CURRICULUM AND CREATIVITY:
RECONCILIATION THROUGH
LANGUAGE

by

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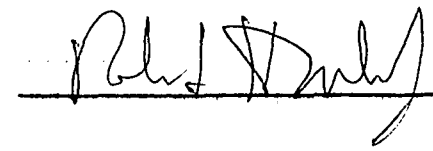
Dissertation Adviser 

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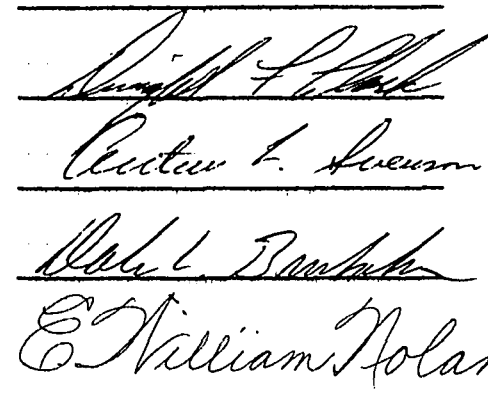

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ABSTRACT

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In surveying the curriculum field it is apparent that it has a pervasive ahistorical quality to it. Confusion exists as to the basic meanings of terms such as curriculum, instruction, theory, education, and practice. Those interested in curriculum are presently engaged in studying the field itself and their role in it. The leading writers are divided into camps with one camp devoted to the linear model supporting behavioral approaches and the other supporting more open, less specified approaches.

A leader in the field of curriculum, Joseph Schwab, pronounced the curriculum field moribund and suggested that a new language was needed. The use of any language is both value based and value laden for language itself is a symbol system, the paradox being that language must be used to discuss language. Recognizing and acknowledging the above, those interested in building a new language for curriculum must turn to those values and stated objectives commonly associated with education: the discovery and/or application of knowledge. Both the discovery and application of knowledge involves one in the creative process. It follows that the language of creativity describes the curriculum

process and therefore one must better understand the creative process itself.

Most of the research and writing on the creative process has occurred during the last quarter of a century. These studies have attempted for the most part to identify the characteristics of the creative person, the factors involved in creativity, the stages of creativity, the results (products) of creativity, and the environmental conditions which foster creativity. The creative person has been treated as unusual or gifted, and needs therefore special treatment. The present writer believes that all persons possess the ability to engage themselves in the creative process. Therefore the focus of this dissertation is on the creative process itself and its implications for a language of curriculum.

Those who have studied creativity have focused on five areas: personality, problem, process, product, and environment, or psycho-social milieu. The specific characteristics of each of these areas, particularly the language which describes the interrelationship between them, most clearly identifies the essence of curriculum.

The specific terminology associated with each dimension is as follows: (1) personality: independence, originality, sensitivity, internal resources, openness, internal control, courage, and bi-sexuality; (2) problem: parturiency, articulation, heuristics, radical, disparity,

and synthesis; (3) process: exposure, divergence, conversion, convergence, and expression; (4) product: generative, reformulation, originality, relevancy, hedonics, complexity, and condensation; (5) psycho-social milieu: movement, facilities, freedom, permutation, and support.

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CHAPTER I

PERSPECTIVES

Central to education is the curriculum process. The triteness of this cliche is exceeded only by the pervasive nature of the truth that the statement characterizes. Despite the fact that curriculum occupies a central position in education, surprisingly little agreement is to be found among curriculum experts either on the nature of the curriculum process or in the processes of change or development of curriculum. In fact, one could say that the curriculum field possesses a vague and unstructured past, a tentative and divided present, and an unplanned and uncertain future. Arno Bellack described this state as the "pervasive ahistorical posture of the curriculum field."[1]

Most writers cite the 1920's as the period when curriculum emerged as a professional activity.[2] Beyond general agreement on a beginning date for the emergence of

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[1]Arno A. Bellack, "History of Curriculum Thought and Practice," Review of Educational Research: Curriculum (June, 1969), p. 285.

[2]Among other writers, see H. L. Caswell, "Emergence of the Curriculum as a Field of Professional Work and Study," Precedents and Promises in the Curriculum Field, ed. H. E. Robinson (New York: Teachers College Press, 1966), pp. 1-11, and Herbert Kliebard, "The Curriculum Field in Retrospect," Technology and the Curriculum, ed. P. W. F. Witt (New York: Teachers College Press, 1968), pp. 69-84.

curriculum as a professional activity, the history of the curriculum movement is incompletely documented. Bellack identified what he considered the yawning gaps in historical knowledge about the curriculum field and then suggested the focus of attention that such history, if written, should take:

> Critical studies that trace the development of the curriculum field beyond its formative years are much needed. Of special importance would be investigations of the 1940's when the war caused severe dislocations in the schools, and the 1950's in which a new breed of reformers led a vigorous reform and wrested leadership from the curriculum specialists who traced their professional lineage to Bobbitt and Charters. Such inquiries should focus attention not only on the development of curriculum proposals and doctrines championed by individuals and organizations, but also on the impact of these proposals on actual educational practices.[3]

Lawrence Cremin suggested that "one of the great lacks to date has been a sufficient number of detailed, critical studies of individual educators."[4] Mary Louise Seguel responded the following year with a book which examined thought about curriculum study from the 1890's to the late 1930's by analyzing the views of seven influential men.[5] Charles Murray, Frank McMurry, John Dewey, Franklin Bobbitt, W. W. Charters, Harold Rugg, and Hollis Caswell were

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[3]Arno A. Bellack.

[4]Lawrence A. Cremin, The Wonderful World of Ellwood Patterson Cubberly (New York: Bureau of Publications, Teachers College, Columbia University, 1965), p. 79.

[5]Mary Louise Seguel, The Curriculum Field, Its Formative Years (New York: Teachers College Press, 1966).

considered from the standpoint of how each perceived the educational situation in his own time.

THE PRESENT STATE OF THE CURRICULUM FIELD

In May 1969, Stanford University hosted the Cubberly Curriculum Conference for the purpose of bringing together curriculum theorists and directors of curriculum projects to discuss problems peculiar to the field of curriculum. The leading conference papers were published in a book entitled Confronting Curriculum Reform. The emphasis in the great majority of the papers presented was on behavioral objectives and more specific ways to "measure" outcomes. For example, "Mastery Learning and Its Implications for Curriculum Development," a paper delivered by Benjamin S. Bloom, had as one of its conclusions:

> C. Summative Evaluation. In order to develop mastery learning in students, one must be able to recognize when students have learned it. Teachers must be able to define what they mean by mastery and they must be able to collect the necessary evidence to establish whether or not a student has achieved it.
>
> The specification of the objectives and content of instruction is one necessary precondition for informing both teachers and students about the expectations. The translation of the specifications into evaluation procedures helps to define further what it is that the student should be able to do when he has completed the course. The evaluation procedures used to appraise the outcomes of instruction (summative evaluation) help the teacher and student know when the instruction has been effective.[6]

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[6] Benjamin S. Bloom, "Mastery Learning and Its Implication on Curriculum Development," Confronting Curriculum Reform, ed. Elliot W. Eisner (Boston: Little Brown, 1971), p. 39.

Without analyzing in great detail some of the implications which flow from this statement, it is adequate to describe the idea and its implications as illustrative of the direction that curriculum is moving: emphasis in curriculum development is being placed upon the establishment of specific objectives and precise measurements which will indicate the degree of accomplishment of these objectives. Another of the implications is that the teacher knows (has mastered) all there is to know about a subject, and the problem is simply one of measuring how effectively the teacher "taught."

Growing out of the direction established by Bloom have been similar statements or spinoffs from these specifics: Tyler's rationale[7] and Mager's objectives.[8] A more recent development threatens to "lock in" or solidify the behavioral objectives approach to curriculum: the concept of accountability. This notion will probably have an increasing effect upon future thinking in curriculum. One authority has stated that "Up to three years ago the Education Index recorded no articles with titles carrying the word 'accountability.' In the volume for 1969-70, four, such articles appeared. In order to accommodate the spate

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[7]Ralph Tyler, Basic Principles of Curriculum and Instruction (Chicago: University of Chicago Press, 1950).

[8]Robert F. Mager, Preparing Instructional Objectives (Palo Alto: Fearon Publishers, 1962).

of new material since then, the editors had to set up a special category in the Index which they called 'Accountability in Education.' Between July, 1970 and December, 1971, 88 titles have appeared under that category."[9]

Bloom, Tyler and Mager all stressed teaching that which is measurable. Accountability provides a framework for isolating the accomplishment of these objectives. The assumption is that there exists a finite body of knowledge which can be staked out and identified if enough experts can be brought together. After determining what this finite body of knowledge consists of, the problem becomes one of mechanics: how is this finite body of knowledge to be sliced into bite-sized bits which can be absorbed by the learner? The teacher, the learner and the administrator are then held "accountable" for accomplishing these objectives.

One article described the dilemma faced in seeking a clear definition of "curriculum":

> One of the anomalies in the discussion of curriculum design, curriculum construction, or curriculum organization in the last twenty years is the inconsistency between the definition of curriculum and the descriptions of curriculum in much of the educational literature. Curriculum is defined in terms of the sum of the experiences that a student has under the guidance of the school. On the other hand, curriculum is often described as a written outline that stresses or assumes the validity of a fixed group of graded and required facts, skills, and activities. Gradually, these letter

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[9]Henry S. Dyer, "School Evaluation: A Realistic Response to Accountability," The North Central Association Quarterly, 46, No. 4 (Spring, 1972).

> descriptions are coming to be called curriculum outlines, curriculum resources, or curriculum guides.[10]

Macdonald identified both the curriculum theory dilemma and the basis of its existence:

> Curriculum theory and theorizing may be characterized as being in a rather formative condition, for essentially there are no generally accepted and clear-cut criteria to distinguish curriculum theory and theorizing from other forms of writing in education. The present situation may be summarized by saying that curriculum theory and theorizing exists because a fair number of thoughtful and respected professional persons say they do it and that it exists.[11]

Macdonald, in a paper entitled "Responsible Curriculum Development," challenged many of the assumptions made by those who advocate specific behavioral objectives. His paper, which was delivered at the Cubberly Curriculum Conference mentioned above, leveled a blistering attack on the taxonomies and rationales:

> The production of the taxonomies is significant evidence of an academic mentality which utilizes technical rationality divorced from consideration of ends. Thus, what can be done and measured becomes what ought to be done. . . .
>
> Little brothers to the taxonomies are what are called behavioral objectives. By this I mean those who have taken the so-called "Tyler" rationale and turned it into a process of grafting or pasting on specific cognitions or affects or actions through a form of behavior modification techniques. The taxonomy offers these people an easy authoritative source to build

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[10]Nolan C. Kearney and Walter W. Cook, "Curriculum," Encyclopedia of Educational Research (New York: The Macmillan Co., 1960), p. 360.

