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# *WORK IN PROGRESS*

## The Ecology of Imagination in Childhood

EDITH COBB

THE PRESENT ESSAY is an abridgment of a longer work in process, which attempts the difficult task first of defining what we mean by the genius of childhood as a common human possession; and second of showing that a major clue to mental health lies in the spontaneously creative imagination of childhood both as a form of learning and as a function of the organizing powers of the nervous system. Of necessity, the exploration includes tracing the relationship of this early psychophysical force in human development to those uncommon forms of genius which constitute the high point of achievement in human growth potential, with roots, as I believe, in the child's perceptual relations with the natural world.

I propose to argue in this paper that children are born animals and mature biologically, but evolve culturally into human individuality, reaching widely different levels and norms. This use of the term "evolution" must be taken literally—that is, as a "true metaphor,"<sup>1</sup> a description of an experiential continuation of nature's own strivings toward a transcendence of biological levels through culturally elaborated relations with environment. The difference between animal and human nature would then be seen to consist of the uniqueness of every human individual as a species in himself, while nature's drive toward speciation and variation in forms could be interpreted as continuing in individual form into human life, first in the child's speculative play with nature's plasticity, and ultimately in man's individual striving to create forms *not* found in nature, in the arts, sciences, technology, and thought.

Historically speaking, individual genius has played the principal role in the achievement of a general cultural transcendence of previ-

ous levels, both psychological and cultural, by introducing higher forms of ability, purpose, and aim into the cultural continuum. The genius of childhood, in the sense of extreme personal originality and the creation of private worlds, is discontinuous and persists into adult life only as a specialized, highly cultivated condition. But the gift of our prolonged human childhood to the family of man is plasticity of response to environment. This plasticity of response and the child's primary aesthetic adaptation to environment may be extended through memory into a lifelong renewal of the early power to learn and to evolve.

If we examine the statements made by adult geniuses about their own childhood and compare them with references to the child in myth and religion (in particular in the Christian religion), it seems clear that there is and always has been a widespread intuitive understanding that certain aspects of childhood experience remain in memory as a psychophysical force, an *élan*, which produces the pressure to perceive creatively and inventively. For from this position, creative and constructive mental processes do not result from an accumulation of information, but from the maintaining of a continued plasticity of response of the whole organism to new information and in general to the outer world. Perhaps we have arrived at a new age in which this condition of mind and purpose can no longer be optional or left to the gifted few, but must be recognized as a common human need in adapting to life and society.

My position is based upon the fact that the study of the child in nature, culture, and society (the evolution of social attitudes toward childhood into present realization of its importance in everyone's life history) reveals that there is a special period, the little-understood, prepubertal, halcyon, middle age of childhood, approximately from five or six to eleven or twelve—between the strivings of animal infancy and the storms of adolescence—when the natural world is experienced in some highly evocative way, producing in the child a sense of some profound continuity with natural processes and presenting overt evidence of a biological basis of intuition.<sup>2</sup>

These concepts have evolved from four principal sources: first, biographical and autobiographical memories of gifted people; second, the Freudian concept of childhood as the core of human development, particularly as this is treated in social casework,<sup>3</sup> which furthers adaptation of the unique individual to his total environment; third, a study of the plastic, dynamic nature of imagery in contrast to the

more static condensed simultaneity of the symbol; last, and as a tool for the implementation of these sources, an investigation of studies of the changing imagery in the language of natural description, which disclosed this special trend in perception, a trend in the cultural evolution of attitudes toward nature which has produced the concept of ecology, the study of mutual relations, the give-and-take between organisms and their complete and total environment. The science of ecology provides us with a plastic image of behaving organisms in a behaving world, and a tool for synthesis as well as analysis of the system of meaning and verbal imagery which we use to describe nature.

In my collection<sup>4</sup> of some three hundred volumes of autobiographical recollections of their own childhood by creative thinkers from many cultures and eras, ranging from a fragment from the sixteenth century to the present, it is principally to this middle-age range in their early life that these writers say they return in memory in order to renew the power and impulse to create at its very source, a source which they describe as the experience of emerging not only into the light of consciousness but into a living sense of a dynamic relationship with the outer world. In these memories the child appears to experience both a sense of discontinuity, an awareness of his own unique separateness and identity, and also a continuity, a renewal of relationship with nature as process. This apprehension is certainly not intellectual; I believe it is rational at least in a limited sense, a preverbal experience of an "aesthetic logic" both in nature's formative processes and in the gestalt-making powers of the child's own developing nervous system, aesthetic powers that overlap meaningfully in these moments of form-creating expansion and self-consciousness.

