) which, as a catalyst for ESD, often involves a collective inquiring exploration of the modes, means, and methodologies relevant to both furthering the understanding of communities of syntony and to their translation in usable models by themselves and others. Real-world ELCs serve as the empowering spaces, the think

tanks, the interactive access centers that create the conditions of empowerment for individuals and groups to engage in a self-directed praxis of ESD in stewardship of life.

## **General Evolutionary Roots**

General Evolution Theory (sometimes, Evolutionary Systems Theory) has great epistemological appeal as an interpretive framework for macro-scale sociocultural issues such as those relating to national development planning and sustainable development strategies. It creates a ‘rich picture’ perspective of the whole story within which to consider how a people can develop their own ways of thinking, doing, and being without having to submit to the hegemony of technology transferred from some other culture or some other era. It makes evident the essential isomorphy between ‘learning’ and ‘evolution,’ as well as the extent to which currently dominant educational paradigms are, if anything, non-evolutionary.

Concerns such as these beg action. The question is how to employ GET as a means to further understand and contribute to the betterment of the human condition in partnership with Earth. One direction in which answers may be found is in the creation of actionable perspectives on the issue of learning how to foster our individual and collective evolutionary potentials. GET seemed to offer a means to insight along these lines. The promise of GET is captured succinctly in Laszlo, Masulli, Artigiani, and Csányi (1993):

General evolution theory, based on the integration of the relevant tenets of general system theory, cybernetics, information and communication theory, chaos theory, dynamical systems theory, and nonequilibrium thermodynamics, can convey a sound understanding of the laws and dynamics that govern the evolution of complex systems in the various realms of investigation. ... The basic notions of this new discipline can be developed to give an adequate account of the dynamical evolution of human societies as well. Such an account could furnish the basis of a system of knowledge better able to orient human beings and societies in their rapidly changing milieu. (xvii.)

However, this promise is heard differently by different people. The very concept of evolution is itself a controversial notion, and even “perhaps the most controversial of all scientific theories,” according to Peter Bowler (1984, xiii). With somewhat greater confidence in the term, Lewis Thomas (1974, 142) asserts that “our most powerful story, equivalent in its way to a universal myth, is evolution.” Yet in the final analysis, the term must be recognized as a cognitive construct; one that informs various aspect of our perception of the world, should we choose to incorporate it into our own cognitive map (Laszlo & Krippner 1998, 68). In the context of GET, it is intended to specify a trend in the development of the universe that constitutes a ‘cosmic process.’ It manifests through particular events and sequences of events that are not limited to the domain of biological phenomenon but extend to include all aspects of change in complex dynamic systems with a throughput of information and energy. More simply put, it is “a general way of conceptualizing the self-organizing selection process of the universe displayed in ... increasing complexity” (Reeves 1992, 1102).

Without a doubt, GET provides a powerful theoretical systems approach by which to understand human and natural systems. It offers a clear and succinct articulation of the emerging evolutionary scientific paradigm. Through transdisciplinary study drawing on the sciences of complexity — general system theory, cybernetics, nonequilibrium thermodynamics, autopoietic systems theory, chaos theory, and dynamical systems theory — it offers a robust explanatory model of general cosmic evolutionary processes as they manifest across both natural and cultural realms.

Through study of GET it is possible to gain deep awareness of the embedded and entangled character of the dynamic relations between living systems and their environment. It can also give rise to an even deeper respect for the creative cosmic dance of perpetual transformation that describes these relations. GET offers insight into how inextricably we are a part of this grand pattern making process, and how continually we move from being to becoming. But what, if anything, can or should one do with this insight? That is, while GET provides clear guidelines by which to understand “what” evolution means and “why” our actions and inactions are important, it says precious little about “how” we can get more consciously involved in it. What is missing are indications of how to create, and then translate into action, opportunities for the proactive stewardship of sustainable pathways in partnership with the life support systems of planet Earth. If it were possible to do this in more than just an idiosyncratic though ‘evolutionarily informed’ way, it might be possible consciously to foster integral evolutionary development. The dilemma is how to steward ‘that which should be’ without either imposing solutions or presuming answers.

## **Social Systems Designing grounds**

Russ Ackoff’s Social Systems Sciences program at the Wharton School of the University of Pennsylvania introduced me to the work of Bela H. Banathy in the mid-1980s. Specifically, I encountered his writings on Social Systems Design (SSD) and began to participate in the International Conversations on the Comprehensive Design of Societal Systems that take place yearly at Asilomar in California and every two years at Fuschl-Am-See in Austria. I was thrilled with what I was learning from and with Banathy, for it provided a way to address the interests and concerns that had grown out of my study of GET.

Banathy looks upon social systems design as a “future creating disciplined inquiry” (Banathy 1996, 45). According to him,

even if people fully develop their potential, they cannot give direction to their lives, they cannot forge their destiny, they cannot take charge of their future — unless they also develop competence to take part directly and authentically in the design of the systems in which they live and work, and reclaim their right to do so. This is what true empowerment is about. (Banathy 1996, vii)

It is precisely this sort of empowerment that is missing from standard formulations of GET. Just as GET provides a powerful theoretical systems approach by which to understand human and

natural systems, so SSD provides a powerful action-oriented systems approach to the development those same systems. It provides for a purposeful, creative, and methodologically robust process through which human activity systems can transcend current realities by translating an ideal image of their future into lived reality. As an interactive and participatory process, SSD is based on the premise that we cannot design *for* others: we can only design *with* others. Were we to do otherwise, we would not be engaged in authentic design but rather in the imposition of our visions, values, and proclivities.

