

## Frank Barron's Ecological Vision

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The work of Frank Barron already occupies a crucial position in the context of creativity research. In this chapter I argue that there are nevertheless major aspects of Barron's thinking that have been largely overlooked and deserve great attention. The Institute of Personality Assessment and Research (IPAR) findings and other research associated with Barron have generally been incorporated into the larger body of creativity research in a more or less piecemeal fashion, with less relevance placed on the fact that Barron's work has in fact sketched the outline of an extremely important new perspective on creativity, creativity research, and a new understanding of the person, one which is explicitly *systemic* and *ecological*.

Barron (1988, p. 80) defined creativity very broadly as the capacity to bring something new into existence:

Creativity is an ability to respond adaptively to the needs for new approaches and new products. It is essentially the ability to bring

something new into existence purposefully, though the process may have unconscious, or subliminally conscious, as well as fully conscious components. Novel adaptation is seen to be in the service of increased flexibility and increased power to grow and/or survive.

The ability to bring something new into existence does not occur *in vacuo* but always within a context. For Barron, "the psychology of creativity has been in my own mind a forerunner of an ecological perspective on consciousness" (1972b, pp. 107-108). Drawing on such diverse holistic influences as Gestalt theory, and the work of Teilhard de Chardin, William James, Henri Bergson, and W. B. Yeats, Barron pioneered an ecological understanding of the person and of the creative process, which in 1972 he made explicit in his call for the development of an *ecology of consciousness*.

Barron explained that "The way in which both individual and collective consciousness relate to another and to the physical and biotic environment is the subject matter of the ecology of consciousness" (1972b, p. 97).

His approach was clearly systemic, influenced by both biology and the Gestalt psychologists:

Ecology as a branch of biology deals with the interrelationships between plants and animals and their complete environments. Consciousness refers to the mysterious fact that this primarily material universe somehow evolved the capacity to be aware of itself, and even to be aware of its own awareness, the peculiarly human distinction. The ecology of consciousness, then, must deal with the complete environment that Man experiences and with the interrelationship between structure and process in it that condition consciousness. (1972b, p. 96)

This also implies a holistic approach to research, including, therefore, conscious *and* unconscious, subjective and objective, social *and* psychological processes.

An important part of Barron's work focuses on the research data showing that creative individuals have been found to have certain characteristics or traits that differentiate them from less creative persons (Barron, 1963/1990). These include tolerance for ambiguity, complexity of outlook, independence of judgment, and a degree of androgyny. Barron in effect argues that the characteristics of creative people work together to create a psychic environment that is very "fertile" and much more open to creativity, innovation, and change. His concept of "psychomass," derived from the ecological term *biomass*, points to the potential fertility of a mental ecosystem and its potential creativity (1972b).

Creativity cannot be forced, but the psychological conditions can be made right for a flowering of creativity. Seen together, the traits

discussed by Barron form the basis for a creative psychological ecology, one which will allow for the *emergence* of new ideas and perceptions as opposed to the repetition of old ones. (See McCarthy, this volume, for an original discussion of this process.)

Barron's approach to his subject matter has always been evolutionary in nature. "My own basic interest in research on creativity," he stated in 1963, "stems from the hope it offers that one may find in psychic creation the same formal variables that can be used to describe creative process in all of nature. Psychic creation is simply a special case which gives you entree into the problem" (Taylor, 1964, p. 113). In fact, Barron's work outlines the isomorphisms among the biological, mental, and social characteristics of systems that foster creativity.