"Form is the magic of the world," as Dalcq has expressed it, whether in nature, play, art, or thought. But it is the activity of creating form which has fascinated the mind of man, most particularly as the power to animate the inanimate, the ability to make things move in the shape of working models and refined machines, the power to produce animation even in the "still" image of the plastic arts. This shaping force, this desire to master and to create motion, not only is at the basis of all human technical invention but also is the prime characteristic of effective metaphor: "Those words set a thing before the eyes that show it in an active state," said Aristotle.

It is especially interesting to note, therefore, that in dictionary terms the word "animate" derives from a Latin word signifying "soul" or

"breath" (a metabolic action pattern), and that among its meanings are "to give spirit to" or "to put in motion or operation" or, synonymously, "to energize" (Webster). The term "genius" plays with all these threads of meaning, including mental power or energy, but in its earlier usage it referred most frequently to the spirit of place, the *genius loci*, which we can now interpret to refer to a living ecological relationship between an observer and an environment, a person and a place.

Instead of working backward from the adult's position to the child's, I found it necessary in my exploration of the genius of the living child to set up methods of investigating creative purpose in the child's play and art. The value of forms produced was secondary to the importance of the response to "aesthetic logic" in the child's gestalt-forming action patterns with the instrument of the self. Using various forms of so-called projective methods and play techniques (in particular, modified versions of the Lowenfeld World-Play Technique and the Thematic Apperception Test, accompanied by a continual reference to the Rorschach categories of Form, Color, Motion, Time and Space, Animal and Human Response), I became acutely aware that what a child wanted to do most of all was to make a world in which to find a place to discover a self. This ordering reverses the general position that self-exploration produces a knowledge of the world. Furthermore, while observing the passionate world-making behavior of the child when he is given plastic materials and working dimensions which are manageable and in proportion to his need, accompanied by a population of toys, fauna and flora, and artifacts that do duty as "figures of speech" in the rhetoric of play, I have been made keenly aware of those processes which the genius in particular in later life seeks to recall.

The tendency to play may be said to be characteristic of animals reared in a nidicolous (i. e., a specifically nestlike) domestic ecology. The important point about the child's play is that it includes the spontaneous effort to be something other than what he actually is, to "act out"\* and to dramatize speculation, which is in effect to take play out into the four-dimensional continuum by adding motion and sequence, and therefore time, to its procedures.

As lay people, we probably think with greater ease about biological

\* An important term, which now is unfortunately also the metaphor for delinquency and neurotic behavior.

evolution in terms of continuity; and, as Julian Huxley reports, "Life is and must be a continuum because of its basic process of self-reproduction: in the perspective of time all living matter is continuous because every fresh portion of it has been produced from pre-existing living matter."<sup>5</sup> However, he adds, "Discontinuities of various sorts have been introduced into the continuity," the study of which should be of great value, for they are of first-rate importance to a long-term view of evolution. "The chief of these discontinuities," Huxley continues, "are those of the cell, the multicellular individual, the species, and the ecological community" — that is, the "ecological niche," the preferred perceptual world in which the organism functions. Each one of these discontinuities is of major significance to the psychobiological nature of man's individual organism and to his psychosomatic personality. In nature, continuity of species is maintained by interbreeding; the discontinuities with previously related forms are maintained by absence of interbreeding brought about by isolating mechanisms, which in animal life also include psychological barriers to mating. Man must create his own psychological identity in order to survive, and he represents a climax in the historically related achievements in discontinuity. His psychosocial history shares in this process; one need only remember the discontinuous nature of such social mechanisms as monogamy, celibacy as a social ideal, or the role of the incest motif, found in one form or another throughout civilization.

