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# COGNITION, CONATION AND CONNOTATION

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Consciousness is essentially a system of meanings that may be cognitive (perceptual, conceptual, etc.) or affective (values with a conative factor are always implied in affectivity.) These two cognitive and affective aspects of meaning always go together; none is present without the other, although they may be examined separately.\*

How little understood are the implications for education of what Piaget is saying here was brought home to me strikingly during a recent meeting of a graduate seminar in reading. In the course of a discussion on what constitutes "appeal" for children of various reading materials and methods, one member of the seminar made reference to Dr. Richard Jones' *Fantasy and Feeling in Education* (New York University Press, 1968), in which is related a series of classroom episodes involving the presentation of sections of ESI's much-publicized curriculum, "Man: A Course of Study." The children—twenty fifth-graders in an experimental summer school in Newton, Massachusetts—had just been exposed to vividly colorful and powerfully silent films which touched upon the Netsilik Eskimo's necessity—enforced cultural pattern of sometimes leaving behind to die in the ice and snow the very old (and occasionally the very young—unwanted girl infants) who were unable to travel from one place to another in the never-ending search for food. The children had strong emotional reactions to these films, but, rather than stopping to explore these, the teachers, for the most part, completed the suggested lesson plans, which attempted to maintain throughout an objective focus on the material.

At this point in our seminar discussion, I interjected that I recalled reading further in the same chapter of Dr. Jones' book a communication from the dance teacher to whom the children went immediately following their social studies class. In the memorandum, she had expressed her consternation at being presented consistently with themes of sorrow, death, and abandonment in the children's movement. In

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\* Jean Piaget, "The problems of consciousness in child psychology: Developmental changes in awareness," *Problems of Consciousness*, H. S. Abramson, Ed., 1954.

short, she objected to her classes becoming almost exclusively a cathartic release of emotional tensions engendered by the social studies curriculum.

"But perhaps that's just where they should be expressed" was the comment forthcoming from one of the seminar participants—a comment that struck me forcibly as revealing the pivot on which turns our conception (and some might say misconception) of the educational process. To my mind, the whole cultural bias towards dichotomization of intelligence and feeling, thought and emotion, science and art, is laid bare in that remark. It belongs to the same category as the commonly heard admonition never to mix business and pleasure (or friendship.) The underlying assumption of both remarks is that the world of public knowledge and the realm of private feeling are separate and basically incompatible.

What my fellow student was expressing was the very common—I would say prevalent—attitude among educators that the classroom and thus the school is a place to assimilate knowledge and *not* a place to air personal feelings. What one does with the emotional "side effects" of learning is a private matter. Hopefully, they will be "worked off" in athletics or "expressed" in artistic activities, or at worst (or, perhaps, to some minds, at best) simply "forgotten," a term which translates into psychoanalyse as "repressed."

But this attitude just does not take seriously to heart or to mind what Piaget and other insightful psychologists and philosophers as well as perceptive practitioners of education are saying. True enough, the classroom has been set up primarily to facilitate the assimilation of knowledge. But the consensus of the Magi—of all times and climes—is that knowledge without self-knowledge is not worth knowing. This is essentially what Piaget is saying when he tells us:

Intelligence thus begins neither with knowledge of the self nor of things as such but with knowledge of their interaction, and it is by orienting itself simultaneously toward the two poles of that interaction that intelligence organizes the world by organizing itself.\*

It is the self-knowledge pole of that orientation that is lit up in the process of "accommodation," the Piagetian term for the reorganization of the cognitive structure literally to *accommodate* the new knowledge which, thus transformed, becomes part of the structural basis for assimilating even more complex knowledge. Translated into

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\* Jean Piaget, *Play, Dreams and Imitation in Childhood*, Norton, 1951 (1945).

practical education terms, this means that without allowance for and even *aid* to the accommodating process (which implies the personally evaluative, essentially private sphere of affectivity), subsequent "assimilations" of knowledge can be like so many castles constructed on sand. The next shift in the wind of attention will disintegrate them; for the underlying foundation that only *felt meaning* can provide will never have been realized. In reading, this understanding-in-depth and integration with already existent structures of "prehension" goes, by and large, under the name of *comprehension*, which term even sounds like what it means—to grasp and create a meaningful whole out of garnered information or experience. Knowledge which has not made the connection with the affective schemas that results in accommodation and thus in equilibrium is not self-realized knowledge—knowledge which can expand or raise the level of conscious awareness. Thus it is *meaningless* for the person and thereby rendered incapable of entering into subsequent mental developments. In other words, little "significant" learning has taken place—a few or more than a few bits and scraps of information committed to short-term memory, then reproduced on test paper, without there ever having been experienced the meaning without which the knowledge cannot become an integral part of the cognitive equipment of the organism.