Barron's approach is not reductionistic. It does not attempt to reduce psychological phenomena to biology or social phenomena to psychology. Rather, in the fashion of General Systems Theory, he attempts to understand the underlying patterns that are shared by all phenomena at various levels of complexity (e.g., Laszlo, 1972a, 1972b; von Bertalanffy, 1968, 1975). I focus in this chapter on establishing some of the connections and patterns Barron points to at the biological, psychological, and social levels.<sup>1</sup>

### BEYOND HOMEOSTASIS AND MECHANISM

From the beginning, Barron moved away from a mechanistic, reductionistic conception of the person, such as could be found in behaviorism, to a more organic one. A machine is of necessity created by somebody outside of it, and likewise creativity, viewed from a mechanistic perspective, must eventually call on an outside source of "inspiration" that is not inherent in the person. In behaviorism this was the inevitable "stimulus," which was never qualitatively defined, hence, perhaps behaviorism's inability to deal with creativity and the persistence of a dichotomy between the pedestrian stimulus-response explanations of behaviorist psychologists and the mystified theorizing of laypeople about inspiration.

Barron's organic approach has viewed creativity as something inherent in the larger feedback loop of self and system, part of the autopoietic (self-creating) tendency of life (Maturana & Varela, 1987), requiring the development of the correct social and psychological matrix of personality, the fertile soil that allows novelty to appear as an emergent property. Summarizing his research in 1964, Barron stated that his findings offer:

<sup>1</sup>A further project, extremely ambitious in nature but certainly worthwhile and implied in Barron's work, would involve attempting to draw on the psychology of creativity to shed light on biological evolution.

serious challenge to the concept of homeostasis, which posits a basic conservative tendency in organisms, a disposition to adopt patterns of behavior that are effective in reducing the need for counteraction. If homeostasis were the rule, organisms would act always in such a fashion as to produce an equilibrium psycho-physiologically. But these observations point to the need for more complex and inclusive formulation. There seems to be an essential and continuing tension between the maintenance of environmental consistencies and the interruption of such consistencies in the interest of new possibilities of experience. (Barron, 1964, pp. 80-81)

This new input, brought about by self-generated interruption of consistencies, brings internal (psychological) diversity and heterogeneity.

Barron (1972b) wrote that one may conceive of a human being as "a dynamical natural system, bounded yet open, that is in a continual state of disequilibrium" (p.111). In light of the work of Prigogine, Jantsch, and others, such a system would now be referred to as a self-organizing dissipative structure, an open system that can survive only through a constant exchange of matter/energy and information with its environment. Such an open system is stabilized by its flowing, but it is only relatively stable. The stability is relative to the constant matter/energy and information flow. Without the constant input a system would die; too much input can overwhelm the system and drastically change it (Briggs & Peat, 1984; Guidano, 1987; Jantsch, 1980; Laszlo, 1987, 1992; Prigogine & Stengers, 1984).

In mental ecologies there is a considerable amount of complexity arising out of the self-reflective capacity that biological systems such as cells presumably do not share. The human capacity for self-reflection allows human systems to consciously operate on themselves and on their maps of the world. They create a mental ecology, an ecology of mind, in Bateson's (1972) terminology, and a representation of the world on which they act. Creative individuals allow themselves to become disorganized by constantly challenging the assumptions of their models of themselves and the world. They disturb their mental equilibrium—and consequently tend to score higher on some measures of psychopathology, because they may be periodically "unbalanced"—and yet can return to a dynamic stable state, scoring unusually high on ego-strength.

Creative individuals constantly renew themselves by remaining open to input that may force them to reconsider set ways of doing and thinking: "The creative individual is one who not only attempts complex solutions of problems external to himself through special attention and preference for apparent disorder, but also attempts to create himself through commitment to a complex personal synthesis" (Barron, 1963b, p. 158).

Increased autonomy and differentiation goes hand in hand with greater instability and openness and a loosening of the boundaries

between what is inside and what is outside. In a process world view (such as evolutionary systems theory or Buddhism) there is really no "inside" or "outside."