[11]James B. Macdonald, "Curriculum Theory," Journal of Educational Research, 64, No. 5 (January, 1971), 196.

> their "nitty-gritty" programs on. Unfortunately they rarely get beyond the cognitive domain in any meaningful way.[12]

Curriculum theorists seem to be polarized between the behavioral objectives approach advocated by Bloom, Tyler et al and the "ecological" approach suggested by Macdonald. The distinctions between these two camps are great indeed: Bloom and Tyler suggest that emphasis should be placed upon that which is measurable while Macdonald suggests, or implies, that release of human capacities would likely result in unpredictable behavior patterns; Bloom and Tyler would concentrate only on those areas which avoid dilemmas, disparity and contradictions, whereas Macdonald implies that "this is where the action is."

While the field of curriculum is relatively new as a subject area, considerable evidence exists which would indicate that it is already beginning to engage in massive studies of self-examination, an acknowledgment that disparity exists. The Cubberly Conference was but one example of the self-study of curriculum theorists. A selection of titles from a publication by the NEA entitled A Selected Guide to Curriculum Literature: An Annotated Bibliography reflects both disparity and concern with basic curriculum theory. George A. Beauchamp's Curriculum Theory

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[12] James B. Macdonald, "Responsible Curriculum Development," Confronting Curriculum Reform, p. 124.

is listed under "Theory needed in curriculum." Directly following this annotated note is an article by Hollis Caswell called "Sources of Confusion in Curriculum Theory," and finally, a monograph by Joseph J. Schwab entitled The Practical: A Language for Curriculum.[13]

Schwab's monograph is a powerful document which seeks a reconciliation of curriculum disparity through a new language, the practical. His thesis, if accurate, is devastating:

> I shall have three points. The first is this: the field of curriculum is moribund. It is unable, by its present methods and principles, to continue its work and contribute significantly to the advancement of education. It requires new principles which will generate a new view of the character and variety of its problems. It requires new methods appropriate to the new budget of problems.
>
> The second point: the curriculum field has reached this unhappy state by inveterate, unexamined, and mistaken reliance on theory. On the one hand, it has adopted theories (from outside the field of education) concerning ethics, knowledge, political and social structure, learning, mind, and personality, and has used these borrowed theories theoretically, i.e. as principles from which to "deduce" right aims and procedures for schools and classrooms. On the other hand, it has attempted construction of education theories, particularly theories of curriculum and instruction.[14]

He went on to point out that education's reliance on inappropriate theory as a result of the two points mentioned above has ". . . led to grave difficulties (incoherence of

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[13]Joseph J. Schwab, The Practical: A Language for Curriculum (Washington, D.C.: National Education Association, 1970).

[14]Ibid., p. 1.

the curriculum, failure and discontinuity in actual schooling) . . ." Schwab's third and major point is at once optimistic and prescriptive:

> The third point, which constitutes the main body of my thesis: There will be a renascence of the field of curriculum, a renewed capacity to contribute to the quality of American education, only if curriculum energies are in large part diverted from theoretic pursuits (such as the pursuit of global principles and comprehensive patterns, the search for stable sequences and invariant elements, the construction of taxonomies of supposedly fixed or recurrent kinds) to three other modes of operation. These other modes, which differ radically from the theoretic, I shall call, following tradition, the practical, the quasi-practical, and the eclectic.[15]

Without examining Schwab's solution of the practical, his monograph is noteworthy because it is constructive: by acknowledging that the curriculum field is "moribund" he does not despair but instead calls for new principles which will generate a new view of the character and variety of its problems.

LANGUAGE AND CURRICULUM[16]

When Schwab suggested that the curriculum field was moribund and that a new language was needed, he raised a new series of dilemmas for those who are concerned about

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[15] Ibid., p. 2.

[16] The writer uses the terms education, curriculum and learning synonymously. That is, they all focus on what the person learns wherever he learns it. Education, curriculum and learning, therefore, are not confined to schools; they refer to both predetermined (intended) outcomes and emerging outcomes, and probably more importantly, unpredictable outcomes.

curriculum. Huebner, for example, illustrated one of the fundamental problems when he said that "the educator participates in the paradoxical structure of the universe. He wishes to talk about language, but must use language for his talk. He infers that meanings exist, but has only language, or other symbol systems, as a vehicle for his inferences."[17] He further described curricular language problems by noting that "two tyrannical myths are embedded deeply in curricular language. One is that of learning--the other that of purpose. These have become almost magical elements within curricular language. The curricular worker is afraid to ignore them, let alone question them, for fear of the wrath of the gods."[18]

Language itself can only be defined with the greatest difficulty. One authority, for example, noted that language is " . . . a purely human and non-instinctive method of communicating ideas, emotions, and desires by means of voluntarily produced symbols."[19] The question of whether or not language is entirely a man-constructed system or something more mystically based has not been entirely resolved. Synectics theory, one of the most thoroughly

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[17]Dwayne Huebner, "Curricular Language and Classroom Meanings," Paper presented at the 10th Annual A.S.C.D. Research Institute, Eastern Section, Miami Beach, Florida, November, 1964, p. 1.

[18]Ibid., p. 2.

[19]E. Sapir, Language (New York: Harcourt, Brace, 1921), p. 7.

worked-out and tested theories of creativity, has grappled with the fundamental question of the origin and role of language in the creative process. Synectics combines both the practical experience with contemporary language theory which holds that language is essentially metaphorical in its nature and development: "This theory is grounded in the school of neurophysiology which maintains that symbolization is an inherent function of the nervous system, that the nervous system does not return direct impressions of the external world but indirect symbolic representations. This position further maintains that the rudimentary symbolization process of the nervous system is elaborated on higher and higher levels, culminating in the brain."[20]

As far as we know, man alone possesses the unique capacity for representing experience by verbal (as well as written) symbols. Language is a basic symbol system of man and all other systems are derived or created from this basic system. In his classic Mind, Self, and Society, George Herbert Mead, the foremost social thinker in the development of the symbolic interactionist perspective, put it this way: "Symbolization constitutes objects not constituted before, objects which would not exist except for the context of social relationships wherein symbolization occurs. Language

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[20]William J. J. Gordon, Synectics: The Development of Creative Capacity (New York: Harper and Row, 1961), pp. 111-112.

does not simply symbolize a situation or object which is already there in advance; it makes possible the existence or the appearance of that situation or object, for it is part of the mechanism whereby that situation or object is created."[21] Mead's statement, like most important statements about language, is obvious; yet, it is the obvious that is frequently overlooked or ignored. It is through language that man constructs a social environment. Reality is not something that exists outside of man, but rather reality is what is defined by his symbols. Even the difference between objective and subjective is a construction of the human mind for they are systems which have evolved from a basic system: one simply must use language to talk about language. The implications of this fact for curriculum development are clearly stated by Macdonald and Clark. The beginning point in curriculum development, the establishing of objectives, is value-laden. "If one makes the wrong assumption or expresses the wrong ideal at the beginning, no amount of technical or scientific technique can convert an error into a sound principle."[22] They continued by saying that "what in effect takes place is that a

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[21]George Herbert Mead, Mind, Self, and Society (Chicago: The University of Chicago Press, 1934), p. 78.

[22]James B. Macdonald and Dwight Clark, "Critical Value Questions and the Analysis of Objective and Curricula," (Greensboro, N.C.; In Galley Proof, January 1973).

personal bias or preference is in operation under the guise of an objective and scientific determination."[23]

Acknowledging the value dimension of language and curricular choices leads to an examination of a system that builds on the previous discussion in this section of the chapter.

CREATIVITY AND ITS IMPLICATIONS FOR CURRICULUM

Following Schwab's suggestion to look elsewhere for an understanding of curriculum, the language of a system of creativity developed in this dissertation explains at once both the curriculum development process and the essence of curriculum itself. In other words, the writer will demonstrate that the language of creativity describes the curriculum process.

Creativity and creative behavior have long been considered "different" or "unusual" or "abnormal" or "gifted." An entire discipline within the field of education is devoted to "educating the gifted." They (the creative) are placed at the opposite end of the spectrum from "special education." Many theoretical explanations have been advanced to explain the nature of the creative person or the creative process. Most of these theories have reenforced the notion that the creative person is

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[23] Ibid.

outside the norm and deserves a different theory to explain his behavior. Among these theoretic formulations, one will find as an explanation of creative behavior: self-actualization,[24] structure of the intellect,[25] regression in the service of the ego,[26] restitution for destructive impulses,[27] sublimation,[28] compensation,[29] and transactional creativity.[30]

The relationship between creativity and education (and the language of curriculum in particular) is a central focus of this dissertation. Education has as its goal the discovery of knowledge and/or the application of knowledge, both of which are the result of involvement in the creative process. In fact, they are the product of such engagement.

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[24]Abraham H. Maslow, "Creativity in Self-Actualizing People," Creativity and Its Cultivation, ed. H. H. Anderson (New York: Harper, 1959).

[25]J. P. Guilford, Intelligence, Creativity, and Their Educational Implications (San Diego: Robert K. Knapp, 1968).

[26]Ernst Kris, Psychoanalytic Explorations in Art (New York: International University Press, 1952).

[27]M. Grotjohn, ed., "Creativity and Freedom in Art and Analysis," Beyond Laughter (New York: McGraw-Hill, 1957).

[28]Sigmund Freud, "The Relation of the Poet to Day-Dreaming" (1908) Collected Papers, trans. Joan Riviere (London: Hogarth Press, 1948), IV, 173-183.

[29]A. Adler, Problems of Neurosis (New York: Cosmopolitan Book Corp., 1930).

[30]Irving A. Taylor, "A Transactional Approach to Creativity," Journal of Creative Behavior, 5, No. 3 (Third Quarter, 1971), 190-198.

Traditionally, education has emphasized the products of creativity but has not focused on curricula which would foster the creative process. It is therefore the aim of this dissertation to explore the relationship between creativity as a process and education as a process in order to build a language of curriculum and instruction.

CHAPTER II

DIMENSIONS OF CREATIVITY

In the previous chapter, the need for a language of curriculum and instruction was indicated after which it was argued that research and writing on creativity as a process would provide a paradigm for building a language of curriculum and instruction. In this chapter, attention will be given to five dimensions of creativity which have been widely discussed in the research literature. The inquiry will examine and analyze the problem, the product, the process, the personality, and the psycho-social milieu of creativity.

THE PROBLEM

What Is Creativity?