Back for a final look at the classroom where the children were viewing the films of Eskimo life—presumably one of the main points to be gotten across is that man is identifiably *Man* with ultimately the same problems to face however differently he goes about solving them within the framework of his particular culture and within the scope of his particular level of development. Children denied the opportunity of expressing and airing in open discussion their initial reactions of repugnance and dismay at disturbing revelations about the Eskimo's cultural values and practices will probably not make this primary identification of (and more importantly *with*) the Netsilik as a fellow human being, and thereby a valuable opportunity for broadening the child's world-view as well as deepening his understanding of himself in relation to his own cultural pattern is lost.

Fortunately not irretrievably so for the twenty Newton youngsters, for one of the teachers involved in presenting these studies insisted on being permitted to follow her teacher's "instinct" and encouraged the children to express openly their honest reactions to the impact of such seemingly radically different cultural values. The discussion that ensued not only considerably eased the tensions but allowed for

the resolution of these conflicts into the realization that providing for the very old (and the very young) are problems common to all cultures and that death, and thus life, itself is interpreted differently in different cultural contexts. After these particularly rewarding (from everyone's point of view) sessions, the dance instructor expressed her gratitude for no longer having to contend almost exclusively with motifs of death and abandonment in the children's movement. She could now, she said, begin to lead them into more varied forms of expressive movement.

So many of the tirades against our culture and times have been directed at what Owen Barfield has called "the growing general sense of meaninglessness." In an article entitled "The Rediscovery of Meaning," (Saturday Evening Post, Jan. 7, 1961) he says that "It is this which underlies most of the other threats. How is it that the more able man becomes to manipulate the world to his advantage, the less he can perceive any meaning in it? . . . Penetration to the meaning of a thing or process, as distinct from the ability to describe it exactly, involves a participation by the knower in the known."

All well and good, one may counter. But, while this is in all probability an accurate intuition about where and what the problem is, "feeling" and "meaning" have been philosophy's and psychology's perennial enigmas, the roots of whose perplexity are sunk so deep that one Professor T. H. Pears, writing in 1923 in *Remembering and Forgetting*, said, not altogether facetiously, "If the discovery of the psychological nature of Meaning were completely successful, it might put an end to psychology altogether." The question remains, just how does one go about determining whether a given program of study affords optimum conditions for the nurturance of these "esoteric" qualities?

Far from wishing to get enmeshed in a philosophical unravelling of the "meaning of meaning," I would like instead simply to throw out the suggestion that, in the light of current research and thinking about the role of perceptual processes in helping to bring about the coalition of affect and intellect which we call understanding, *feeling* and *meaning* may perhaps be seen to possess a more substantive nature than we have hitherto recognized.

Investigators of the psychology of perception have helped to set the stage for a psychological reevaluation of feeling and meaning. Gardner Murphy and C. P. Sollery, in their book, *Development of the Perceptual World* (Basic Books, Inc., 1960), point out that most

psychological theories implicitly (and psycho-analysis, explicitly) acknowledge the close interweaving of perception and cognition with the affective processes, especially during childhood. They postulate the existence of what they call "primary meanings," which are "differentiations of sensory events, of percepts, and of responses which occur innately, being part and parcel of the individual's biological inheritance" (p. 312). These primary meanings provide the basis from which or upon which all subsequent "habits" of differentiating or assimilating experience through learning are formed. "As for meaning," they write, "we have asserted our belief that meaning is essentially differentiation and integration of sensory, perceptual, and motor events which have implicative or prognostic value for other sensory, perceptual, or motor events" (p. 314).