Systems philosopher and evolutionary theorist Ervin Laszlo (1969) wrote:

We must do away with the subject-object distinction in analyzing experience. This does not mean that we reject the concepts of organism and environment, as handed down to us by natural science. It only means that we conceive of experience as linking organism and environment in a continuous chain of events, from which we cannot, without arbitrariness, abstract an entity called "organism" and another called "environment". The organism is continuous with its environment, and its experience refers to a series of transactions constituting the organism-environment continuum. (p. 21)

This perspective on selfhood and autonomy is of great interest because it views growth not as not as a separation or abstraction from the environment, but as a greater awareness of systemic embeddedness and openness to process, paradoxically coupled with greater differentiation. This openness and flexibility plays a crucial part in the development of an "interior ecology", a psychomass that proves fertile and rich and thus capable of generating new ideas and making new connections. A closed, rigid system inevitably has fewer connections and provides a less fertile psychomass:

When the distinction between subject (self) and object is most secure, this distinction can with most security be allowed to disappear for a time (mysticism, love). This is based on true sympathy with the not-self, or with the opposite of the things which comprise defensive self-definition. (Barron, 1963/1990, p.159)

The crucial factor is that the greater the complexity of any system, the greater its interdependence with its environment. As Bateson (1972) illustrated, this is a profoundly counterintuitive notion for the individualist West:

Now we begin to see some of the epistemological fallacies of Occidental civilization. In accordance with the general climate of thinking in mid-nineteenth-century England, Darwin proposed a theory of natural selection and evolution in which the unit of survival was either the family line or the species or subspecies or something of the sort. But today it is quite obvious that this is not the unit of survival in the real biological world. The unit of survival is *organ-*

*ism plus environment*. We are learning by bitter experience that the organism which destroys its environment destroys itself. If, now, we correct the Darwinian unit of survival to include the environment and the interaction between organism and environment, a very strange and surprising identity emerges: *the unit of evolutionary survival turns out to be identical with the unit of mind*. (p. 483) (Italics in the original).

Barron's concept of ego-strength reflects an understanding of the healthy individual as someone who is secure enough to be open, fundamentally organized enough to become temporarily disorganized, sure enough in him- or herself to have beliefs and identity shaken and indeed profoundly questioned and changed. Creative individuals thrive on this process, this dialectic of destruction and creation. Identity and psychological growth involve not a hardening of boundaries, a rigid, unyielding ego, but an ability to immerse oneself in the world, even lose oneself in it, and then come back. From Barron's perspective, the dichotomy between individual and society, self and system, is the product of a static, either/or viewpoint: It is replaced by a process in which an ongoing dialectic leads to alternating periods of innocence and experience, self-dissolution and self-creation (Barron, 1964, 1969, 1975, 1979, 1963/1990, 1995).

The ecological approach to the self therefore recognizes the interconnectedness between self and environment and attempts to discover isomorphisms between them. These isomorphisms between systems at the biological, mental, and social level (together making up this systemic and ecological concept of "mind") can shed light on the evolutionary process and assist in the development of a more integrated, holistic, and interdisciplinary research approach than the one offered by the fragmented approach of reductionism and methodological individualism. A conception of creativity based on such a systemic understanding of self and system will also have markedly different implications than an excessively individualistic understanding of creativity, which often sees the individual as locked in a struggle for dominion with the environment (Montuori, 1989).

#### THE CHALLENGE OF COMPLEXITY, CHAOS, AND DYNAMICAL SYSTEMS

"At the very heart of the creative process," wrote Barron (1963/1990, p. 249) "is this ability to shatter the rule of law and regularity in the mind." By remaining open to new input and actively seeking out complex phenomena that cannot be explained, creative persons allow for periodic moments of disequilibrium in order to transform the complex input with which they are faced. Complexity, in this sense, is any information that

does not easily fit into a preexisting order. It is not intrinsic to the phenomenon being observed but in the observing system (Bocchi & Ceruti, 1987).