The design component of SSD is therefore participatory in nature. It acknowledges that significant social change can be brought about only if those who are most likely to be affected by it participate in soliciting it, and choose how it is to be implemented. Since in societal systems human beings are the critical factor, change must necessarily both emanate from and incorporate them. SSD advocates anticipatory democracy — what Banathy prefers to call future-oriented participatory democracy — where people actively apply their skills to the analysis and design of socially and ecologically sustainable systems by becoming active participants in shaping their future.

## The Design of Change

The methodology of SSD calls for conversation. Two complementary modes of dialogue comprise design conversation: generative dialogue and strategic dialogue (Banathy 1996, 218). One provides a process through which individuals become friends and partners in learning/designing and a community generates common meaning. The other focuses on particular tasks in the creation of solutions for a specific social circumstance. The complementary dynamic between generative and strategic dialogue echoes M. Scott Peck's (1987, 104) exhortation: "community-building first, problem-solving second."

Generative dialogue can be considered as the core transformative process for a group to become an authentic community. Banathy suggests that the involvement in generative dialogue "will lead to the creation of collective consciousness, collective inquiry that focuses on the thoughts, values, and worldviews of the group and creates a flow of shared meaning, shared perceptions, a shared worldview, and a social milieu of friendship and fellowship" (1996, 219). Once the community has bonded, and if there exists the intention and the commitment, they can then enter into strategic dialogue through a focus on communal activities of learning and designing. When dialogue consists of collective learning and coordinated action, paradigm exploration, cultural healing, and collective creation inspired by a shared vision of the future (Isaacs in Banathy 1996, 217), the community is on its way to become one of learning and design.

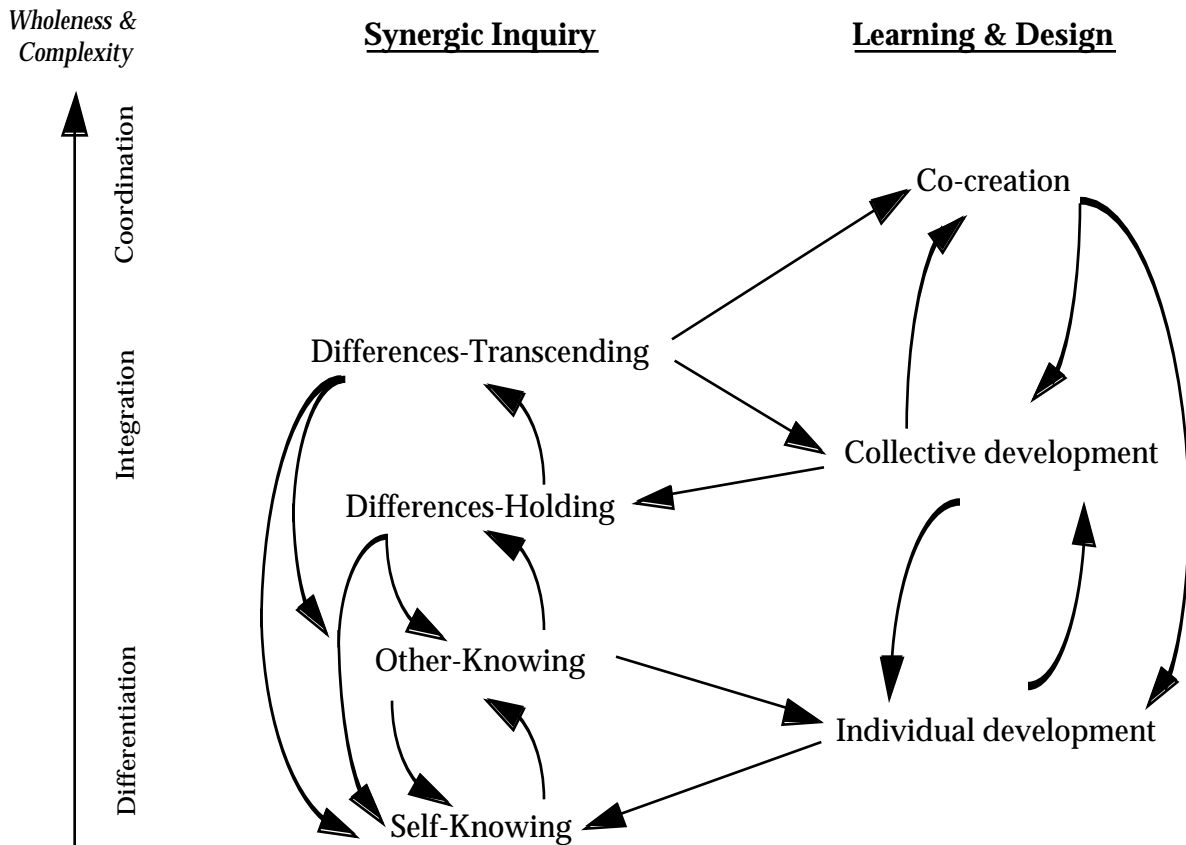
As currently conceived, the generative dialogue phase consists of an open space for interpersonal communication. In contrast, the strategic dialogue phase is supported by the disciplined inquiry of SSD. As such, strategic dialogue is much more robustly supported than is generative dialogue. Nevertheless, without effective generative dialogue the group will not be prepared to deal with the strategic issue of learning and designing together. In my experience of working with various forms of community, the generative phase is successful only some of the time — that is to say, it is not always possible to build community and move forward with a common

purpose. Creating community requires both processes of divergence (such as exploration of the different values, points of view, ideas, and experiences of the members of the group) and processes of convergence (such as co-creation of shared vision and values and agreement on next steps). Sometimes it is difficult to engage fully in the processes of convergence since those of divergence involve chaos, uncertainty, and in some cases, even discord.