This examination of the dimensions of creativity will begin by searching out an adequate description and definition of creativity. Students of many disciplines use the word "creativity" to describe varying types of activity, most of which involve bringing something into being. The difficulty in setting down in concrete terms a definition which will encompass all disciplines lies in the very breadth of the areas involved.

Revelation? Some have described creativity in terms of highly subjective personal experiences, revelation, blinding flashes of insight, etc. One of the best known of these is Nietzsche's account of the inspiration which drove him to write Thus Spake Zarathustra. "A thought suddenly flashes up like lightning; it comes with necessity. I have never had any choice in the matter. . . . There is the feeling that one is utterly out of hand, with the very distinct consciousness of an endless number of fine thrills and titillations descending to one's very toes. There is a depth of happiness in which the most painful and gloomy parts do not act as antitheses to the rest, but are produced and required as necessary shades of color in such an overflow of light."[1]

Perseverance? Others, describing the period of creativity, speak of hours, days, even years, of painstaking, backbreaking work. In his description of the way one becomes a creative artist, Sir Joshua Reynolds said that it was not through inspiration, some special gift, magical power, or intervention of a supernatural agency, but rather from hard work, an infinite amount of practice and painstaking imitation of the great masters.[2]

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[1]Frederich Nietzsche, Ecce Homo: The Philosophy of Nietzsche (New York: Modern Library, 1927), pp. 896-897.

[2]Sir Joshua Reynolds, Longinus On the Sublime and Reynolds Discourses on Art (Chicago: Packard and Co., 1945), p. 164.

May never be known. A third opinion holds that it may never be possible to isolate and actually define the criteria which make up creativity because of the nonrational elements which appear to dominate the creative process. Brand Blanshard stated that these unconscious operations "are affected by factors so manifold and subtle, by so many repressed fears and wishes, so many forms of fatigue in mind and body, such obscure and unpredictable changes in resolution, in interest, in mood, in cortical nutrition,"[3] that our knowledge of them must remain vague and incomplete. He did hold out hope, however, when he noted that creative work never occurs as a matter of caprice but is governed by the same laws which control all mental functions.[4]

Definition. Blanshard's somewhat pessimistic viewpoint notwithstanding, attempts at defining and delineating the components of creativity have been made. E. Paul Torrance has defined creative thinking as "the process of sensing gaps or disturbing missing elements; forming ideas or hypotheses concerning them; testing these hypotheses; and communicating the results, possibly modifying and retesting the hypotheses."[5] Sir Frederick Bartlett used the term

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[3]Brand Blanshard, The Nature of Thought (London: George Allen and Unwin, 1939), II, p. 211.

[4]Ibid.

[5]E. Paul Torrance, Guilding Creative Talent (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1962), p. 16.

"adventurous thinking" and said it was "getting away from the main track, breaking out of the mold, being open to experience, and permitting one thing to lead to another."[6] R. M. Simpson, in an early work on creativity, defined it as the initiative which one manifests by his power to break away from the usual sequence of thought into an altogether different pattern of thought.[7] Carl R. Rogers defined creativity as "the emergence in action of a novel relational product, growing out of the uniqueness of the individual on the one hand, and the materials, events, people, or circumstances of his life on the other."[8] Sidney J. Parnes called it "behavior which demonstrates both uniqueness and value in its product.[9] Malcolm Provus said that creativity is "that human activity which produces a self-generating solution to a new and pressing problem . . . behavior which is new to the learner."[10] Many other definitions could be cited but

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[6]Sir Frederick Bartlett, Thinking (New York: Basic Books, Inc., 1959).

[7]R. M. Simpson, "Creative Imagination," American Journal of Psychology, 33 (1922), 234-243.

[8]Carl R. Rogers, "Toward a Theory of Creativity," A Source Book for Creative Thinking, eds. Sidney J. Parnes and Harold F. Harding (New York: Charles Scribner's Sons, 1962), p. 65.

[9]Sidney J. Parnes, "Imagination: Developed and Disciplined," Instructional Media and Creativity, eds. Calvin W. Taylor and Frank E. Williams (New York: John Wiley and Sons, Inc., 1966), p. 229.

[10]Malcolm M. Provus, "Some Personal Observations on Creativity," Instructional Media and Creativity, p. 128.

the concept of the creative act as the combination of hitherto unrelated ideas or concepts into something new, unique and original is characteristic of most.

The Importance of Creativity

A workable definition of creativity having been established, the next matter of discussion is the importance of creativity to the individual and to the society in which he lives, a question, for the most part, of recent origin. Only in the past two decades has a great amount of serious attention and research been given to it. It is becoming more and more apparent, however, that many people see in the creative process the "hope for the future."

To the person. Theorists generally hold the view that the urge to create is an inherent factor in man's psychological being and that societal pressures (among others) effectively combine to cause him to lose as it were his creative abilities. To the extent that he retains or regains those abilities, he is psychologically healthy. H. H. Anderson stated, "There is essential agreement among those authors who comment on these topics, and no disagreement among them, that mental health and high utilization of one's creative potentials are closely associated. . . . The consensus of these authors is that creativity is an

expression of a mentally or psychologically healthy person."[11] As Antonia Wenkart put it, "Creativity is an exquisitely human faculty that is essential for the evolution of man and for his personal growth."[12] H. B. Lee believed that creativity is a healing process, that it establishes a personal integrity.[13] Abraham H. Maslow's viewpoint that the self-actualizing person is psychologically healthy is well known.[14] E. Paul Torrance warned of the behavior problems and learning difficulties which may result if creativity is repressed; he believed that such repression, especially if prolonged, may lead to neurotic conflicts or possibly psychoses.[15]

Erich Fromm has stated that of the various basic needs of man, there is one which drives him to transcend himself as a mere creature of nature, to overcome the passivity and accidentalness of his existence by becoming a creator. To the extent that he can create, he can discover

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[11]H. H. Anderson, ed., Creativity and Its Cultivation (New York: Harper, 1959), p. 248.

[12]Antonia Wenkart, "Creativity and Freedom," The Creative Imagination: Psychoanalysis and the Genius of Inspiration, ed. Hendrik M. Ruitenbeek (Chicago: Quadrangle Books, 1965), p. 337.

[13]H. B. Lee, "A Theory Concerning Free Creation in the Inventive Arts," Psychiatry, III, No. 2 (May, 1940), 252.

[14]Abraham H. Maslow, Toward a Psychology of Being (Princeton, N.J.: D. Van Nostrand Co., 1962), Chapters 6-10.

[15]E. Paul Torrence, Guiding Creative Talent, pp. 125-141.

his humanness, and to this extent he can experience purpose.[16] Ralph Harper echoed this theme when he said that whether or not a man achieves a state of humanness, whether he achieves a relationship of love toward others, whether he moves from a state of isolation and alienation to a relationship of responsibility and lawfulness depends upon his creative confrontation with the world.[17] M. M. Tumin also equated being creative with essential humanness.[18]

To society. Vital as the element of creativity is in the life of an individual, even more importance has been attached to its value to society. The creative person, the kind of person who is described later in this chapter, is seen by many to be the only one who can lend true insight to the problems which face society today and propose solutions for those problems. J. P. Guilford noted that the social implications of the space age and its technology are responsible for the upsurge in interest in creativity; he felt that the survival of our way of life in the world is at

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[16]Erich Fromm, "Value, Psychology, and Human Existence," New Knowledge in Human Values, ed. A. H. Maslow (New York: Harper, 1959), pp. 153ff.

[17]Ralph Harper, "Significance of Existence and Recognition for Education," Modern Philosophies and Education, NSSE 24th Yearbook (Chicago: University of Chicago Press, 1955), Chapter VIII.

[18]M. M. Tumin, "Education, Development and the Creative Process," Aesthetic Forms and Education, ed. M. F. Andrews (Syracuse: Syracuse University Press, 1958), pp. 26ff.

stake.[19] Rogers has said, "I maintain that there is a desperate social need for the creative behavior of creative individuals."[20] Joseph Schwab argued in 1961 that the rate at which scientific knowledge is increasing will, in all likelihood, render present knowledge in science obsolete by 1975, and said that there was no reason to suspect that the increase will necessarily cease at that time. He concluded that novel and radical solutions will be necessary.[21] If the creative person is indeed as described, original, independent, flexible, tolerant of complexity and ambiguity, and psychologically healthy, the task must be his.

Arnold Toynbee, in his article entitled, "Is America Neglecting Her Creative Talents?" noted that "the outstanding creative ability of a fairly small percentage of the population is mankind's ultimate capital asset and the only one with which Man has been endowed."[22] Torrance commented that "democracies collapse only when they fail to use intelligent, imaginative methods for solving their

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[19]J. P. Guilford, "Traits of Creativity," Creativity and Its Cultivation, pp. 142-143.

[20]Carl R. Rogers, "Toward a Theory of Creativity," p. 64.

[21]Joseph J. Schwab, "Some Reflections on Science Education," BSCS Newsletter (Sept. 1961), p. 8.

[22]Arnold Toynbee, "Is America Neglecting Her Creative Talents?" Widening Horizons in Creativity, ed. Calvin W. Taylor (New York: John Wiley and Sons, Inc., 1964), p. 4.

problems."[23] A final thought comes from Clyde E. Curran who has pointed out that highly creative, self-actualizing individuals live in society just as everyone else, yet are not molded into society's patterns; that is, they escape the full impact of cultural conditioning. He implied that this is because the creative person's experience reaches so deeply into his own being that he perceives Being itself. For this reason, he concluded, the creative person can not only evade cultural determinism but even shape and divert social affairs by the force of his own creative personality.[24]

THE PRODUCT

Tangibility

The criteria of creativity set forth earlier in this chapter evoke essential agreement among theorists. A difference of opinion exists, however, as to the creative product; some hold that a tangible product is not a necessity; others, in effect, say, "no product, no process." For the most part, the participants in this controversy align themselves according to their own definition of creativity. If it is seen as a style of life as Maslow

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[23]E. Paul Torrance, Guiding Creative Talent, p. 6.

[24]Clyde E. Curran, "History and the Creative Individual," Journal of Humanistic Psychology (Fall, 1961), p. 60.

does, then an actual object to symbolize termination of the creative act is not required. If, however, the creative act is seen as some sort of a transforming process upon the environment, some physical evidence must be produced.