Barron (1963/1990) found that along with a preference for complexity, creative persons have a preference for asymmetrical forms over symmetrical ones:

Creative individuals have a positive liking for phenomenal fields which cannot be assimilated to principles of geometric order and which require the development or, better, the creation of new perceptual schemata which will re-establish in the observer a feeling that the phenomena are intelligible, which is to say ordered, harmonious, and capable of arousing esthetic sentiment. (1963b, p.155)

Creative individuals favor disorder and complexity, but only because they wish to integrate it into a higher order—yet simple—synthesis. Barron likened their goal to the achievement of mathematical elegance, "to allow into the perceptual system the greatest possible richness of experience, while yet finding in this complexity some overall pattern" (1968, p.199). This constant quest leads to a dynamic, evolutionary process orientation in open systems, as opposed to the static orientation of closed systems. As Teilhard de Chardin (1964) wrote, "complexification due to the growth of consciousness, or consciousness the outcome of complexity: experimentally the two terms are inseparable" (p.180).

Finding the simple overall pattern in complexity is a means to bring meaning to disorder, and it is fundamentally an act of *creation*. As Piaget (1973) put it in the title of one of his books, *To Understand is to Invent*. In this respect it is very much like dissipative structures, reaching out beyond ones own boundaries in self-transcendence, integrating complexity, and achieving higher levels of organization and heterogeneity (Jantsch, 1980).

Discussing an analogous process in natural systems, Laszlo (1987) wrote: "The emergence of a higher-level system is not a complexification but a *simplification* of system function" (p. 25). He suggested that:

Less complex systems on a higher level of organization can effectively control more complex systems on lower levels in virtue of the selective disregard, on the higher, controlling level, of the detailed dynamics of the lower-level units. The selective neglect of irrelevant details is a universal property of hierarchical control systems. (p. 25)

Living systems are self-replicating. In other words, they can replicate the parts that they are made of, as, for instance, human cells do (Csanyi, & Kampis, 1991). Living systems do not just maintain equilibrium through self-replication (or habit-formation in mental ecologies),

they are also self-transcending, as Jantsch (1980) pointed out: "Evolution is basically open. It determines its own dynamics and direction. This dynamic unfolds in a systemic web which, in particular, is characterized by the co-evolution of macro-and microsystems. By way of this dynamic interconnectedness, evolution also determines its own *meaning*" (p. 184; emphasis in original).

The evolutionary process of self-transcendence is fueled by the ongoing dialectic of complexity-simplicity-complexity that is the hallmark of creative problem formation and problem resolution. Creative persons create order in disorder and disorder in order: In Kuhnian terms, they look for the anomalies on the edges of the existing paradigm in order to build a new one. In the process of developing understandings in areas that were previously thought to be out of the bounds of human knowledge (e.g., far-from-equilibrium systems, dynamical systems or 'chaos' theory), creativity is also the creation of meaning, and of a cosmos. Barron (1963/1990) called this the cosmological motive. Discussing creative individuals, he stated that "Very often their work, seen in the perspective of a lifetime endeavor, is itself the creation of a cosmos of their own, as though each mind is progressively unfolding itself as life itself has" (p. 152).

The entire human project, the evolutionary journey, can be seen in this light as the creation of a multiplicity of worlds in space and time, each unfolding through our lives and in our attempts to give meaning to life. A question vital to an ecology of consciousness is how an environment can be created with the capacity to allow for the emergence and coexistence of a plurality of worlds and a plurality of cosmological motives, not just quantitatively (variety) but qualitatively (diversity).

## CREATIVE DYNAMICS AND THE ECOLOGY OF SOCIAL SYSTEMS

Barron suggested that:

The psychological conditions which make a society or an epoch creative and consistently original have been little studied, but it seems that social conditions analogous to those seen in individual creativity are important. Freedom of expression and movement, lack of fear of dissent and contradiction, a willingness to break with custom, a spirit of play as well as of dedication to work, purpose on a grand scale; these are some of the attributes which a creative entity, whether vast or tiny, can be expected to have. (Barron, 1963b, p.152)

A social system that encourages the development of independence of judgment, tolerance for ambiguity, preference for complexity,



and so on, is not simply educating for creativity: Implicit in these traits are also certain relations to authority, and a willingness to question the status quo which will almost inevitably bring about change. The psychological characteristics of creative individuals therefore have considerable sociopolitical implications, and societies (and social systems in general) influence creative development to the extent that these characteristics are encouraged or not.