Until recently, efforts to create the conditions for the emergence of ELC have lacked a formal methodology of generative dialogue for developing the basis of community (A. Laszlo 1996). With the incorporation of Synergic Inquiry (SI) (following Tang 1997), it has been possible to redress this deficiency. SI is a process that facilitates the interpersonal expansion of consciousness and promotes differentiation and integration — core phases in evolutionary dynamics. Methodologically, it can be considered a tool for guiding open communication that facilitates the consolidation of a group as an authentic community. As such, it has the potential to provide a facilitative framework for generative dialogue in much the same way that social systems design supports the disciplined inquiry of strategic dialogue.

SI involves two phases of differentiation: self-knowing and other-knowing; and two phases of integration: differences-holding and differences-transcending (Tang 1997, 16-17). It is conceived as a process for the expansion of consciousness that facilitates the transcendence of differences in order to reach deeper levels of understanding, respect, and collaboration. What is most interesting in the SI framework is that it presents a way of understanding those aspects of divergent and convergent processes in a group dynamic that are required for becoming an authentic community. Understanding how individuals in a group differentiate and integrate to form community — in a reflective and metacognitive process — can facilitate a path of transcendence by creating the conditions for coordinated action through collaborative learning and design.

The relationship between the SI and the learning and design processes is represented in Figure 2, below. The arrows indicate relationships of cross-catalysis: for example, other-knowing catalyzes self-knowing and vice-versa, in that other-knowing is like a window to perceive the possibility of different ways of being in the world, while self-knowing is like a mirror to comprehend one's own values and assumptions. In open and trustful interactions, the tendency is toward differences-holding since a better understanding of similarities and differences enhances ability for further empathy and understanding. The same is true at the next level: our ability to empathize with others and our willingness to learn with and from others tends toward a state of synergic integration that transcends the individuals involved — it is a way of being in the world that is more than either individual could realize on their own or through a mere mixing together of their perspectives. That is why differences-transcending is not a matter of either compromise or simple collaboration. It offers a new way of learning — and of becoming — with the world.



**Figure 2. Synergic Inquiry and the process of Learning and Design**

The willing adoption of a learning orientation is an essential element of SI. The realization of individual potential affects and is affected by both self- and other-knowing. Likewise, collective development occurs when we are not only willing to suspend disbelief of the views and ways of the other, but when we are truly willing to embrace the other and work and learn with them. It is only when we transcend our differences, through collaboration, communication, empathy, and trust — when we are ready to co-create — that we can begin to design new types of relationships, new ways of being and becoming, and new ways of living. To seek the transcendence of our differences and to promote co-creation is a path toward higher complexity and wholeness. It is a syntony quest, that is, a creative aligning and tuning with the evolutionary processes of which we are a part, and as such, a contribution to the evolution of consciousness and the creation of new possibilities for the future. This is lifelong learning. In face of the planetary challenges of our time, this is our extraordinary common quest.

## The Syntony Quest

Erich Jantsch considers syntony as “inquiry at the evolutionary level par excellence” (1975, 103). He describes this inquiry as the process of cultural organization which “may be helped in

an evolutionary sense by furthering cultural differentiation, a pluralism of as many ideas, life styles, and world views as possible.” He adds that “the invention and introduction of new forms of cultural organization ought to become increasingly a matter of conscious design” (Jantsch 1975, 260).

According to Webster’s Unabridged Dictionary (1976), syntony can be defined as “in radio, resonance,” while ‘to syntonyze’ is “to tune or harmonize with each other.” In the context of ESD, syntony can be thought of as evolutionary consonance — the occurrence and persistence of an evolutionarily tuned dynamic regime. It therefore connotes the embodiment and manifestation of conscious evolution through a purposeful creative aligning and tuning with the evolutionary flows of our milieu. ESD addresses this challenge by seeking to provide a means by which to learn to consciously tune in to the general evolutionary forces that shape us as we shape them. As Jantsch puts it, “we shall have to learn now to design systems of syntony” (Jantsch 1975, 270).

As a creative aligning and tuning with the evolutionary processes of which we are a part, syntony involves listening to the rhythms of change and learning how to play our own melody in harmony with the larger piece [as in piece of music, piece of the whole, and peace]. It is finding and creating meaning and evolutionary opportunity, both individually and collectively. ESD is a means for the cultural differentiation and purposeful transcendence of social systems through convergent evolutionary pathways.

The background against which systems of syntony emerge is the broader frame of evolutionary change that embraces living systems here on Earth just as much as it does all other patterns of transformation in our cosmos. Healthy and vibrant earthly ecosystems are characterized by communities of beings that interact with each other and with their embedding environment with high degrees of syntony. For human beings, these are the ELCs that manifest as sustainable communities.

The paper I delivered last year at the 43rd Meeting of the ISSS was dedicated to an exploration of Syntony as an Organizing Force in Societal Evolution, and so I will not go into further discussion of this issue here. Suffice it to recall the section in which I presented how the renown anthropologist, Ruth Benedict (1970), used the notion of synergy to identify cultures that essentially promote syntony versus those that don’t.<sup>1</sup> Her research indicated that societies that are organized so that an individual, in one act, can serve both his or her own advantage as well as that of their community are the product of cultures with a high degree of synergy. Benedict found that “low synergy” societies are insecure, arrogant, and low in morale, while “high synergy” societies are secure, benevolent, and high in morale.

So how do we move from lower synergy to higher synergy states? By drifting? By letting things just be? No. It requires conscious effort to live in syntony with all with which we interact. At least it does to begin with. Through the acquisition of evolutionary literacy and the eventual attaining of evolutionary competence, the background of purposeful learning and the foreground of intentional action blend in a seamless flow of becoming with one’s world. This dance of learning and applying fosters the conditions that ESD give rise to the successive emergence of

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<sup>1</sup> While she does not use the term “syntony,” it captures much of what she describes.

communities of syntony, social systems of syntony, and eventually entire ecosystems of syntony, as described in the subsequent section.