Morris I. Stein, whose research work has been in the field of art, insists upon a concrete object being formed. His definition of creativity includes the criterion of communicability; that is, the creative person must be able to communicate his discoveries to society and does this by means of the product.[25] Another theorist who regards a tangible product as the natural termination of creativity is R. N. Wilson.[26] The opposing view is held by Maslow who defines creativity in terms of personality transformations (self-actualizing) rather than in terms of the quantity of objects which one has produced.[27] Frank Barron seems to support this view when he says that no product is necessary for creativity. "One could just as well construe creativity as an internal process continually in action but not always observable, or perhaps in some cases fundamentally

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[25]Morris I. Stein, "Creativity and Culture," Journal of Psychology, 36 (Oct. 1953), 142-161.

[26]R. N. Wilson, "Poetic Creativity, Process and Personality," Psychiatry, 17 (1954), 163-76.

[27]Abraham H. Maslow, Motivation and Personality (New York: Harper and Bros., 1962).

unobservable."[28] It is this writer's viewpoint that tangible products which result from the creative act are essential to the creative process. In other words, something must be perceived in order to say that creativity has taken place.

Combinatorial Activity

Most definitions of creativity place primary importance on the fact that it is a combinatorial act, that is, creativity is a fusion of two or more ideas or concepts. Mednick and Mednick pointed out that this is not a new concept when they noted that Lucretius had said that creative thinking was not a gift from the gods or some magical talent that some individuals were blessed with, but simply a product of the reassembling of old knowledge. They then went on to say that "the basic task in the creative process is to bring together, in some useful fashion, ideas which are usually remote from each other."[29] They claimed that the more mutually remote the elements of the combination, the more creative the process or solution, and that the creative process is facilitated by any state of affairs which tends to maximize the ideational contiguity of

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[28]Frank Barron, "Process Versus Product in Creativity," Widening Horizons in Creativity, pp. 112, 113.

[29]Sarnoff A. Mednick and Martha T. Mednick, "An Associative Interpretation of the Creative Process," Widening Horizons in Creativity, p. 55.

otherwise disparate ideas.[30] R. J. Hallman, in his unpublished doctoral thesis, maintained that this dimension of creativity is logically implied by the most fundamental characteristic of human creativity, the need to work with materials which man himself has not created. "Lacking the omnipotence and omniscience of God, man cannot create out of nothing; he cannot create in the sense of bringing something into being which previously had no existence of any kind. This limitation therefore makes it necessary that man create by BRINGING ALREADY EXISTING ELEMENTS INTO A DISTINCTIVE RELATION TO EACH OTHER."[31]

Other theorists, noting this same criterion, have used varying terminology to describe it: J. E. Arnold described creativity as that which combines all past experience into a new pattern, into a new configuration;[32] Jerome Bruner called it combinatorial activity;[33] Peter McKellar named it a fusion of perceptions which have long

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[30] Ibid.

[31] Ralph J. Hallman, "Implications of Creativity for Philosophies of Education," Diss. Claremont Graduate School and University Center, 1964, p. 77.

[32] J. E. Arnold, "Creativity in Engineering," Creativity: An Examination of the Creative Process, ed. P. Smith (New York: Hastings House, 1959), pp. 33-46.

[33] Jerome S. Bruner, On Knowing (Cambridge, Mass.: Belknap Press, 1962), p. 20.

lain dormant in the unconscious;[34] Ralph Gerard also believed that a combining of elements marked the creative process;[35] Irving A. Taylor said this criterion was the molding of experiences into organization patterns;[36] Lawrence Kubie used the term unexpected connections;[37] Henry A. Murray described creativity as a compositional process;[38] and Anderson spoke of integration.[39]

All of these agree that creativity involves the synthesizing, integrating, or reorganizing of past experiences with present, ongoing perceptions. Hallman, however, went on in his description of this criterion, to state that there is a further refinement to be observed, for "creativeness in its most dramatic moments is something more than . . . a uniting of the past and the present."[40] This

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[34]Peter McKellar, Imagination and Thinking (New York: Basic Books, 1957), p. 11.

[35]Ralph W. Gerard, "What is Imagination?" Selected Readings on the Learning Process, eds. T. J. Harris and W. E. Schwahn (New York: Oxford Univ. Press, 1961), pp. 81-89.

[36]I. A. Taylor, "The Nature of the Creative Process," Creativity: An Examination of the Creative Process, p. 67.

[37]Lawrence S. Kubie, Neurotic Distortion in the Creative Process (Lawrence, Kansas: Univ. of Kansas Press, 1958), p. 50.

[38]Henry A. Murray, Creativity and Its Cultivation, p. 99.

[39]H. H. Anderson, Creativity and Its Cultivation, p. 121.

[40]Ralph J. Hallman, p. 84.

refinement, he said, concerned not merely a combination of elements into a new structure, but a re-combining of them. As documentation, he cited Spearman's reference to the "education of correlates" and said that creativity is not merely the capacity to connect elements in a new way, but also the ability to transplant these new combinations onto new and previously unrelated materials.[41]

New, Unique and Original

Just as there is common agreement that creativity involves combinatorial activity, a similar understanding is held in the criterion of newness and uniqueness. As was noted above, Mednick and Mednick defined creative thinking as consisting of "forming new combinations of associative elements."[42] To show how strongly this criterion is connected with creativity, they asked the conference group at the Fifth (1962) National Conference in the Utah Creativity Research Conference series, to perform an associational exercise in connection with the word "creativity." The answer most often received was "original," next was "new," and thirdly, the word "novel" or "novelty."[43]

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[41]Ibid. See also C. E. Spearman, The Creative Mind (New York: D. Appleton-Century, 1931), p. 22.

[42]Sarnoff A. Mednick and Martha T. Mednick, p. 55.

[43]Ibid.

Barron noted that creation implies radical novelty, whether making utterly anew or out of nothing.[44] Israeli defined originality as "the capacity for the production or creation of something new."[45] Hebb considered the "re-combination of pre-existent 'mediating processes' to be original and creative."[46] Rogers referred to a novel product.[47] Guilford spoke of the novel aspects of creative thinking.[48] Dougan et al connected originality and creative thinking.[49] Brewster Ghiselin spoke of a new configuration.[50] Irving A. Taylor described organizational patterns that are new and different.[51] Kubie referred to new and

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[44]Frank Barron, Creative Person and Creative Process (New York: Holt, Rinehart and Winston, Inc., 1969), p. 12.

[45]N. Israeli, "Studies in Occupational Analysis," Creativity and the Individual, eds. Morris I. Stein and Shirley J. Heinze (Glencoe, Illinois: The Free Press, 1960), pp. 9-10.

[46]O. O. Hebb, "Problems Relating to Thought," Creativity and the Individual, pp. 71-72.

[47]Carl R. Rogers, "Toward a Theory of Creativity," p. 65.

[48]J. P. Guilford, "Basic Problems in Teaching for Creativity."

[49]Catherine P. Dougan, Ethel Schiff, and Livingston Welch, "Originality Ratings of Department Store Display Department Personnel," Journal of Applied Psychology, 33 (1949), 31-35.

[50]Brewster Ghiselin, ed., The Creative Process (New York: Mentor, The New American Library, 1952), p. 20.

[51]Irving A. Taylor.

unexpected connections.[52] Murray said the product must be a new image, experience or object.[53]

Practical

Another element is held by many to be indispensable to the creative product, that it be useful to someone at some time or place. Arnold thought that the creative product in some manner satisfies a basic need of the creator and perhaps of society.[54] Henri Poincare held that the essence of creativity is the production of combinations; the only qualification of these connections was that they were useful.[55] Stein said that originality must be tenable, that is, must be useful to some group of people at some time,[56] and Parnes declared that the product must have value.[57] The point appears to be debatable since some consider it unnecessary. Murray, for example, said that the new image, experience, or object which resulted from the creative

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[52]Lawrence S. Kubie.

[53]Henry A. Murray.

[54]J. E. Arnold.

[55]Henri Poincare, The Foundations of Science (New York: Science Press, 1913), pp. 383ff.

[56]Morris I. Stein, "A Transactional Approach to Creativity," The 1955 University of Utah Research Conference, ed. Calvin W. Taylor (Salt Lake City: Univ. of Utah Press, 1956), p. 171.

[57]Sidney J. Parnes, "Imagination: Developed and Disciplined."

process need not have any value for man, nor any consequences of a practical nature, nor even any destiny of its own. Its only essential ingredient is that it exist as a novel composition.[58] Ghiselin seemed to agree with this concept when he said that "the end to be reached, then, in any creative process . . . is some specific order urged upon the mind by something inherent in its own vital condition of being and perception, yet nowhere in view."[59] Whether this criterion is accepted or not, however, does not negate the fundamental opinion held by most, that whatever is produced is a result of a combination of hitherto uncombined items, factors, ideas, or concepts into something new, unique and original.

THE PROCESS

Though the creative product may differ radically, the creative process is the same. Rogers assumed " . . . that there is no fundamental difference in the creative process as it is evidenced in painting a picture, composing a symphony, devising new instruments of killing, developing a scientific theory, discovering new procedures in human relationships, or creating new formings of one's own

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[58]Henry A. Murray.

[59]Brewster Ghiselin.

personality as in psychotherapy."[60]

Different theorists have analyzed the creative process in different ways and though terminology may differ and varying divisions made, the basic plan seems similar. Kris, for instance, divided the creative process into two activities, inspiration, during which one draws on unconscious material, and elaboration, when the creator views and molds his work from the outside.[61] Rossman viewed the creative process as being composed of seven stages: (1) observation of a need or difficulty, (2) analysis of the need, (3) a survey of all available information, (4) a formulation of all the objective solutions, (5) a critical analysis of these solutions for their advantages and disadvantages, (6) the birth of the new idea, or invention, and (7) experimentation to test out the most promising solution and the selection and perfection of the final embodiment by some or all of the previous steps.[62] Osborn also postulated seven stages: (1) orientation, defining the problem, (2) preparation, gathering pertinent data, (3) analysis, breaking down the relevant material, (4) hypothesis, piling

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[60]Carl R. Rogers, "Toward a Theory of Creativity," p. 65.

[61]Ernest Kris, "Psychoanalysis and the Study of Creative Imagination," Bulletin of the New York Academy of Medicine, 29 (1953), 334-351.

[62]J. Rossman, The Psychology of the Inventor, rev. ed. (Washington, D.C.: Inventors Publishing Company, 1931).

up alternatives by way of ideas, (5) incubation, relaxation to invite illumination, (6) synthesis, reorganization, and (7) verification, evaluating the resultant ideas.[63]

Other terminology and divisions have been put forth, but Graham Wallas' classic statement of four stages will be used here as illustrative and representative of many. He termed these stages: preparation, incubation, illumination and verification.[64]

Preparation

According to Wallas, preparation is the stage when the thinker becomes aware of the problem with which he is confronted, begins the collection of information necessary for the solution and investigates the problem from several directions. The period may be as short as a few seconds or may last several years depending on the nature and difficulty of the problem. Wallas included one's entire lifetime of experiences and thoughts in this stage. Murphy agreed when he said that one's whole life is preparation for production, even that mankind's history is preparation for the contributions of succeeding generations.[65] Irving

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[63]Alex F. Osborn, Applied Imagination, 3rd ed., rev. (New York: Charles Scribner's Sons, 1963).