When Freud defined childhood's middle age as the latency period, he referred only to latent sexual drives, which, according to psychoanalytic interpretation, become less purposive when the child's mastery of body and speech directs his energies toward other types of cognitive satisfaction. Energy remains libidinal, and creativity a substitute for sex. I suggest that this period is also a time of far more general latent awareness or "half-knowledge,"<sup>6</sup> a period of plasticity of perceptual response and "biological memory" which when employed in original gestalt-building processes must be described as intuition (in contrast to other instinctual biological drives).<sup>\*</sup> In infancy the impulse to love is aroused to the level of passion and yet must remain unfulfilled and unformulated in any direct sense. The passion of infancy is therefore addressed to goals and pur-

<sup>\*</sup> Intuition is not necessarily benign. It is relational and structural; its value depends upon the purposes to which it is addressed.

poses unknown but not entirely "unperceived," for in ordinary experience in early childhood, the parents (more specifically the nurturing figure of the mother) are the targets of love, a fact that evokes some latent foreknowledge of sexual form and function. The "distance" between the self and the objects of desire, and the natural pressure for fulfillment, are equally real, although "out of sight." The child fills in the distance between the self and the goals of desire with imagined forms. The basic evolutionary characteristics of perceptual processes, also latent in the human nervous system, become dominant as the child emerges more consciously into a perceptual participation in external nature. The reproductive urge is undoubtedly also represented in the desire "to body forth the forms of things unknown," but the biological urge toward growth becomes the psychophysical urge toward transcendence, the urge to create higher and ever more complex gestalten in perception and cultural meaning.

Freud has made plain to us that the problem of maintaining our individual transcendence of levels above our biological heritage of animal instinct and impulse is a matter of life-long effort. It begins with the cultural demand for the discontinuity of instinct, which he has described as the Oedipal situation, a climax in nature's use of isolating mechanisms in culturally elaborated form. While the child's expression of reproductive mechanisms is biologically delayed and culturally restricted, the psychological growth mechanisms have been culturally elaborated, speeded up, and highly differentiated. The child's will and need is to use energy for purposes of growth, thus following nature's own biological pattern of alternating the use of energy between self-reproduction and self-increase. Energy in itself cannot be described as "libidinal," although the body's purpose in the use of energy may be addressed to libidinal ends. It is the process we know as metabolism, which furnishes "the energy system which is the body" (to use Sir Charles Sherrington's phrase) with what D'Arcy Thompson has called "the power to do work."

In his study of prenatal and neonatal infancy,<sup>7</sup> Gesell finds that the development of genius is a true growth phenomenon, a continuation of the earliest prenatal morphological strivings. The embryology of mind, according to him, is to be sought in the embryology of behavior, even in the earliest postural mechanisms and the first prenatal adjustment to the ceaseless pull of gravity. Genius, he finds, is an achieved "personal possession," an extension of the body's own growing corpus of behavior into nature's continuum. We would say here

that genius is a personal achievement rather than a possession, a personal "reading" of nature extended into the semantic unknown. But, as Gesell states, the action patterns of growth are continuous and analogous; the unfolding experience becomes a part of all metaphor. We would extend this idea to stress the individual uniqueness of human psychological and cognitive growth, in spite of the fact that the recognition of growth or learning ultimately depends upon culturally standardized methods. The child's early perceptual continuity with nature, the innate gestalt-making powers of the nervous system, then remain the biological basis of intuition. The cognitive process which differentiates man from all other animals is the source of his predictive, prefigurative imagination, enabling him to learn and evolve culturally. As Norbert Wiener, whose genius has been directed to the understanding and "modeling" of the mind as mechanism, has remarked, "It remains a miracle that children do learn," that they do match perception and language so successfully. For every child this relational behavior is an act of genesis, the genesis of his real world as a personal yet culturally conditioned image.

Thorpe's recent summary of works on animal learning and perception<sup>8</sup> provides a significant re-enforcement of the present concept of a perceptual basis of human intuition and learning. Perception, he finds, must now be considered to be a primary drive in evolution, and the exploration of environment to be an innate appetite deriving from a principle of expectancy within the animal's neural tissue. However, the exploratory tendency in the animal, which Thorpe identifies as "latent learning," is not addressed to primary survival needs. For the animal as for man, the ultimate satisfaction of perceptual expectancy and perceptual exploration is the organization of the perceptual world into the "good gestalt," into environmental shapes that "hold," that are populated with forms and are rich in perceptual meaning. In bird, fish, beast, or man, the need to make a world is intricately related to the sense of identity. Perception even on lower levels of animal life is not a response to simple sense data, "but an active organizing process, itself possibly including an element of purpose, tending all the time to build up primary perceptions into more and more complete and unitary systems." Thorpe states that "purpose" here has the usual meaning, "a striving after a future goal retained as *some kind of image or idea*" [*italics mine*]. Plasticity of response is again the important feature in perception, for "in as far as the original faculty of perception retains or increases plasticity during evolutionary



development, it becomes the various learning processes that we know."