Suppression of anxiety may be a strong factor in the perceptual decision not to "pay attention" and not to tolerate ambiguity and complexity or to exercise independence of judgment (cf. Barron, 1968; Hampden-Turner, 1971). Barron argued that:

Repression operates in the service of homeostasis, and so serves an economic function that is indispensable in maintaining the organism in an integral form in its environment. However, repression may be so extensive as to become a false economy; when broad areas of experience are lost to consciousness through repression, the ego may be said to be less strong (i.e., less able to adapt) as a consequence. To state the matter positively, ego-strength requires a flexible repression-mechanism so that the person may be said to be optimally open to experience, though capable of excluding phenomena that cannot be assimilated in the structure of the self. (1963/1990, p.133)

Barron (1963a) pointed out that although it is the combination of organization and complexity that generates freedom, organization may "operate in such a fashion as to maintain maladaptive simplicity" (p. 150). He reminded us that in totalitarian systems, as in neurotic individuals, suppression is used to achieve unity. Suppression is appealing because in the short term it seems to work. Barron described this process in terms that show the human dimension of self-organizing dissipative structures, with their bifurcation points at far-from-equilibrium states, at which point the system can move either to a higher or a lower level of complexity:

Increasing complexity puts a strain upon an organism's ability to integrate phenomena; one solution of the difficulty is to inhibit the development of the greater level of complexity, and thus avoid the temporary disintegration that would otherwise have resulted. Freedom is related in a very special manner to degree and kind of organization. In general organization, in company with complexity, generates freedom; the more complex the level of integration, the greater the repertoire of adaptive responses. The tendency toward organization may, however, operate in such a fashion as to maintain a maladaptive simplicity. We are familiar in the political sphere with totalitarian states which depend upon suppression to achieve unity; such states are psychodynamically similar to the neurotic individual

who suppresses his own impulses and emotions in order to maintain a semblance of stability. There are at hand enough case histories of both such organizations, political and private, to make clear that the sort of unity and balance that depends upon total suppression of the claims of minority affects and opinions is maladaptive in the long run. (1963a, p. 150)

The kind of psychological characteristics closed, totalitarian systems (whether at the individual, group, or societal level) have to enforce clearly include conformity as opposed to independence of judgment, intolerance as opposed to tolerance of ambiguity, and simplicity as opposed to complexity. Closed systems strive for simplicity, homogeneity, and equilibrium—characteristics that are the opposites of those found in creative systems, whether biological, psychological, or sociopolitical (Loye & Eisler, 1987).

Barron (1963a) discussed the importance of originality and creativity stating that originality is "measured as to be equivalent to the capacity for producing adaptive responses which are unusual" (p.150). Statistically unusual or infrequent responses, he went on to write, can also be considered a function of "the objective freedom of an organism, where this is defined as the range of possible adaptive responses available in all situations" (p. 150).

In order to represent the increasing complexity creative individuals choose to encounter and integrate, they have to think systemically and have flexibility as a "coding" or interpretive system. Wilden (1987) elaborated Ashby's principle of requisite variety into a principle of requisite *diversity*. Ashby's principle states that if a system encounters greater variety in its environment than it can process, the system's stability is threatened because it will be unable to "reduce, absorb, suppress, or transform the uncoded variety [the noise] that threatens it" (Wilden, 1987, p.190). Wilden's principle of requisite diversity holds that a system has to be able to represent the basic codings of the *types* of variety in its environment, in other words, *qualitative* and not just *quantitative* differences: "Bateson's Rule: In proportion as the structural diversity of a natural or social ecosystem is reduced, so also is its flexibility to survive future environmental uncertainties. Reductions of diversity deplete the ecosystem's resources of uncommitted potential for change" (p. 194).