[64]Graham Wallas, The Art of Thought (New York: Harcourt Brace and Company, 1926).

[65]Gardner Murphy, Human Potentialities (New York: Basic Books, Inc., 1958), pp. 129-174.

Taylor used the term "exposure" to describe this particular period in the creative process. He said that it includes many life experiences which are absorbed without any awareness at all on the part of the individual as to how and when they may be helpful or without each being categorized.[66] This stage involves exploratory activities, continual improvement in thinking skills, forming and considering hypotheses, development of techniques, and making attempts at organization.

Donald Johnson recommended broad rather than specific preparation for creative work since the exact nature of the product is unknown.[67] Guilford, too, believed that most training should be general rather than specific.[68] There are times, of course, when the preparation period is long and demanding, as for example, the learning of skills with tools or materials or the procedures necessary for specific tasks. Murray spoke of the creative person's having a great store of contents in the preconscious and the unconscious, and a great fund of knowledge of the world.[69] Stein described an individual in this early

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[66]Irving A. Taylor, p. 62.

[67]Donald Johnson, The Psychology of Thought and Judgment (New York: Harper and Bros., 1955).

[68]J. P. Guilford, "Basic Problems in Teaching for Creativity," Instructional Media and Creativity, p. 74.

[69]Henry A. Murray, p. 106.

stage as being in a state of disequilibrium and said that this state may be self-induced or may result from his being sensitive to some deficiency in the current state of affairs.[70] This brings up the importance of sensitivity and freedom in connection with the creative person. First he must know that a problem exists, or sense an improvement in a situation, or even penetrate some unknown level of thought, and then he must have the psychological and physical freedom to pursue his thinking. These aspects of the creative personality are dealt with in the next section.

Incubation

Wallas conceived of the second stage as that in which the individual does not think of the problem but allows unconscious and involuntary thought to take place. Possibly overlapping the preparation stage, this period may also extend for a very short time or for several months or years. Ghiselin termed this phase "quiescence,"[71] and Taylor said it was the period when "experiences mill and flow freely about."[72] Kris referred to a condition in which the normal separation between id and ego is permeable and

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[70]Morris I. Stein, "Creativity as an Intra- and Interpersonal Process," A Source Book for Creative Thinking, pp. 86-87.

[71]Brewster Ghiselin.

[72]Irving A. Taylor, p. 54.

energy is devoted to bringing to consciousness material ordinarily repressed; this is what he termed "regression in the service of the ego."[73] Maslow spoke of the stage of "voluntary regression,"[74] Ehrenzweig of "surrender of the ego,"[75] and Rogers as "openness to experience."[76] MacKinnon verified the existence of this stage when he pointed out that highly creative people, when blocked in a task, will not give up immediately or even quickly, but will turn temporarily to something else, then come back to the task later.[77]

Incubation has also been called a period in which interference resulting from false starts and erroneous assumptions is eliminated through forgetting thus permitting insight or solution.[78] Gestalt psychologists use the phrase "restructuring the cognitive field" which refers to shedding

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[73]E. Kris.

[74]Abraham H. Maslow, "The Emotional Blocks to Creativity," Journal of Individual Psychology, 14 (1958), 51-56.

[75]Anton Ehrenzweig, The Psychoanalysis of Artistic Vision and Hearing (London: Routledge, 1953), p. 193.

[76]Carl H. Rogers, "Toward a Theory of Creativity," p. 67.

[77]Donald W. MacKinnon, "Instructional Media in the Nurturing of Creativity," Instructional Media and Creativity, p. 183.

[78]Robert S. Woodworth and Harold Schlosberg, Experimental Psychology, rev. (New York: Henry Holt and Co., 1954).

old assumptions and seeing new requirements and possibilities; the passage of time has allowed an erroneous set to die out, thereby leaving the thinker free to restructure the field.[79]

Illumination

The third stage of illumination was said by Wallas to be the occurrence of a flashing thought incapable of being willfully induced and a feeling of pleasure on the part of the thinker as he perceives the solution. He also noted that at times there was a kind of premonition that an important thought was arriving; he called this "intimation." This period represents the brief moment when all of the labor of the preceding periods suddenly organizes itself into a meaningful solution to the problem.

Differing terminology has been employed for this stage: Ghiselin referred to inspiration;[80] Born spoke of a particular perception and its emotional release;[81] Feibleman considered inspiration the awareness of the result of unconscious revisions of impressions;[82] and L. L.

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[79]Max Wertheimer, Productive Thinking, enlarged ed. (New York: Harper and Bros., 1959).

[80]Brewster Ghiselin.

[81]W. Born, "Unconscious Processes in Artistic Creation," Journal of Clinical Psychopathology and Psychotherapy, 7 (1945), 253-272.

[82]J. K. Feibleman, "The Psychology of the Artist," Journal of Psychology, 19 (1945), 165-189.

Thurstone called it "insight."[83] Maier concluded that perception of a solution to a problem "(a) . . . is sudden, (b) there is no conscious intermediate stage, and (c) the relationships of the elements in the final perception are different from those which preceded, i.e. changes in meaning are involved."[84]

Many accounts have been given describing the various "by-chance" happenings during which moments of insight have come. Terms such as "revelation" and "serendipity" have been used, but the fact remains that much preparation beforehand is needed to be able to recognize the possibilities and much hard work is needed afterward to confirm them.

Verification

Wallas held that the result of preparation, incubation and illumination was a formed idea and a plan determined. The last stage then involves verification, the phase in which the idea is tested and reduced to a more precise form. Constant testing, judging and rearranging are characteristic of this phase. Again, it may last a few seconds or may extend over a long period of time. Foshay

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[83]L. L. Thurstone, "The Scientific Study of Inventive Talent," A Source Book for Creative Thinking, p. 52.

[84]N. R. F. Maier, "Reasoning in Humans. The Solution of a Problem and Its Appearance in Consciousness," Journal of Comparative and Physiological Psychology, 12 (1931), 181-194.

referred to this final stage as "closure";[85] Taylor calls it "execution" and says it involves the testing and communication of the work.[86] MacKinnon said: "Insights, however fresh and clever they may seem to be, do not become really creative solutions to problems until their consequences are tested in application and revised and extended to meet the requirements of the situation for which they were first devised. In other words, I am stressing again the processes of evaluation and elaboration, the end aspect of what I have described as the creative process."[87]

A number of things may serve to interrupt or block the creative process at any one of these stages: interruption of thought at a crucial point, inability to overcome an erroneous set, anxiety and tension, and the demands of modern living. The ideal environment for creative thought will be discussed in another section.

Following Wallas' classification of the creative process into four stages, others conducted studies attempting to classify and elaborate further upon his theory. Notable among these were Catherine Patrick's studies involving poets and artists. She concluded that Wallas' stages did indeed

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[85]A. W. Foshay, "The Creative Process Described," Creativity in Teaching, ed. Alice Miel (Belmont, Calif.: Wadsworth, 1961), p. 26.

[86]Irving A. Taylor.

[87]Donald W. MacKinnon, p. 198.

describe the creative process accurately. She noted a stage of preparation followed by incubation, which she defined as the appearance of an idea in an early stage, its recurrence along the way and its incorporation into the final product. She did feel, however, that thinking probably continued to take place in this stage, that the idea had not completely disappeared from consciousness but was temporarily submerged and reappeared occasionally. She also felt that the evidence showed the existence of the third and fourth stages of illumination and verification.[88]

Similar results were described by Hutchinson whose stages of creative thought are similar to those of Wallas. He noted a stage of preparation which included past experience and the acquisition of necessary skills. He called the second phase the stage of frustration because of frequently heightened tension and temporary abandonment of work. The moment of insight, which nearly always occurred during a period of relaxation was given as his third stage followed by the stage of verification, again similar to the Wallas description.[89]

Other theorists tend to verify the existence of four distinct stages though some such as Osborn and Rossman (as

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[88]Catherine Patrick, "Creative Thought in Poets," Archives of Psychology, 26 (1935), 1-74, and "Creative Thought in Artists," Journal of Psychology, 4 (1937), 35-73.

[89]Eliot Dole Hutchinson, How to Think Creatively (New York: Abingdon-Cokesbury Press, 1949).

noted earlier in this section) have expanded the stages involved in the creative process to seven.[90]

THE PERSONALITY

"Inherent in man are evolutionary constructive forces which urge him to realize his given potentialities. This means that man, by his very nature and of his own accord, strives toward self-realization and that his set of values evolves from such striving."[91] What is the nature of the creative man? This section will deal with the characteristics of personality of the person whom we term creative. Major studies in this field have been done by E. Paul Torrance,[92] Jacob W. Getzels and Philip W. Jackson,[93] and The Institute of Personality Assessment and Research,[94] among others; their findings will be quoted here.

It is recognized that no single creative person will possess all, and perhaps not even a majority, of the

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[90]J. Rossman; Alex F. Osborn.

[91]Karen Horney, quoted by Hendrik M. Ruitenbeek, ed., The Creative Imagination, p. 20.

[92]E. Paul Torrance, Guiding Creative Talent.

[93]Jacob W. Getzels and Philip W. Jackson, Creativity and Intelligence (New York: John Wiley and Sons, Inc., 1962).

[94]"Creativity," Carnegie Corporation of New York Quarterly, 9 (July, 1961), 2-5.

characteristics which follow; all creative persons, however, will show evidence of having some, of not many, of these in their psychological make-up. A great deal of overlapping of terms appears in the definitions of these characteristics by the different theorists quoted but the main concepts follow.

Independence and Nonconformity

Nearly all theorists place independence at the head of any list of characteristics. Barron, who used the term "original" rather than "creative," said that such a person is more independent in his judgments.[95] Ross Mooney noted that the creative person seeks to manage his own actions through self-discipline and that he is willing "to be different in things that make a difference."[96] Torrance asserted that his studies of creative children and creative adolescents show them to be typically independent.[97] Anna Roe pointed out that the tendencies of her scientist-subjects toward independent thought and desire to find out for themselves, seemed to have been well established during

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[95]Frank Barron, "Originality in Relation to Personality and Intellect," Journal of Personality, 25 (1957), 730-742.

[96]Ross L. Mooney, "Creation and Teaching" (Columbus: The Ohio State University, 1962), p. 3.