Through a praxis based on recognition of the way in which the methodological constructs of SSD complement the theoretical constructs of GET, ESD provides the means by which sustainable transformative change in sociocultural systems can be purposefully carried out. The implementation of this complementarity result is an ESD praxiology that confronts the challenges posed by the purposeful stewardship of Earth's life support systems. The emergence of this area of disciplined action-inquiry serves to enable evolutionary systems designers to align the systems they create with the dynamics of civilizational change and the patterns of sustainable evolutionary development. This is purpose of Evolutionary Systems Design.

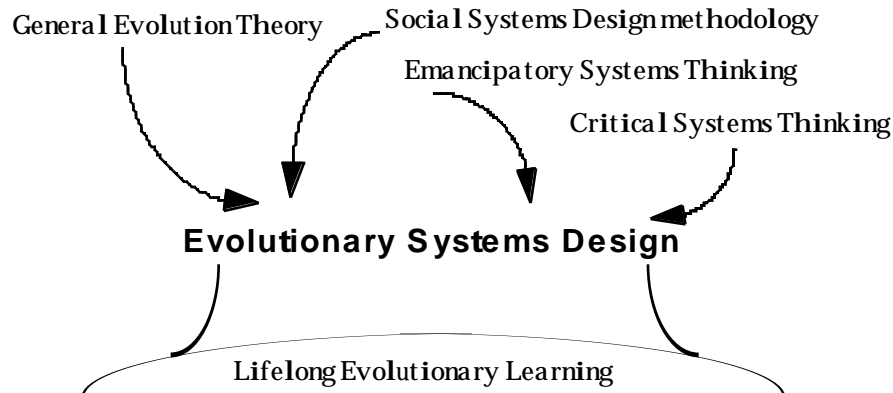
## **Evolutionary Systems Design**

It is possible to extend the rich and robust methodological platform offered by SSD to incorporate a normative evolutionary perspective. Drawing on both SSD and GET, ESD can be conceived as an approach for learning about evolution and acting accordingly. As a species, our actions and interventions on this planet have been largely driven by chance and, at best, '20/20 hindsight.' However, as Margaret Mead noted, we are at a point where for the first time in human history, we are able to explain what is happening while it is happening (in Montuori 1989, 27). ESD builds on this relatively new meta-reflective competence by serving as an instrument for the evolution of consciousness and for conscious evolution. It suggests that with the new understanding of evolutionary dynamics and effective approaches to the participatory design of social systems, our species can stop drifting upon the currents of change and begin to adjust its sails in view of sustainable evolutionary futures. "As evolution becomes history, it can become conscious. As Jonas Salk put it: conscious evolution can emerge from the evolution of consciousness — and from the consciousness of evolution" (E. Laszlo 1996, 139). This is the understanding upon which ESD has been conceived.

While SSD can be characterized as a form of soft systems thinking primarily serving Habermasian practical interests (Jackson 1991), ESD is conceived as an attempt to evolve SSD into a form of critical systems thinking by also serving an emancipatory interest. This means that ESD draws from wellsprings of soft systems thinking, critical systems thinking, and emancipatory systems thinking in addition to GET and lifelong evolutionary learning orientations. The result is a humanistically oriented systems approach comprised of a meta-methodology that facilitates the critical application of various systems perspectives to real-world situations (Laszlo & Krippner 1998, 59).

Much as with TSI (Total Systems Intervention, *cf.*, Flood & Jackson 1991), those engaged in ESD must select or design appropriate approaches for addressing their particular purposes. Rather than consider the application of ESD on philosophical grounds, designing communities face practical challenges for socio-ecological survival and must learn to move "toward what will work to provide answers where no reliable guides exist" (Salner 1996, 8). This does not mean that ESD is methodologically eclectic or that it disregards the need for a coherent body of theory to inform its practice. By empowering evolutionary agents neither as activists nor as theorists,

but as a synthesis of the two, it offers a way — an integral path — for human becoming in partnership with Earth. Figure 3 illustrates the key conceptual influences upon ESD.



**Figure 3. Conceptual Influences on ESD**

Evolutionary learning is a core aspect of ESD. Recent development of an operational learning framework for the stages through which individuals and groups pass as they become evolutionary change agents has provided a scaffolding for Evolutionary Systems Designers (ESDoers) to gauge their progress (A. Laszlo 2000). The four stages and their corresponding objectives are:

- 1) Evolutionary consciousness: To create an awareness of the evolutionary history, of the changing conditions of change, and of the challenges that sustainable human co-habitation with life on Earth entails.
- 2) Evolutionary literacy: To develop a basic scientific understanding and an empathic appreciation of the challenges facing humanity that is both personally significant and societally attuned.
- 3) Evolutionary competence: To gain a sense of responsibility that is coupled with the change management competence of *responsibility* so that we can affect purposeful, positive, evolutionary change in the communities within which we work, play, and learn.
- 4) Evolutionary praxis: To learn how to become catalysts for change by learning what modes, methods, and means are best for clearly articulating and effectively communicating to others the need for change.