Rudolf Arnheim, from the standpoint of the psychology of art, views the perceptual process in a similar manner. In an article entitled "Perceptual Abstraction and Art," (*Psychological Review*, 1947, p. 54), he maintains that "the individual stimulus configuration enters the perceptual process only in that it evokes a specific pattern of general sensory categories, which *stands for* the stimulus in a similar way in which in a scientific description a network of general concepts is offered as the equivalent of a phenomenon of reality." "If this theory be acceptable," he goes on to say, "the elementary processes of perception, far from being mere passive registration, would be creative acts of grasping structures even beyond the mere grasping and selecting of parts. What happens in perception would be similar to what at a higher psychological level is described as understanding or insight." He calls for a new approach—a psychological reevaluation of the relationship between the development of perceptual and representational concepts and of mental growth in general.

In another article, entitled "Visual Thinking," (*Education of Vision*, Gyorgy Kepes, Ed., 1965), he suggests that, in our ignorance of the importance of the role of perception in thought processes, we may be over-stressing the verbal concept to the neglect of the underlying structural sources of meaning.

But to refute the assumption (that the only possible vehicle of concepts are words) it seems to me sufficient to point to cats, dogs, monkeys and our own speechless infants, who indicate by their behavior that they live in a world of constant entities. Indeed, words are but labels, and there can be no labelling before the senses have furnished defined kinds of things.

Developmental psychology would seem to offer support to Arn-

heim's statement. Jonas Langer, writing of cognitive development in *Theories of Development* (Holt, Rinehart and Winston, Inc., 1969), points to the findings of Piagetian researchers in their study of the relationship of linguistic development to the attainment of the concept of conservation. "Our evidence," they write, "offers little, if any, support for the contention that language learning per se contributes to . . . the achievement of the conservation concepts." (Inhelder et al., 1966, p. 163). "Such findings," Langer says, "support the hypothesis that the meaning of language is not passively acquired from environmental sources, but rather is mentally constructed (assimilated) by the child to accord with his internal schemes" (p. 136).

In an application of this thought to education, others, like Arnheim, are suggesting that we might be short-sightedly, as it were, pouring our richest nourishment on the outermost leaves of learning, while the roots that must maintain the entire symbolic structure wither untended—this in a culture where the "primal sanities" of nature, to use Walt Whitman's phrase, are growing ever more increasingly *imperceptible*.

Along this line, Robert Jay Wolff, in "Visual Intelligence in General Education" (*Education of Vision*), decries the lack of aesthetic order in today's "man-made" environment and suggests that this absence of sensorial and spiritual nourishment in our surroundings coupled with the "pedagogical anxiety to induce quick mastery of the signs and symbols of communicable knowledge" may be at the bottom of our acknowledged failure to educate, in the deepest sense of the word. "Could it be," he asks, "that the college sophomore writes badly because his education has neglected to nourish in him the experiential sources of good writing in its singleminded pursuit of the means?" "One of these sources is the thoughtful eye," he maintains, and, "without its guidance, the road to literacy can become a grammatical exercise and higher learning a vastly inflated kindergarten."

Mirko Balsaldella, writing in the same volume, makes explicit reference to the process of reading in connection with visual imagery. In his article, "Visual Considerations," he asks us to consider that "an idea is expressed by word symbols developed sequentially along an imaginary line," and that "the organized 'coming together' of these symbols elicits feelings and ideas, evokes images, describes things and events." "Basically," he says, "in perceiving an object you see only its form and color. For the perception to register in one's mind,

it must relate to previous perceptions, to a concept of its essence. Otherwise, it is as if we had not seen it, for our memory will have retained no trace of it."

Still others are examining the effects of specific training in perception on the ability to learn how to read. Archie A. Silver, together with associates Rosa A. Hagin and Marilyn F. Hersh, published the results of their experiments "using the method of stimulation of deficit perceptual areas . . . to determine whether perception can be modified by training and whether increased accuracy of perception is reflected in improved reading achievement." In "Reading Disability: Teaching Through Stimulation of Deficit Perceptual Areas," *American Journal of Orthopsychiatry*, 1967, 37, pp. 744-752), they report:

Recent studies have shown that at least the beginning aspects of reading are closely related to perceptual abilities . . . The results so far suggest that where perceptual defects are first trained out, reading instruction at intermodal and verbal levels will have a better chance of success . . . This principle of enhancing neuro-physiological maturation before intermodal and verbal methods are introduced has direct implication in the prevention of reading and language disability. Perceptual training at that critical age when the function normally develops may indeed enable the child to grasp language material which would otherwise escape him.