[97]E. Paul Torrance, Guiding Creative Talent.

childhood.[98] Rogers stated that independence is a condition of creativity[99] and MacKinnon averred that creative persons are independent in thought and action.[100]

An important adjunct to independence is the nonconformity and resistance to acculturation shown by many creative people. Barron maintained that the ". . . so-called socialization process is often seen by the creative individual as a demand for the sacrifice of his individuality, which indeed it often is."[101] Creative individuals value freedom to do and see things in their own ways, to question and find out for themselves, and to work according to the demands of their stages of thought, not by the demands of an external time schedule.[102]

The creative person seems to have no need for the supportive influence of others. Roe pointed out that her work with creative scientists showed that they developed a liking for solitary activities early in life.[103] Young

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[98]Anna Roe, The Making of a Scientist (New York: Dodd, Mead, 1952).

[99]Carl R. Rogers, On Becoming a Person (Boston: Houghton Mifflin Co., 1961), p. 354.

[100]Donald W. MacKinnon.

[101]Frank Barron, "The Disposition towards Originality," Journal of Abnormal and Social Psychology, 51 (1955), 476-485.

[102]"Creativity," Carnegie Corporation, p. 5.

[103]Anna Roe.

artists often prefer the role of observer rather than participant, according to Hammer.[104] Drevdahl said that a group of creative art and science students which he studied were somewhat withdrawn and quiescent.[105] McClelland also found that creative scientists have fewer personal contacts and were concerned more with things than with people.[106] Bloom noted that creative chemists and mathematicians differed from their less creative colleagues in that they frequently had difficulty establishing warm personal relations with others; consequently, they tended to retreat from the social world to one of ideas and things.[107] Maslow said that the self-actualizing person appeared to be a breed apart and noted that he feels apart in many situations.[108]

Torrance felt that this tendency resulted in feelings of estrangement. He listed odd habits, disregard for health

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[104]E. F. Hammer, Creativity (New York: Random House, 1961).

[105]John E. Drevdahl, "Factors of Importance for Creativity," Journal of Clinical Psychology, 12 (Jan. 1956), 21-26.

[106]David C. McClelland, "On the Psychodynamics of Creative Physical Scientists," Contemporary Approaches to Creative Thinking, ed. Howard E. Gruber, Glenn Terrell, and Michael Wertheimer (New York: Atherton Press, 1962), pp. 141-175.

[107]B. S. Bloom, "Report on Creativity Research by the Examiner's Office of the University of Chicago," Scientific Creativity: Its Recognition and Development, eds. Calvin W. Taylor and Frank Barron (New York: John Wiley and Sons, 1963).

[108]Abraham H. Maslow, Motivation and Personality.

and courtesy conventions, and keeping unusual hours, as traits associated with creative adults; the most creative children in his studies tended to have reputations for having wild or fantastic ideas, and to produce drawings and other products judged as "off the beaten track."[109] He found that highly creative adolescents are usually estranged from both teachers and peers.[110] He also noted that creative children were not group-minded; they did not cooperate with but rather antagonized other children in work groups, and preferred their own ideas and methods of work.[111] MacKinnon affirmed that the creative individual will stubbornly and independently resist efforts to integrate them into the group. He found that they are more concerned with their own experiences, both in the inner life and outer world, that they are more introvert than extrovert and more isolate than social.[112] Getzels and Jackson's studies of creative children in the elementary and secondary grades have revealed their problems relating to working with group, making friends and gaining recognition. They concluded that this feeling of estrangement may lead to difficulties but

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[109]E. Paul Torrance, Guiding Creative Talent, p. 8.

[110]E. Paul Torrance, "The Minnesota Studies of Creative Thinking: 1959-62," Widening Horizons in Creativity, p. 130.

[111]Ibid., pp. 123-124.

[112]Donald W. MacKinnon.

that many of the children seemed to have the necessary strength and resources to beat the stress.[113] This particular characteristic of the creative person sometimes produces behavior which is considered peculiar or abnormal by his peers. This will be discussed further in the section concerning psychological complexity.

Drevdahl discussed this aspect of the creative personality and concluded that creative persons have had considerably more loose-knit, free and independent type of training. He said that they are decidedly more interested in scientific investigation than in a more socially-oriented activity. He felt that this withdrawal was not merely an attempt to escape but simply the result of a life style which placed social activities at the bottom of the heirarchy of needs.[114]

Richard Crutchfield defines conformity as the yielding of a judgment by an individual in response to the pressures of group thinking. He tested subjects in a conflict situation in which one member finds that his conviction is different from the thinking of the group. In this situation, he found, the unorthodox member may yield his belief and conform, or he may maintain his judgment,

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[113]Jacob W. Getzels and Philip W. Jackson.

[114]John E. Drevdahl, "Some Developmental and Environmental Factors in Creativity," Widening Horizons in Creativity, pp. 170-186.

announce it, and deviate. Crutchfield's conclusions were that "there is strong evidence for the antithetical relationship of conformity and creativity," and that the truly independent person, the one in whom we find creative thinking at its best, is the one who can accept society without denying himself.[115]

Some theorists see the creative person's tendency to express his impulses as a corollary to this characteristic of independence. Getzels and Jackson found their subjects were more likely to express their impulses;[116] Barron described creative persons in many fields as responsive to and expressive of their impulses;[117] and Maslow reported that creative people are less inhibited with respect to feelings.[118]

Original and Imaginative

Closely vying for the top billing in the theorists' lists of creative characteristics is originality. Though not considered the same thing, the characteristic of

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[115]Richard S. Crutchfield, "Conformity and Creative Thinking," Contemporary Approaches to Creative Thinking, pp. 131-138.

[116]Jacob W. Getzels and Philip W. Jackson.

[117]Frank Barron, "The Needs for Order and for Disorder as Motives in Creativity," Creativity and the Individual, pp. 329-330.

[118]Abraham H. Maslow, Motivation and Personality.

originality is so much a part of the concept of creativity that the line of demarcation is all but lost. In fact, Barron used the term "original" rather than "creative" in his discussions.[119] Dougan et al connected originality and creative thinking.[120] Gerry et al reported that biographical inventories showed that high originality scores had a high correlation with creative activities.[121] Holland said that creative adolescents are consciously original.[122] Torrance's studies have confirmed this: creative children exhibit originality in their school work and choose unconventional occupations.[123] Guilford and his associates found that originality, which they defined as the ability to produce remotely associated or uncommon responses to a stimulus idea, was characteristic of creative persons.[124]

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[119]Frank Barron, "The Disposition towards Originality."

[120]Catherine P. Dougan, et al.

[121]R. Gerry, L. de Veau, and M. Chorness, "A Review of Some Recent Research in the Field of Creativity and the Examination of an Experimental Creativity Workshop," Creativity and the Individual, pp. 270-272.

[122]John L. Holland, "Creative and Academic Performance among Talented Adolescents," Journal of Educational Psychology 12 (June, 1961), 145.

[123]E. Paul Torrance, Widening Horizons in Creativity, p. 131.

[124]R. C. Wilson, J. P. Guilford, P. R. Christensen, and Donald J. Lewis, "A Factor-analytic Study of Creative Thinking Abilities," Psychometrika, 19 (December, 1954), 297-311.

Sometimes included in descriptions of originality and sometimes considered a separate entity, the characteristic of imagination is considered by many to be an important factor in creativity. Cobb called it "the very essence of creativity,"[125] and said that though it is a normal quality of every person, it is greatly heightened in the creative person. He concluded that "this mental synthesis of new ideas from elements experienced separately . . . is of course the very act of creation."[126] He described imagination as mulling over impressions--consciously or unconsciously--and weaving them into new wholes. He called it the focal point of operation in the processing of a creative work, the heartbeat that gives unity and life to a miscellany. Creation, he said, is impossible without imagination.[127]

Sensitive and Intuitive

Sensitivity is another characteristic frequently mentioned by theorists. Murphy believed that sensitivity to some sort of sensory experience, while varying with individuals, is important to creative work, especially to

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[125]Stanwood Cobb, The Importance of Creativity (Metuchen: The Scarecrow Press, Inc., 1967), p. 69.

[126]Ibid.

[127]Ibid., p. 54.

the early development of the creative individual.[128] Phyllis Greenacre mentioned that sensitivity to sensory data and the relationships between stimuli is characteristic of creativity.[129] Bernice Eiduson found that artists were extremely responsive to sense data and showed richness in associations and expressions.[130] Beittel and Lowenfeld concluded from their studies of artists that sensitivity to ideas and materials is a characteristic of creative people.[131]

Guilford has stated that sensitivity to problems is a precursor to creative thought; without the ability to see problems, to sense improvements and to detect defects, he said, innovations would be rare.[132] Creative people studied at the Institute of Personality and Assessment Research were

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[128]Gardner Murphy, "Creativeness," Personality: A Biosocial Approach to Origins and Structures (New York: Harper and Bros., 1947), p. 475.

[129]Phyllis Greenacre, "The Childhood of the Artist: Libidinal Phase Development and Giftedness," The Creative Imagination, pp. 161-191.

[130]Bernice T. Eiduson, "Artist and Non-artist: A Comparative Study," Journal of Personality, 26 (1958), 13-28.

[131]Kenneth Beittel and Viktor Lowenfeld, "Interdisciplinary Criteria of Creativity in the Arts and Sciences: A Progress Report," Research in Art Education, Ninth Yearbook of the National Art Education Association (Washington, D.C.: National Education Association, 1959), pp. 35-44.

[132]J. P. Guilford, pp. 157-159.

described as sensitive,[133] and while creative people see things as others do, they also see things as others do not; Barron called this creative "vision."[134] Mooney considered "sensitivity to structural harmonies" essential to creative research.[135] Torrance, likewise, listed a "high degree of sensitivity" as one of the essentials of the creative personality.[136] Cobb called it the most fundamental factor in creativity[137] and listed many examples of this factor in the creative lives of artists and writers. He noted that the creative mind takes note of things which the ordinary person passes over unnoticed. The more sensitive his organization, Cobb insisted, the nearer the creative individual can raise his work to the plane of genius.[138]

Some theorists include here the characteristic of intuition; the creative person is intuitive. MacKinnon said that intuition is to "perceive unconsciously."[139] Westcott

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[133]"Creativity," Carnegie Corporation.

[134]Frank Barron, "Creative Vision and Expression," New Insights and the Curriculum (Washington, D.C.: Association for Supervision and Curriculum Development, 1963), p. 297.

[135]Ross L. Mooney.

[136]E. Paul Torrance, Guiding Creative Talent, p. 10.

[137]Stanwood Cobb, p. 58.

[138]Ibid., p. 54.