Various thinkers have identified complementary learning objectives relevant to the creation of sustainable and evolutionary futures: Donald Michael's (1973) psychological barriers to be overcome for future oriented societal change; C.A. Bower's (1993) educational changes for embracing sustainability; Alfonso Montuori's (1989) ideas on the creative elicitation of the future; Dean Elias's (1997) learning for expansion of consciousness; Lester Milbrath's (1989) learning tasks for a sustainable society; and Robert Ornstein's (1991) and Ornstein and Ehlich's (1989) ideas on conscious evolution. By drawing on the orientations put forth by these thinkers, and infusing them with Bela Banathy's (1996) agenda for evolutionary learning, it is possible to present some of the key heuristic foci of the ESD agenda implicit in the above mentioned four stage learning framework:

*Learning for Evolutionary Consciousness*

Values are the focal point of this learning stage. “How is the world changing and what part can I play in the process?” are the sort of value-related questions that ESDoers can address through the types of dialogue encouraged by SI and SSD conversation dynamics. ESDoers need to make their values and worldviews explicit. They do so by examining how their values have been shaped by conceptual frameworks that influence human/habitat relationships, and by exploring with, and being open to learning from, others about the values necessary for the co-creation of sustainable and evolutionary futures. This learning stage, therefore, requires an understanding of the ever-changing global problematique; the exploration of perennial values (such as cooperation, trust, love, respect, harmony, and the appreciation of diversity); the development of an evolutionary ethic (including self-realization, social, and ecological ethics); and the fostering of a partnership model of human interaction, emphasizing *cooperation* over *competition*, *linking* rather than *ranking*, and *power to* instead of *power over*. The development of an evolutionary consciousness involves the expansion of our sense of self to include the natural and physical environment. It provides a ‘bird’s-eye view’ of our evolutionary story by which to see issues of where we are coming from and where we are going in a more holistic, global, and inclusive perspective. Learning how to create the conditions that foster such a consciousness — in ourselves and in others — provides a path by which we may realize the evolutionary opportunities ahead of us.

*Learning for Evolutionary Literacy*

Understanding is the focal point of this learning stage. With the awareness and empathic appreciation of their role in the evolutionary journey that they acquired at the previous stage, ESDoers are now ready to build a conceptual platform to support informed evolutionary action. Systems thinking — involving the capacity to grasp complexity, connectedness, interdependence, wholeness, embeddedness and entanglement — is a basic element of evolutionary literacy. In addition to an appreciation of our evolutionary history, evolutionary literacy involves the acquisition of basic GET concepts such as steady state, bifurcation, irreversibility, and notions of systemic convergence onto higher levels of organization and complexity. This knowledge serves as a conceptual toolkit from which ESDoers draw to bolster their conviction that change is possible and that humans can play an evolutionary role in the stewardship of life in partnership with Earth. Anticipatory thinking and the consideration of the long-term consequences of our actions are part of evolutionary literacy. An understanding of the isomorphic nature of evolutionary dynamics can catalyze the move from anthropocentric to ecological and evolutionary ways of being and becoming with the world.

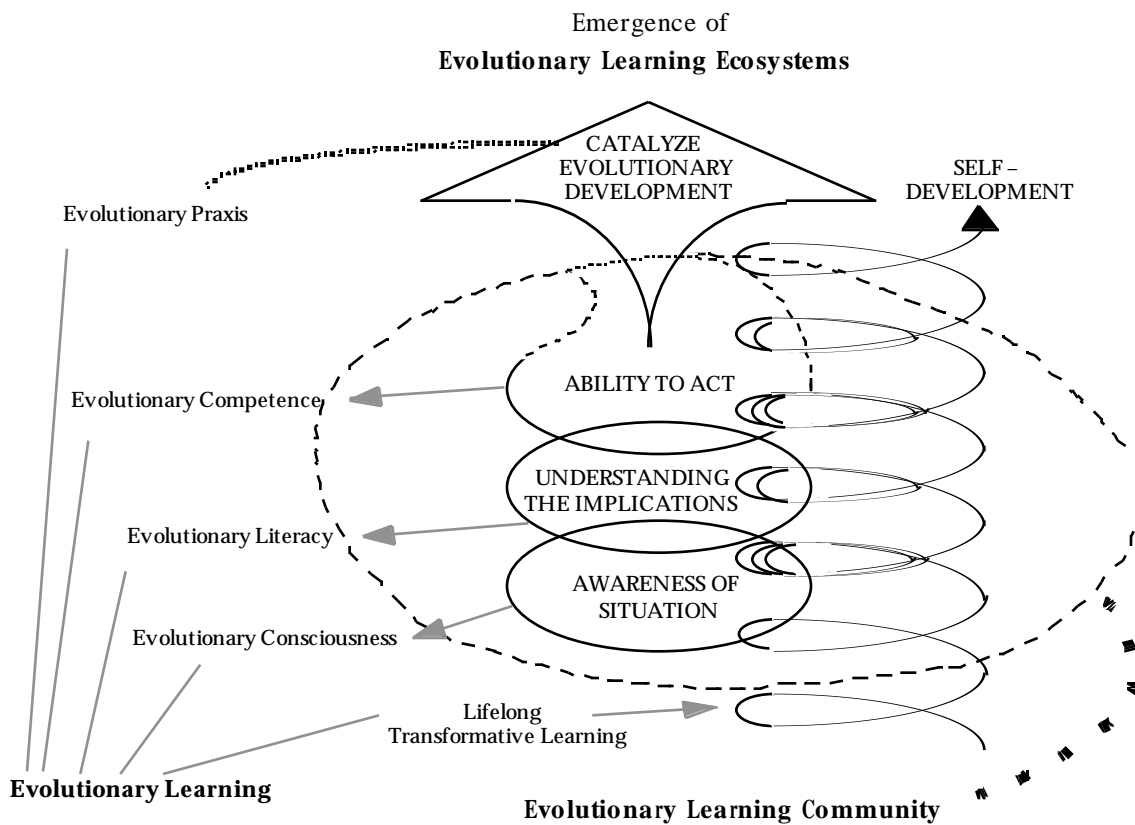
*Learning for Evolutionary Competence*

Abilities are the focus of evolutionary competence, especially as concern the competencies required for social systems design. As Kenneth Boulding admonished, “intentions are fairly easy to perceive, but often do not come about. Design is hard to perceive. But it is design and not intentions that creates the future” (in Banathy 1996, 71). This sentiment could be paraphrased in terms of ESD in the sense that while evolutionary consciousness and evolutionary literacy may elicit good intentions, it is evolutionary competence that empowers people to act on those intentions. ESD involves learning to think together about our values and to use the resulting understanding to co-create pathways for sustainable socio-ecological emergence. Design competence enables people to participate in the creation of a shared image of a sustainable and

evolutionary future and to bring that image into being. The challenge is to find practical ways of living in harmony with nature; to learn to live lightly, meaningfully, and simply in and with Earth, and to realize an extended sense of identity that embraces the world in enlightened self-interest.