Some philosophers, among them, Ernst Cassirer, would have us realize that meaning inheres not alone in the schematic apperception of knowledge but exists apart from and prior to its assimilation by cognitive structures—that there are recognizable "expressive characters" which exist in and of themselves. He writes, in *The Philosophy of Symbolic Forms, Vol. III: Phenomenology of Knowledge*, (New Haven: Yale University Press, 1957):

An expressive character is not a subjective appendage that is subsequently and as it were accidentally added to the objective content of sensation; on the contrary, it is part of the essential fact of perception . . . If an expressive meaning were not revealed to us in certain perceptive experiences, existence would remain silent for us . . . What is primarily apprehended here is life as such far more than any individual spheres or centers of life; what originally appears in expressive perception is a universal character of reality (pp. 73-74).

Rudolf Arnheim, too, stresses the universal character of these perceptual elements that constitute the basis of all knowledge—



elements he describes as a "configuration of forces" that is "significant not only for the object in whose image it appears, but for the physical and mental world in general." In *Art and Visual Perception: A Psychology of the Creative Eye*, (University of California Press, 1954), he writes:

Motifs like rising and falling, dominance and submission, weakness and strength, harmony and discord, struggle and conformance, underlie all existence. We find them within our own mind and in our relations to other people, in the human community and in the events of nature. Perception of expression fulfills its spiritual mission only if we experience in it more than the resonance of our own feelings. It permits us to realize that the forces stirring in ourselves are only individual examples of the same forces acting throughout the universe. We are thus enabled to sense our place in the whole and the inner unity of that whole (p. 434).

Murphy and Solley weave this universal element into their psychology of perceptual development, accommodating in their theories "both the complex unravelling of symbols as practiced in psychoanalysis and the quest for formal principles of structure and order, as exemplified in Gestalt psychology." They write further:

In the same way, as illustrated for example in Rembrandt's perception of the meaning of the human face, or Schubert's and Beethoven's grasp of the possibility of transforming a simple melodic line into a breathtaking new vision of life by adding alterations in tonality or rhythm, we have sudden transitions to a higher plane—a plane in which a richer isomorphism with cosmic structure is achieved than sheer Gestalt principles in themselves would require. (*Development of the Perceptual World*)

Indeed, expressive perception and expressive form would seem to have much in common, if they are not identical, with aesthetic feeling and artistic form, and, relating this to education, one might begin to suspect that aesthetic quality, far from being some sort of "fringe benefit" that can be considered only after subsistence has been provided for, is to be ignored as a prime criterion of educational materials and experiences only at the risk of *meaninglessness*.

Donald Arnstine, writing in *Philosophy of Education: Learning and Schooling* (Harper and Row, 1967), forges a link between the psychologies of aesthetic perception and education. He writes:

The arousal of affect, the stirring of emotion felt as pleasurable, satisfying or absorbing, through the per-

ception of form in experiential cues, is a natural way of apprehending experience. It is sought after because the present is not effaced but rather highlighted and fully attended to. It is, in short, during the course of such experience that we feel most fully alive. And it is such experience that is best characterized as being aesthetic in quality . . . What could be potentially more important in teacher education, then, than the kinds of studies in the arts that can make prospective teachers more consciously aware of the features of things (such as lectures and books) that are potential cues for aesthetic experience?

No less renowned a philosopher and interpreter of the arts than Sir Herbert Read aligns himself with Arnheim, Cassirer, and the others in strongly advocating a policy of education that places the training of sensory and perceptual abilities through the arts at its center. His thinking seems to embody the "significant configurations" of Arnheim and the "expressive characters" of Cassirer as well as drawing upon Carl Jung's theory of archetypes. In "Art as a Unifying Principle in Education," (*Child Art*, Hilda Present Lewis, Ed., 1966, Diablo Press), he defines consciousness itself as the developing awareness of *form*, that is, "the ability to retain sensations as images, to compare and combine such images into meaningful structures." These very structures, he maintains, become a part of the warp and woof of the evolving structure of the mind itself. They become the "physically determined patterns of perception" that control the "habits" of our minds.