[139]Donald W. MacKinnon, p. 210.

pointed out that "when an individual intuits, he reaches a conclusion, a synthesis, a formulation, a solution to a problem or whatever it might be, without being aware of the basis on which this conclusion or synthesis is erected."[140] Cobb called this "the marvelous and mysterious helper of the creative mind, . . . an enhancement of the native powers."[141]

Openminded and Aware

The creative person is seen as one who is openminded and aware. Rogers held that this characteristic of openness to perception and experience is a primary condition for creativity.[142] Mooney also thought that the creative person holds himself open to experience.[143] Ernest Jones commented on the open mind being a part of creational thinking.[144] This characteristic has been noted in the creative graduate

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[140]Malcolm R. Westcott, "Empirical Studies of Intuition," Widening Horizons in Creativity, p. 35.

[141]Stanwood Cobb, p. 94.

[142]Carl R. Rogers, On Becoming a Person, pp. 353-354.

[143]Ross L. Mooney.

[144]Ernest Jones, "How to Tell Your Friends from Geniuses," Saturday Review, 40 (Aug. 10, 1957), 9-10+.

student as well as the creative adolescent.[145] Erich Fromm stressed the importance of actually seeing, i.e. being aware of, and responding to, persons and events in one's own environment.[146] Maslow agreed that openness to the unconscious and irrational is characteristic of creative people.[147] Kubie associated creativity with greater openness and awareness. He added that the creative person has self-knowledge in depth; he has grappled with his unconscious emotions, faced his guilt and his fears, and has achieved a degree of maturity that enables him to make fuller use of his potential than the uncreative individual.[148]

Barron also said that this quality of openness extends into a self-awareness. He said that those doctoral candidates in the sciences with great creative potential were ". . . unusually appreciative of the intuitive and

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[145]Harold J. Palm, "An Analysis of Test-Score Differences Between Highly Creative and High Miller Analogies Members of the Summer Guidance Institute," Research Memorandum BER-59-13 (Univ. of Minnesota, Sept. 1959).

John L. Holland, "Creative and Academic Performance among Talented Adolescents," Journal of Educational Psychology, 52 (June, 1961), 136-147.

[146]Erich Fromm, "The Creative Attitude," Creativity and Its Cultivation, pp. 44-48.

[147]Abraham H. Maslow, "Creativity in Self-Actualizing People," Creativity and Its Cultivation, p. 85.

[148]Lawrence S. Kubie.

non-rational elements in their own nature."[149] Hammer and Torrance both describe self-awareness as an attribute of creativity.[150] Getzels and Jackson stated that more creative adolescents were more aware and more accepting of themselves.[151] The IPAR studies also found that highly creative persons were more open and aware of their feelings and others.[152] Gordon noted that the creative individual is one who can achieve an attitude of openness to the unexpected, the apparently irrelevant and the accidental. He has a kind of perception that sees revealing possibilities in accidents, interruptions and distractions. He is open both to his external and internal world and pays attention to impressions from both.[153]

Preference for Complexity and Tolerance for Ambiguity

The creative person shows a preference for complexity. Barron said that this seeking out of the complex and assymetrical, even disorderly, elements, may be a desire

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[149]Frank Barron, Scientific Creativity, p. 386.

[150]E. F. Hammer; E. Paul Torrance, "Need Characteristics of More Creative Mental Hygiene Students," Research Memorandum BER-60-8 (University of Minnesota, July, 1960), pp. 4-5.

[151]Jacob W. Getzels and Philip W. Jackson.

[152]"Creativity," Carnegie Corporation, p. 3.

[153]William J. J. Gordon, Synectics: The Development of Creative Capacity (New York: Harper and Row, 1961).

for the implicit challenge to achieve simplicity or order out of chaos. He contended that the creative person is challenged by disorder and strives for integration and synthesis out of disorder and complexity.[154] He further believed that because of his preference for disorder and complexity, the creative individual turns more than most people to the unconscious and its "turbulence and instability." This, he said, is because "the creative individual not only respects the irrational in himself, but also courts it as the most promising source of novelty in his own thinking."[155]

That a tolerance for ambiguity is a corollary to the desire for complexity has been noted by many researchers. Rogers considered this a very important condition for creativity. He said this is because the more creative person has the inner strength needed to bear the immediate tension in light of the greater goal ahead; the less creative individual seeks an immediate solution.[156] Barron arrived at the same conclusion--that a tolerance of ambiguity may be seen as a willingness to defer judgment or delay closure in hopes of finding a better solution.[157]

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[154]Frank Barron, "The Needs for Order for for Disorder."

[155]Frank Barron, Scientific Creativity, p. 158.

[156]Carl R. Rogers, On Becoming a Person.

[157]Frank Barron, "The Needs for Order and for Disorder."

Guilford also noted this same tolerance for ambiguity in more original persons.[158] Gordon's synectics theory also maintained that the creative man is an individual who is able to function well with the unfamiliar and can tolerate risk, ambiguity, and disorder.[159]

Psychologically Complex

A psychological complexity marks the creative mind. Barron has stated that persons who are intelligent and original avail themselves of materials and processes associated with the conscious and the unconscious, the intellectual and the affective, the combination being more indicative of the creative than either alone.[160] Bellak related the ego's capacity for oscillating between loose primary process thinking and rigorous secondary process thinking to a general factor in the creative personality.[161] Kubie said that the preconscious system is the source of creative ideas because of the inaccessibility of the unconscious under normal conditions. He saw the unconscious as a source of rigidity and conflict which interferes with the

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[158]J. P. Guilford.

[159]William J. J. Gordon.

[160]Frank Barron, "Personality and Intellect."

[161]L. Bellak, "Creativity: Some Random Notes to a Systematic Consideration," Journal of Projective Techniques 22 (1958), 363-380.

creative preconscious, and stressed the need for rapport with the preconscious.[162] MacKinnon described creative people as being able to admit into their consciousness much which others would repress. He said they were able to integrate reason and passion and to reconcile the rational and irrational. He termed this the "reconciliation of opposites."[163] Barron felt that the original person rejects suppression as a mechanism for the control of impulse. He said that such an individual has a broad range of adaptive responses available and that his ability to respond in an appropriate manner is dependent upon a minimum of suppression.[164]

Though the creative person does not employ suppression as a means of controlling impulse, he is able to regress temporarily. Kris called this "regression in the service of the ego."[165] Barron, speaking of the psychological complexity of the creative person, said that such a person may be characterized by his ability to regress momentarily very far while being able to return to a high degree of rationality quite rapidly, "bringing with him the

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[162]Lawrence S. Kubie.

[163]Donald W. MacKinnon, p. 209.

[164]Frank Barron, Creativity and Psychological Health (New York: D. Van Nostrand, 1963).

[165]Ernst Kris, Psychoanalytic Explorations in Art (New York: International University Press, 1952).

fruits of his regression to primitive and fantastic modes of thought." He said the ego can afford to allow regression because it knows it can correct itself.[166] Gutman brought out similar points when he stated that in order to be creative, a person must be able to tap both the subconscious and the unconscious levels of thinking, and he must be free from the suppressing influence of overly adjustive behavior. The creative person, he said, can relinquish reality for short periods of time in order to dwell in the depths of the subconscious and unconscious.[167] Fraiberg held that psychic conflict is a necessary component in the development of the personality and not simply a hazard which must be surmounted in order to avoid pathology. Through it, he said, the aims of both libido and aggression are modified and brought within control of the ego so that the artist taps his own inner resources and shapes them to his purposes rather than being driven helplessly by them into acts and thoughts not of his choosing.[168] Gordon also held that the creative person is one who can relinquish the psychological security of the known, the rational in favor of the irrational.[169]

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[166]Frank Barron, Creativity and Psychological Health, p. 223.

[167]Herbert Gutman, "The Biological Roots of Creativity," Journal of Genetic Psychology, 64 (1961), 417-458.

[168]Louis Fraiberg, "New Views of Art and the Creative Process," The Creative Imagination, p. 234.

[169]William J. J. Gordon.

If creative persons use regression in this manner, how does it differ from the regression which mentally ill, non-creative persons employ? It has been suggested that the important difference is that the creative person employs regression and the material so derived for a purpose, i.e. subjects it to rational judgment and achieves a creative synthesis in contrast to what disturbed people do. Creative people often experience tension, problems or anxiety, but they have the inner resources with which to overcome these problems. Maslow believed that even though these stresses, conflicts and frustrations are apt to be present, the expression of creativity is important to psychological health and maturity.[170] MacKinnon noted that the openness of the creative person may cause him to be "overwhelmed" or "overloaded" with sensory, perceptual and imaginal input, but pointed out that they also have mechanisms for controlling their anxieties.[171] Torrance discussed evidence of the damaging effect of repressed creativity: faulty or uncertain self-concept, impaired learning, behavior problems, neurotic conflicts, and possible psychoses.[172] Greenacre, using Helen Keller's experience as an example, pointed out that with great talent, there is a great sense of pressure,

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[170]Abraham H. Maslow, Motivation and Personality.

[171]Donald W. MacKinnon, p. 208.

[172]E. Paul Torrance, Guiding Creative Talent, pp. 125-141.

an obligatory quality to the expansion of development. If, for any reason, the channels of outlet are blocked, states of frustration and blind frenzy may arise.[173]

Bi-sexuality

Many theorists add the characteristic of bi-sexuality. By this is meant an integration of masculine and feminine components. Hammer included this characteristic in his listing of creative personality traits of young artists.[174] Theorists point out that creative work seems to require both sensitiveness and the strength to be independent. In Western culture these characteristics are viewed as feminine and masculine respectively. The conflict which may result from trying to resolve both sides of the nature may contribute to psychic disturbance, but again, most creative people give evidence of having been successful. As has been noted, creative people exhibit both sensitivity and independence, perception and dominance, evidence that they have successfully expressed both sides of their natures.

Myden thought that creative adults display greater sexual ambivalence because they make more use of primary

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[173]Phyllis Greenacre, p. 188.

[174]E. F. Hammer.

processes and less use of repression.[175] Torrance reported that creative children may deviate from sex norms, not into the direction of abnormality but from the roles society expects them to play.[176] He said that "our society places off limits or makes taboo for each sex whole areas of experiencing because of one's sex." He felt this took a great toll upon the awareness and potential functioning of both boys and girls.[177] Cultural pressures for prescribed sex roles come early and often to children. Theorists believe that resolving these conflicts by abandoning certain aspects of behavior weakens creative potentialities.