But most significant to our argument here is the idea that perception is a comparative activity which contains a neural experience of duration, and that "perception of a time dimension including an element of expectancy is as fundamental to organisms as is perception of space." Perception is a kind of temporal scanning, a translation of spatial into temporal patterns after the manner of scanning as performed by a television apparatus. Time and space dominate all perceptual activities. In this activity "perception of relations is primary while sensation is the result of secondary analysis." In human life the primary perceptual activity is not the photochemical synthesis of a prefabricated gestalt, but a creative imagination of form.

The child, like the poet, is his own instrument. His whole body, erotized and highly sensitized by the necessities of nurture and touch, is the tool of his mind, and serves with a passionate enjoyment in a creative engagement with the forces of nature. Examination of the psychobiography of genius suggests that the perception of wholeness has been a characteristic of all individuals who have thought more closely with the instrument of the body. Perceptual unity with nature is, of course, not a new concept.\* As Conrad Aiken has expressed it, drawing upon the philosophy of ancient China:

The landscape and the language are the same  
For we ourselves are landscape and are land.<sup>9</sup>

Taken together, the child's intuitive sense of a perceptual continuity with nature and the often expressed hope that the poetic and the scientific aspects of our culture may be evolving toward a new synthesis with nature suggest that the "unmediated vision" of childhood is the primary evidence, perhaps the source, of the predictive, prefigurative imagination of man, and that the exercise of this imagination is dependent upon autobiographical recall in some form. Geoffrey H. Hartman, pursuing this thought in his analysis of the work of four poets,<sup>10</sup> points out that Wordsworth was not only the first English poet to treat autobiography poetically, but also the first to separate personal experience from the impersonal element within

\* The false metaphors of "contest" and "conquest" of nature continue to interrupt our perceptions of nature's aesthetics.

autobiographical recollection in order to obtain a vision of the basic creative process, "the motion that impels and rolls through all things" in the order of nature, using himself as a recording instrument. Perhaps it is significant that this was the point in recent social history at which the social reality of the concept of individual uniqueness was beginning to assert itself, coinciding with the emergence of the autobiographical impulse (until then something of a rarity in printed discussion) as a form of the "education of the poetic spirit" (Hourd's phrase<sup>11</sup>), with roots in the perceptions of childhood.

In an important study, John Oman<sup>12</sup> comments that in every genius whose special gift is perception, either time or space seems to be a dominant intuition in childhood. We would say here that genius consists in the continuing ability to recall and to utilize the child's primary perceptual intuition of time and space. Oman recalls that his own exodus, his first sense of discontinuity and aloneness with respect to other individuals but equally one of continuity with nature, occurred when as a child of six he stood at the edge of the sea on a Sunday morning in summer. His own awakening to a sense of nature as infinity and yet as a part of himself seems to have occurred quite directly in relation to the earlier experience of a Sunday morning in church. This was not a specifically religious experience, but simply a response to an open-system attitude, a state of temporal and spatial inquiry — Where am I? Who am I? — an attitude toward nature which is frequently evoked within or as a result of religiously conditioned circumstances described in childhood recollection.

In a charming autobiographical account of the birth of his own genius,<sup>13</sup> Giordano Bruno recounts his "acting out" of this particular version of childhood experience, the intuition that drove him to continue to relate "depth of potentiality to the sublimity of action" and held him in a state of enchantment even to his death at the stake. In Bruno's allegory the sense of a deceptiveness of appearances across time and space is described as a colloquy between two mountains, his "parents" in nature — Mount Cicada on whose slopes he lived, and Mount Vesuvius opposite. To satisfy himself he journeyed on foot across the distance between Cicada and Vesuvius, to find each of them barren at a distance, but rich in texture close by. "Thus did his parents [the two mountains] first teach the lad to doubt, and revealed to him how distance changes the face of things." In later life, Bruno averred, "No matter in what region of the globe I may be, I shall realize that both time and space are distant from me."

It is significant that adult memories of childhood, even when nostalgic and romantic, seldom suggest the need to be a child but refer to a deep desire to renew the ability to perceive as a child and to participate with the whole bodily self in the forms, colors, and motions, the sights and sounds of the external world of nature and artifact. The nonanthropomorphic position, the ability to see and think in terms of process as well as in terms of myth and allegory or personal drama, is the basis for separating process in nature from psychological motivation. This, the gift of the ancient Greeks to the world, is assumed to be open only to intellectual understanding. While the Greek discovery represents a great step forward in intellectual and cultural evolution, the basic neural potential for performing this distinction and differentiation is, I suggest, a functional part of childhood everywhere. The experiences remain largely nonverbal — although not entirely so, if we take into consideration some of the astonishing and beautiful cosmic questions of the child. But such experience is subject to recall in remarkably similar terms by gifted or creative people from the most widely differing eras and backgrounds — social, cultural, and geographical.