The mind, in its effort to arise from the amorphous pool of sensations and feeling, clings to a scaffold of precise geometric figures. Nowhere is this more clearly demonstrated than in the slow but certain emergence of basic form from the apparently aimless scribbling activity of a child. Form, the basic pattern, precedes identity, precedes significance, controls imagination, determines intelligence. The archetypes are the structural elements of visual order, of cognition itself, and the archetypes are by definition universal.

Even modern physics seems to have discovered these forms—"dynamic factors that manifest themselves in impulses . . . pieces of life itself—images that are integrally connected to the living individual by the bridge of the emotion." (C. G. Jung, *Man and His Symbols*.) In the chapter entitled "Models for Theory" of *Visual Thinking*, Arnheim describes Physicist Gerald Holton's concept of "themata,"

which the latter considers the underlying principles of scientific conceptions. Themata, says Arnheim, refer to

thought models that derive neither from empirical statements, such as meter readings, nor from analytical ones, reliant on the calculus of logic and mathematics. Holton does not wish to commit himself as to whether these *themata* should be associated 'with any of the following conceptions: Platonic, Keplerian or Jungian archetypes or images; myths (in the non-derogatory sense, so rarely used in the English language); synthetic a priori knowledge; intuitive apprehension or Galilei's 'reason'; a realistic or absolutistic or, for that matter, any other philosophy of science.'

Arnheim himself says, "I am treating these themata as mental images, and I trust that even persons who like to distinguish modern science in principle from what preceded it will be struck by the formal resemblances discussed here."

It is, I feel, worth the consideration of educators at all levels that perhaps some of the learning, and more specifically, reading problems that seem to afflict our Western culture (more so than in the East? [See Kiyoshi Makita, "The Rarity of Reading Disability in Japanese Children," *American Journal of Orthopsychiatry*, 1968, 38, pp. 599-613]) are due, at least in part, to the more widespread cultural phenomenon alluded to in the writings cited earlier in this paper. Is it possible that we are having to "pay the price for the spectacular successes in the sciences made possible by theorizing with disembodied concepts" (Arnheim), neglecting, moreover, to nurture the "experiential sources" within while proceeding to obliterate the "primal sanities" of nature in our environment?

Perhaps we should reread and reevaluate in the twin lights of the psychology of perception and the philosophy of symbolic forms the much-quoted passage from Einstein's letter to Jacques Hadamard describing his own creative processes of thinking.

The words of the language, as they are written or spoken, do not seem to play any role in my mechanism of thought. The psychical entities which seem to serve as elements of thought are certain signs and more or less clear images which can be "voluntarily" reproduced and combined . . . Taken from a psychological viewpoint, this combinatory play seems to be the essential feature in productive thought—before there is any connection with logical construction in words or other kinds of signs which can be communicated to others . . . The above mentioned elements are, in my case, of visual

and some of muscular type. Conventional words or other signs have to be sought for laboriously only in a secondary stage, when the mentioned associative play is sufficiently established and can be reproduced at will. (Hadamard, *The Psychology of Invention in the Mathematical Field*, Princeton University Press, 1945).

In this treatise, *On the Aesthetic Education of Man, in a Series of Letters*, the German poet-philosopher and close friend of Goethe, Friedrich Schiller, predicted the outcome of perpetuating a system of education that was not based on the principles of aesthetic and therefore *natural* order. At this moment in history we would seem to be living the fulfillment of his prediction.

The old principles will remain, but they will wear the dress of the century, and philosophy will lend its name to an oppression which was formerly authorized by the Church. Terrified by the freedom which always declares its hostility to their first attempts, men will in one place throw themselves into the arms of a comfortable servitude, and in another, driven to despair by a pedantic tutelage, they will break out into the wild libertinism of the natural state. Usurpation will plead the weakness of human nature, insurrection its dignity, until at length the great sovereign of all human affairs, blind force, steps in to decide the sham conflict of principles like a common prize fight.