*Learning for Evolutionary Praxis*

Action is the focus of evolutionary praxis. ESDoers become evolutionary change agents through the previous stages of lifelong evolutionary learning. At this stage, they are able to translate their awareness, understanding, and ability into evolutionary action in whatever they do. Evolutionary praxis follows the guidelines of a syntony quest, as outlined in the previous section. It involves acting, day by day, on the knowledge acquired through the three previous phases and following Gandhi’s exhortation to be the change one wishes to see in the world. Usually, this means working with others toward the conscious realization of evolutionary living and learning and the co-creation of sustainable systems of syntony. As evolutionary change agents, ESDoers catalyze evolutionary development in individuals and groups and often work toward fostering healthy socio-ecological communities. The four stages along the ESD path of lifelong evolutionary learning can be illustrated like this:



**Figure 4. The Evolutionary Learning Framework of ESD**

The ESD orientation to future creation is essentially possibilistic. It assumes that human beings have the choice consciously to participate in the co-creation of the future. And yet it seeks

neither to predict nor to ‘socially engineer’ the future. Rather, it seeks to create the conditions for the emergence of sustainable and evolutionary futures.

“In systems such as contemporary society, evolution is always a promise and devolution always a threat. No system comes with a guarantee of ongoing evolution. The challenge is real. To ignore it is to play dice with all we have. To accept it is not to play God — it is to become an instrument of whatever divine purpose infuses the universe” (E. Laszlo 1996, 139).

The aphorism that captures the spirit of ESD is one of flow: we cannot direct the wind, but we can adjust the sails. Learning to sail the currents of evolution — not just to ‘go with the flow’ but to become active participants in the journey — this is at the heart of the ESD.

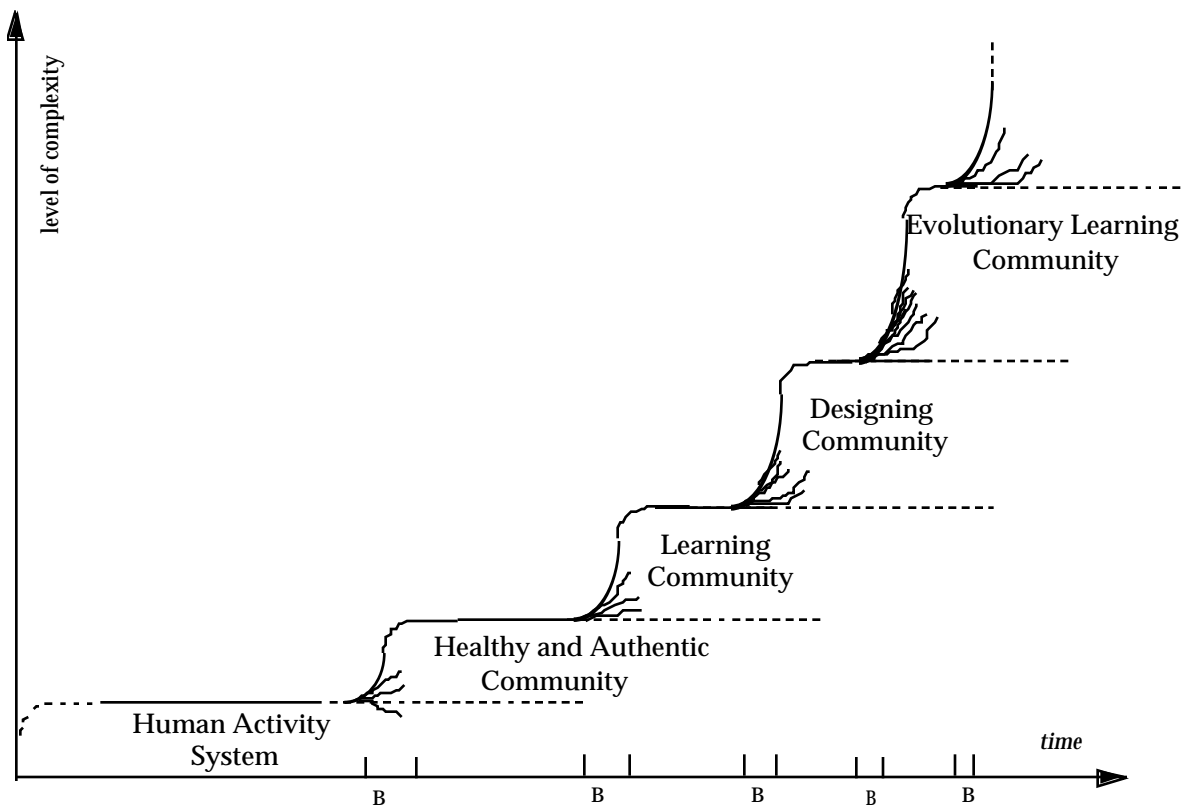
## **A Vision of the Future**

By seeking to combine the ecosystemic, societal, and personal aspects of sustainable evolutionary development, and seeking a praxis with which to concretize our emerging ESD platform, ESD converges on ELC. Through ELC, ESD fosters evolutionary learning community by seeking to facilitate the evolution of healthy and authentic community, through anticipatory design, so that it may serve as the vehicle through which we participate in the creation of sustainable and evolutionary futures. Evolutionary learning community can be considered a form of healthy and authentic community — one with an evolutionary attitude that reaches beyond the sociosphere.