In his autobiography,<sup>14</sup> Bernard Berenson gives an exceptionally full and rich description of his discovery in early childhood of the sense of "Itness" as an integration with the ongoing process in nature. The position achieved by the child in this experience of "psychological equipoise" became a stabilizing influence, a life-long goal, and also the basis of a highly skillful method of observing and learning. His experiences continued through childhood and boyhood. In particular, one balmy summer morning he "climbed up a tree stump and felt suddenly immersed in Itness.\* I did not call it by that name, I had no need for words. It and I were one." Of these moments of exodus into the temporal and spatial continuum, Berenson says that "in consciousness this was due not to me, but to the not-me, of which I was scarcely more than the subject in the grammatical sense." As an adult he sees himself "as an energy of a given force in radiation and of a certain power of resistance," but adds that "he seems to be the same in these respects as I remember being at the end of my sixth year," when he became latently aware that the form-creating harmony of his perceiving body and the form-creating harmony of nature were one and the

\* It may be remembered that Rilke as an adult at Duino underwent a similar experience in a tree cleft.

same process, the process which eventually enabled him to perceive and to estimate value in art as the appearance of living motion in his perceptual "readings," even of a stone fresco. The experience at the dawn of conscious life remained the "guardian angel," returning in memory to remind him that "It was my goal, It was my real happiness," the happiness of perceptual creation upon which all other creativity depends.

Further examples are to be encountered in autobiographical recollections from Africa, Asia, Europe (North and South), and the Americas. These descriptions — some fleeting, some lengthy — of the inception of a relationship with nature express not only a deep need to make a world the way the world was made, but also the need to make a piece of the real world in which one lives with others. This is, I suggest, the only truly effective counteragent to the forces of internal conflict which until recently were considered the major subjects of study, the main background to purpose in life. Once the theme of world-making is seen as a basic human goal, the emphasis upon discontinuity and the pressure toward self-knowledge represented by the Socratic axiom "Know thyself," so essential to the differentiation of the idea of man into the image of the unique self, seems to diminish in value, or to have reached a saturation point as a useful psychosocial concept. This is not to say that the concept of the individual or of individuality is outmoded or even fully realized in social aims, but that, as a tool for the shaping of thought about human behavior, self-exploration as an aim in itself is not merely less and less effective but is unconsciously supporting a dangerous trend toward neurotic self-interest on a world-wide scale.

This point of view calls for a redefinition of human individuality, not only in terms of human relations, but also in terms of man's total relations with "outerness," with nature itself. Such a redefinition seems feasible in terms of the developing intellectual climate. The pattern of cultural evolution that has been long in the making is one in which the concept of ecology, the study of the relations between organisms and their total environment, will play a major part.

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ing: "Neither are these only similitudes, as men of narrow observation may conceive them to be, but the same footsteps of nature treading or printing upon several subjects or matters." Barfield's conclusions are quoted here as typical of a kind of thinking that is central to my thesis, for this treatment of perception and the making of meaning leads to the observation that it is these very footsteps of nature "whose noise we hear alike in primitive language and in the finest metaphors of poets."

2. I am here following especially the leads of Albert M. Dalcq, "Form and Modern Embryology," and Konrad M. Lorenz, "The Role of Gestalt Perception in Animal and Human Behaviour," in L. L. Whyte, ed., *Aspects of Form* (London, Percy Lund Humphries & Co. Ltd., 1951); also of L. L. Whyte on formative processes in his many publications, particularly *The Unitary Principle in Physics and Biology* (London, Cresset Press, 1949).
3. Practice of social work in the fullest sense is in fact the only field of applied human ecology that I know of. In direct relation to the ideas presented here, I find that in 1940 Dr. Eduard C. Lindeman, Professor of Social Philosophy at the New York School of Social Work, saw "Ecology" as "an instrument for the integration of science and philosophy" in a paper of that title ("Ecology: An Instrument for the Integration of Science and Philosophy," *Ecological Monographs*, 10 [July 1940] pp. 367-372), although he did not apply this directly to social work.
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