The uncommitted potential for future change in any system, which Bateson (1972) equated largely with *flexibility*, can, in human systems, be considered to some extent as the degree of creativity inherent in an individual's or social system's ecology. And the characteristics of a creative ecology have been outlined by Barron in terms of diversity, complexity, and heterogeneity, which manifest specifically through the coexistence of a constellation of characteristics, such as independence of

judgment, preference for complexity, and so on. "Novel adaptation," Barron (1988, p.80) wrote, "is seen to be in the service of increased flexibility and increased power to grow and/or survive."

We learn from Post-Darwinian views of evolution, particularly as developed by Stephen J. Gould (1987) and Niles Eldredge (1986), of a shift from evolution as seen in Monod's classical formulation of *chance* (random mutations) and *necessity* (adaptation to the biological and physical environment), to one that sees evolution as the interaction between *constraints* and *possibilities* (Ceruti, 1989). One can draw parallels between this change in our view of evolution and the emergence of a new view of creativity and change. Creativity seen as chance or necessity is akin to the formerly widely held view that creativity is either a serendipitous blessing that afflicts persons randomly or is forced by environmental pressures such as wars, pestilence, personal suffering and misfortune, or a psychological imbalance (e.g., Storr, 1972). This is a form of *replicative* growth, in which creativity is ultimately the result of genetic or social luck of the draw (Barron, 1979). It is also fundamentally a "stick" theory of creativity, whereas Barron, who first recognized the correlation between creativity and psychological health, proposed more of a "carrot" theory (or at least an alternating "carrot and stick" theory), particularly because creative persons seem attracted to complexity, disorder, and change and gain meaning from their ongoing quest. This quest is for wholeness and ultimately expresses itself in the relationship between self and "other", where the "other" may be both intra- and extrapsychic (cf. Barron, 1975).

The neo-Darwinian view saw evolution as a product of genetic mutation, with the environment acting as a source of natural selection of the fittest, weeding out the unfit mutations (e.g., Campbell, 1960). It seems though that complex systems show degrees of spontaneous order and self-ordering properties that cannot be interpreted solely as the product of natural selection (Pagels, 1988). Adaptation is now beginning to be seen not as the result of a cause in the environment determining a change in the organism, but rather as the organism's active answer to *perceived* constraints in the environment (Ceruti, 1989). In Barron's terms, it is the result of a perceptual choice of what to attend to.

What we are beginning to see is the proliferation of an endless number of *viable* (as opposed to adapted) systems and a form of evolutionary pluralism that recognizes the *constructive*, creative nature of each system's evolutionary process. In humans our cosmological motives express themselves in a myriad of interpretations of the world, as we adapt not to *the* environment but what we *think* the environment is:

Change depends on the variability of organisms and species, and the infinite possible ways in which this variety is coupled with environ-

mental constraints. Natural history is a history of the reciprocal production of new constraints and new possibilities through the drift of structural couplings between autonomous living systems and their environments, and between differing autonomous living systems within particular ecologies. (Ceruti, 1989, p. 155)

This view leads to a different, more ecological, understanding of constraints and the boundaries of human knowledge and experience. Here they are not seen as antithetical to freedom, complexity, and diversity, but as essential aspects of them. This relates back to the new understanding of autonomy as, paradoxically, greater systemic embeddedness. The focus is on the primacy of relationships as opposed to the stereotypical individualist/reductionist Western view in which autonomous atoms which, when put in relationship, typically have to battle for their autonomy. Complexity and diversity are in fact the result of constraints—creative systems are complexifying and diversifying entities and in turn seek out more complexity and diversity in order to create evermore heterogeneous simplicity and requisite diversity.