As illustrated in the diagram below, the evolution of evolutionary learning community is a purposeful process that starts with the creation of a Healthy and Authentic Community from any Human Activity System that is a willing participant in the design process.<sup>2</sup> The formation of a Healthy and Authentic Community is facilitated by the generative process of Synergic Inquiry and creates the appropriate context for collaborative learning and design. When the community is ready to make the commitment to become a Learning Community, the members engage in a process of learning-how-to-learn that includes the development of evolutionary consciousness and evolutionary literacy. By subsequently developing evolutionary competence, the learning community can design itself into a Designing Community capable of continuous autopoietic re-creation as a community. This process of evolutionary learning creates the conditions for evolutionary praxis. Through the integration of ideals and actions, the individuals and the community become fully empowered as stewards of their ongoing evolution. The evolutionary path from Healthy and Authentic Community to Evolutionary Learning Community can be represented as follows:

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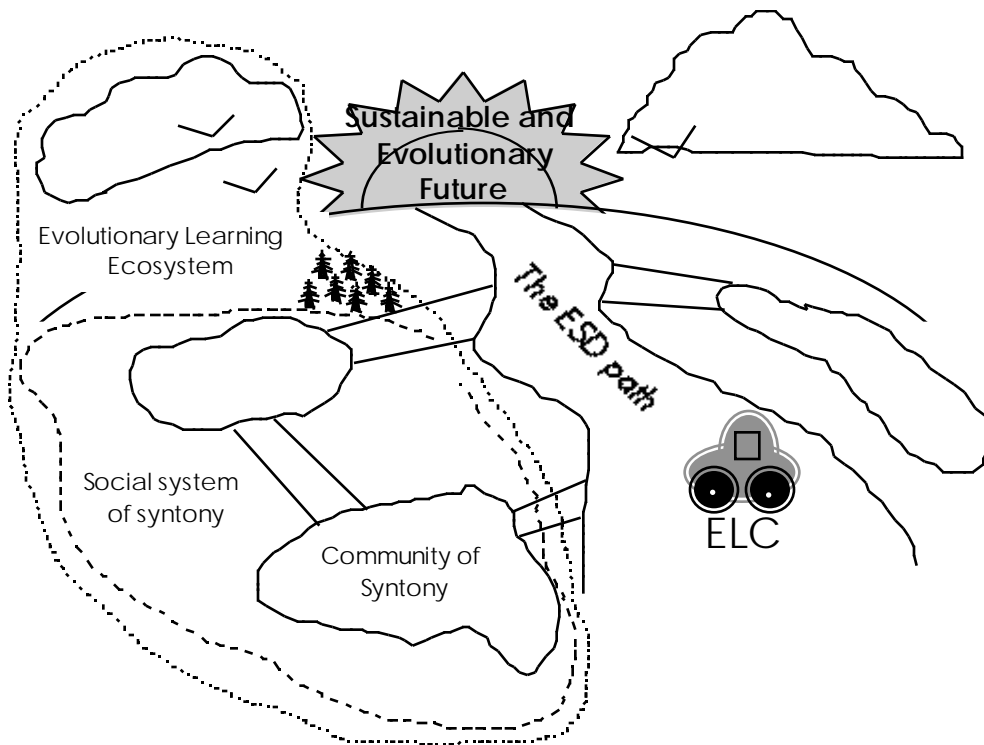
<sup>2</sup> The notion of a Human Activity System is part of the Soft Systems approach as developed by Peter Checkland in the early 1980s. Healthy and Authentic Community is a concept developed by Banathy that poses the challenge of how to translate the powerful ideas of true community into our everyday lives in ways that are fundamental and true.



note: B refers to Bifurcation

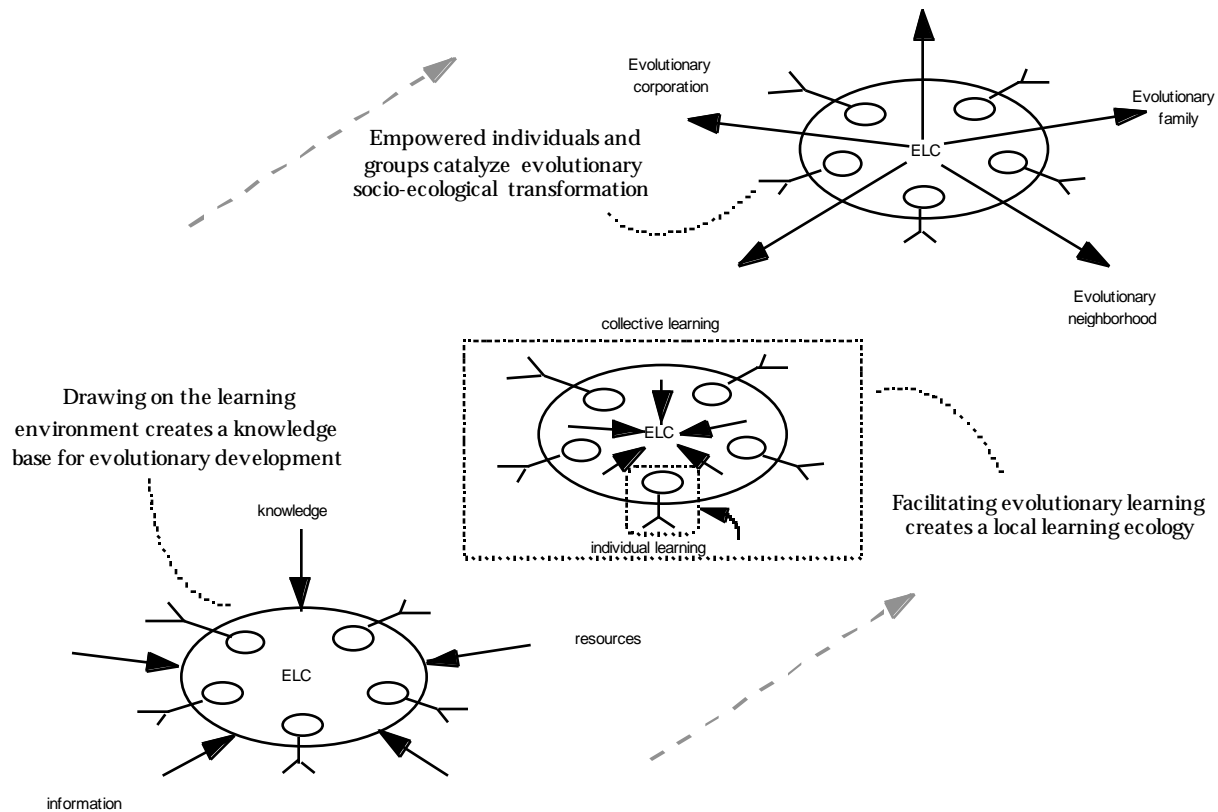
**Figure 5. The evolution of Evolutionary Learning Community**

Because of their emphasis on learning and applying in real-world contexts, ELCs serve as the catalyzers other systems of syntony. As mentioned earlier, these range from communities of syntony, to social systems of syntony, and eventually to entire ecosystems of syntony. Figure 6 portrays how ELC serves as the vehicle for the generation of these additional stages. The first type of ELC is the community of syntony. Such communities are dedicated to learning how to learn and consciously seek to do so in ways that are evolutionary. At the next level, social systems of syntony are formed from various sorts of individual ELCs, each collaborating to create a subculture of syntony. Those social systems of syntony that have developed their full evolutionary potential have attained a degree of evolutionary competence that permits them to engage with their more-than-human world in the creation of greater ecosystems of syntony. These form evolutionary learning ecosystems, or ELEs, for short.



**Figure 6. Nested Systems of Syntony**

Groups of people engaged in purposeful ESD form an evolutionary learning community, and such communities can foster the emergence of other systems of syntony. At the level of the ELE, people no longer ‘come first’ — the whole ecosystem comes first. All aspects of the ELE, from psycho-personal and socio-cultural to bio-physical and process-structural — all are ‘actors’ with a voice in the creation of evolutionary consonance or syntony (*cf.*, A. Laszlo 2000). All listen to and create with one another. These ELEs are, of course, communities as well; ones in which people act as stewards of their own futures in syntony with their dynamic surroundings. Figure 7 depicts how ELC facilitates the emergence of systems of syntony within and beyond itself.



**Figure 7. The Process of ELC Empowerment**

By manifesting an evolutionary consciousness, ELCs are embodiments of syntony. They draw on an expanded conception of self that leads to the empathic identification with others — including non-human others. Such an inclusive self-concept fosters understanding and love for other people, species, and future generations. It helps us learn to ‘think like a mountain,’ in Aldo Leopold’s wonderful phrase. Evolutionary consciousness of this sort creates less need for ethical guidelines on protecting and preserving nature — it would be just natural to do so. This kind of thinking leads to actions that are empathetic and inclusive, giving voice to such sentiment as Seed once showed: I’m not working to protect the rainforest, I’m part of the rainforest, in human form, protecting itself. To be human and to express such more-than-human identity and volition creates the conditions for an ethic of appropriateness, and marks a state of consciousness that is truly evolutionary.

ESD provides a clear presentation of the importance of learning for the purposeful design of the future. As an approach for realizing the vision of a sustainable and evolutionary *learning* society, ESD offers a means of recreating the ancient Greek ideal of a *paidea* — a society where the promotion of lifelong learning and the achievement of the human potential in the broadest sense is a central priority (Milbrath 1989, 94). The *paidea* of the future are social systems of syntony where the educational vehicle for facilitating evolutionary learning and transformation is the ELC.

## Conclusion

GET provides us with an lens through which to focus on patterns of change; it invites us to appreciate our part in the creative process of the universe. SSD provides us with a tool for shaping the systems in which we work, learn, and live; it empowers us to be proactive participants in the creative transformation of our social world. By blending these two frameworks, ESD provides a path for transcending problems and embracing opportunities in an age when the overwhelming complexity of contemporary global challenges could leave us without much hope for the future. A successful evolutionary future in partnership with Earth depends on our capacity to hold the creative tension between our ideal images of the future and our crude present realities without either sliding into fatalistic pessimism or wishing it away with a wave of utopian optimism:

Pessimism is premature; optimism is naive. Voltaire was right: the optimist believes that we have the best of all possible worlds, and the pessimist is afraid that this is true. Neither does anything about it — the one because nothing *needs* to be done about it, and the other because nothing *can* be done. (E. Laszlo 1996, 140)

ESD provides a possible path to avoid the pitfalls of pessimism and optimism and to face the challenge of envisioning and designing evolutionary futures while keeping our feet planted firmly in pragmatic reality. Through a shared syntony quest, the co-creation of a sustainable and evolutionary future in partnership with the life support systems of planet Earth can be achieved — not as a destination but as an ongoing design journey of lifelong learning, being, and becoming.

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