In the post-Darwinian view of evolution, organisms are no longer seen as collections of traits that evolve separately according to the force of environmental stimuli. What becomes most important is the integration and interdependence of the organism's characteristics—of the whole self, as Barron emphasized—and of those characteristics with the environment (cf. Findlay & Lumsden, 1988). In this view, the evolution of every single trait is subject to highly specific constraints determined by the whole (Ceruti, 1989). The characteristics of creative individuals outlined so thoroughly by Barron must no longer be viewed as separate traits restricted to single individuals, but as part of a larger, whole-system process that together forms an ecology that exhibits isomorphisms at the biological, psychological, and social levels, exhibiting successively higher levels of complexity, both in terms of matter—energy and information, for each level respectively (Montuori, 1992). Furthermore, the person—environment interaction may trigger, and at times inhibit or excite, different characteristics.

The pluralist approach also dismisses attempts at establishing an "optimal" adaptation, a pinnacle of adjustment all should strive for. On the contrary, it holds that the greater the diversity of adaptive systems, the richer and more flexible the ecosystem as a whole becomes. The issue then becomes not to seek the "fittest" form of adaptation, a spurious "survival of the fittest", but to develop the kind of ecology that can support the greatest amount of complexity, diversity, and heterogeneity. These complex, heterogeneous environments are inhabited by individuals with characteristics such as independence of judgment, tolerance for ambiguity, complexity of outlook, and the psychological flexibility of the androgynous individual.

Creativity research itself has been the first psychological enterprise to point to ways of being that go beyond social adjustment and normalcy but are also not pathological. Rather than focus on an "optimal" adjustment to the social environment, in which psychological "health" is defined in terms of social adjustment, creativity research, as embodied specifically in Frank Barron's research, has pointed to a plurality of fitnesses reflecting different cosmological motives.

These different cosmological motives are also expressed in a plurality of fit social systems. This pluralism distinguishes itself from relativism—which recognizes no criteria for judgment—inasmuch as a criterion for fitness may be the capacity for generating a plurality of discourses within the system itself: in other words, the extent to which heterogeneity, complexity, and diversity are fostered, along with independence of judgment, tolerance for ambiguity, androgyny (breaking down of sexual stereotypes and the psychological boundaries they create), and so on. The emphasis is not so much on content as on capacity.

This plurality of fitnesses coexists on the horns of seemingly paradoxical antinomies or bisociations, alternating periods of diffusion and integration, innocence and experience, rebellion and stability. This pluralism manifests itself also in Barron's own eclecticism and methodological pluralism, as the contributions to this volume attest.

Barron (1995) pointed out that the dynamics of co-creation require much further study and will provide a rich vein for creativity research in years to come. From an understanding of the self as separate from the environment we can begin to move toward a more systemic and ecological understanding of self and environment that may drastically change the way we understand our own creativity, study it, and choose to apply it. The ecological and social destruction created by a self acting on the environment on the basis of an illusory separation between self and environment might then begin to be remedied and reversed. This transformation and the creation of ecologies that foster creativity and psycho-social health will owe much to the pioneering work of Frank Barron.

## CONCLUSION

In this chapter I have hinted at some less well known aspects of Barron's approach to creativity and personality. I have suggested that a systemic, ecological approach permeates Barron's work and that he was in fact a pioneer in ecological approaches to the study of consciousness—and of the 'new' ecopsychology. Read in this key, his work can be seen in a different light and the research data reported in such volumes as *Creativity and Psychological Health* (1963/1990) become far more than part of a trait approach to personality.

Barron's work exalts the complexity of the self, places it in the context of its environment, recognizes not only its biological roots but also its self-reflexive difference, and brings a simple, elegant, and generative order to bear on it. This new simplicity reflects the complexity of the synthesis that has led up to it by being an enormously rich and fruitful soil for the development and elaboration of further ideas—a great and nourishing biomass.

In an era when psychological studies of creativity are increasingly focusing on systemic approaches and seriously considering the social dimensions of creativity, Barron's work may be regarded by some as being part of the now unfashionable personality approach. I have attempted to show that Barron's work can in fact be read as a highly original ecological and systemic attempt to discover systemic isomorphisms at the level of biological, mental, and social phenomena, demonstrating their interconnectedness and ushering in a new vision of an interdisciplinary ecology of consciousness, which prefigures our new societal consciousness of ecology.

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