Spontaneous and Flexible

Spontaneity is another characteristic often mentioned in connection with creativity. Kubie associates the two.[178] Barron also believed that the self-actualizing person was spontaneous, that he could act without undue

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[175]Walter D. Myden, "An Interpretation and Evaluation of Certain Personality Characteristics Involved in Creative Production: An Investigation and Evaluation of Personality Structure and Characteristics of Creative Individuals in the Context of Psychoanalytic Theory and Ego Psychology," Dissertation Abstracts 17 (1957), 897-898.

[176]E. Paul Torrance, Guiding Creative Talent.

[177]E. Paul Torrance, "Implications of Creativity Research Findings for Instructional Media," Instructional Media and Creativity, p. 164.

[178]Lawrence S. Kubie.

concern for external standards.[179] Vinacke believed that spontaneity is essential for creative thought; he defined it as freedom to manipulate perceptions and memories and to use emotions and fantasies.[180] Guilford found that creative people spontaneously shifted their thoughts to different categories and varied their responses; he termed this "spontaneous flexibility."[181]

Sense of Humor

Many of the foregoing traits are characteristic of humor; several theorists have noted that a sense of humor seems to mark the creative person. Guilford said that more creative responses often included elements of humor.[182] Creative children and adolescents have been reported to have and to express in their work a sense of humor. Getzels and Jackson reported that creative adolescents placed this characteristic second in a list of eight which they desired for themselves; the high IQ group placed it last. Their conclusion was that a sense of humor was possibly a saving grace in helping them withstand the tensions of

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[179] Frank Barron, "The Needs for Order and for Disorder."

[180] W. Edgar Vinacke, The Psychology of Thinking (New York: McGraw-Hill Book Co., Inc., 1952), pp. 254-257.

[181] J. P. Guilford, "Traits."

[182] Ibid.

psychological estrangement.[183] Harold J. Palm concluded that a sense of humor stemming from spontaneity was characteristic of more creative graduate students.[184] Gordon described the creative person as one who is able to indulge in playful manipulation of words, concepts, and commonplace assumptions, one who feels comfortable in playful, imaginative situations.[185]

Intelligence

Conspicuous by its absence from the preceding list is the characteristic of intelligence. Indeed, though lists of characteristics have been compiled by many different theorists, it is noteworthy that none of them lists intelligence as a necessary factor in creativity. Irving Taylor believes that not only is there no necessary relationship between creative and intellectual abilities, but what is even worse, the confusion of these two forms of giftedness has long delayed and restricted the kind of research which needs to go forward.[186] Furthermore he deprecates our emphasis on the IQ. "Intelligence is very much an invention of Western culture. It selects and stresses the values

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[183] Jacob W. Getzels and Philip W. Jackson.

[184] Harold J. Palm.

[185] William J. J. Gordon.

[186] Irving A. Taylor, "The Nature of the Creative Process," Creativity, p. 51.

important to our society, which are revealed in the way we measure intelligence. One will find upon examination that intelligence tests essentially concern themselves with how fast relatively unimportant problems can be solved without making errors--certainly the values of our society. In another culture, intelligence might be measured more in terms of how adequately important problems can be solved, making all the errors necessary and without regard to time. Such a view would be more in keeping with the creative process."[187] Nor is this necessarily a "modern" discovery. Hargreaves pointed out in 1927 that there was little relationship between originality and general intelligence.[188]

Lowenfeld said, "It is not new that our IQ tests do not assess the creative mind. . . . Creativity and intelligence are not necessarily related."[189] Benson quoted the Carnegie Corporation Quarterly as asserting that "a certain amount of intelligence is required, beyond that point being more or less intelligent does not crucially determine the

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[187] Ibid., p. 54.

[188] H. L. Hargreaves, "The Faculty of Imagination," British Journal of Psychological Monographs, Supplement, 3 (1927).

[189] Viktor Lowenfeld, "Basic Aspects of Creative Teaching," Creativity and Psychological Health, p. 137.

level of an individual's creativity."[190] Barron used the IPAR study to conclude that "for certain intrinsically creative activities a specifiable minimum IQ is probably necessary in order to engage in the activity at all, but that beyond the minimum, which often is surprisingly low, creativity has little correlation with scores on IQ tests."[191] Greenacre agreed: "Creativity does not seem to have a great deal to do with superior intelligence in terms of quotients, even though excellent intelligence may contribute to the productions of the creative person."[192]

In Getzels and Jackson's work with control groups of high-creative and high-IQ children, the high-creative group exhibited the traits which have been discussed. Few of these showed up in the work of the high-IQ students. In fact, an opposite trait was nearly always found.[193] Another interesting fact was reported by Hutton and Bassett who told of a leucotomy which was performed upon a patient with a history of creative productions. The operation caused no changes in intelligence and memory ability, but markedly

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[190]F. T. Benson, "General Education and the 'Pervasive' Outcomes," Current Issues in Higher Education (Washington, D.C.: National Education Association, 1962), p. 211.

[191]Frank Barron, Creative Person and Creative Process, p. 42.

[192]Phyllis Greenacre, pp. 161-162.

[193]Jacob W. Getzels and Philip W. Jackson.

impaired the originality and creativeness of the patient.[194]

The foregoing presents a composite picture of the creative person; as has been noted, no one person will exhibit all of these traits, but in those persons whom we term "creative" many of these will appear. The creative person is remarkably independent, so much so that it may ostracize him from his family and peer group. He is original and imaginative; he is perceptive and sensitive; openminded and aware of both the external and the internal world. He is psychologically complex, showing a definite preference for complex situations and a toleration for ambiguous ones. Sometimes self-centered, he nevertheless exhibits a playfulness and sense of humor toward himself and situations. As someone has remarked, he participates in life on a "higher" level; he is more deeply committed to life.

THE PSYCHO-SOCIAL MILIEU

The creative person having now been identified and those characteristics isolated which one can reasonably expect him to possess, a discussion of the psycho-social milieu which theorists have postulated will help him utilize his potentialities to the fullest is necessary. The

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[194]E. L. Hutton and M. Bassett, "The Effect of Leucotomy on Creative Personality," Journal of Mental Science, 94 (1948), 332.

key word here is "freedom," both physical and psychological. Antonia Wenkart has said, "As freedom diminishes, so does creativity. . . . Freedom and creativity are interdependent,"[195] and from Kubie, "Creativity is released when the person is relatively free of psychological pressures."[196] All elements of a person's culture, his societal values, his family, his education, etc., affect his creative expression. If all children possess, or have possessed, creative abilities, the question becomes: how do these cultural factors facilitate or inhibit him in expressing his natural creative ability? Greenacre contended that the creative person is affected by his culture even before birth. She said that the direction which creative talent takes may be influenced by the needs of the surrounding world or determined before birth when some sensimotor functional constellation is especially superior and becomes the dominant channel of reception and production.[197]

Relatively Unstructured Childhood

Most theorists note that creative ability is often markedly increased or decreased during childhood. Thurstone said, ". . . it seems almost certain that the cultivation of

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[195] Antonia Wenkart, pp. 345, 347.

[196] Lawrence S. Kubie.

[197] Phyllis Greenacre, pp. 177-178.

creative talent is influenced by the value system in our culture. If a child is encouraged when he tries to think along unconventional lines, he is more likely to develop creative and productive ideas than if any such efforts were constantly discouraged."[198] It has been suggested that the well-known creative slump which occurs at different times in a child's life may be due more to cultural factors than biological ones. Torrance's tests of creativity have been cited in evidence. These tests were conducted with children from the United States and Samoa. Samoan scores, though lower than those of the United States (the dominant cultural value is acceptance of tradition and suppression of inquisitiveness and individuality) nevertheless showed a steady increase, while those of the children in the United States showed marked declines at those times when the child would most likely be running into definite cultural demands, e.g. elimination of fantasy, conformity to sex roles, stress on the avoidance of mistakes, more formal and verbal school work, and the increasing influence of peer groups.[199]

The importance of the influence on creative ability during early childhood has been noted by Greenacre:

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[198] L. L. Thurstone, ed., Applications of Psychology (New York: Harper and Brothers, 1952), p. 19.

[199] E. Paul Torrance, "Cultural Discontinuities and the Development of Originality of Thinking," Exceptional Children, 29 (1962), 2-19.

"Fortunate is that creative child or youth who has available to him in his own family individuals suited for identification and reinforcements of his own creative needs,"[200] and by John Drevdahl, "An important criterion for early life seems to be a delegation of definite responsibility and the valuation within a family for knowledge for its own sake."[201] He further pointed out that a non-directive, relatively unstructured training is of significant benefit. He concluded that creative people are responsible, self-accepting and tolerant, and these qualities seem to be derived from a family and educational experience where responsibility and self-acceptance are coupled and where dependency and its consequences, anxiety and rebelliousness, are diminished.[202] Roe hypothesized that differences in home atmosphere and parental attitudes, especially early ones, are correlated to basic orientations toward people or toward ideas and things. She said that these orientations determine, in large part, interest, which in turn influences the choice of occupation. An accepting environment would make possible the greater importance of aptitude in the development of interests. She also believed that creativeness is hindered

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[200]Phyllis Greenacre, p. 184.

[201]John E. Drevdahl, "Some Developmental and Environmental Factors," p. 178.

[202]Ibid., p. 179.

by overprotecting or overdemanding family situations and cited her studies of artists and scientists in partial confirmation of this. Family values, with respect to learning and independence, for example, are important factors in the backgrounds of scientists.[203]

Stein reported that more creative chemists recalled engaging in solitary activities early in life (the less creative, in group activities) and being more distant from parents and adults in general.[204] The IPAR studies revealed that creative adults often recalled unhappy childhoods; either they really did have them or they recalled, rather than repressed, the stresses of growing up.[205]

Weisberg and Springer concluded from their studies that the creative child is a product of a not "particularly well adjusted" marriage and a family that is not "overly close." Family members do not feel the supportive need of the other members to any great extent and no one member dominates another, and parents do not insist that the child conform to their values.[206] Getzels and Jackson's findings

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[203]Anna Roe, "Early Differentiation of Interests," Research Conference on the Identification of Creative Scientific Talent, ed. Calvin W. Taylor (Salt Lake City: University of Utah Press, 1957), pp. 98-108.

[204]Morris I. Stein, "Transactional Approach," p. 226.

[205]"Creativity," Carnegie Corporation, p. 5.

[206]P. S. Weisberg and Kayla J. Springer, "Environmental Factors in Creative Function," Archives in General Psychiatry, 5 (1961), 554-564.

were similar: parents of creative youngsters were likely to be strong individuals who permitted the child to be somewhat independent, parents who were concerned more with the child's interests and enthusiasms than social or scholastic standards.[207] Holland stated that the creative adolescent's parents "appear to be more permissive and more nurturent of his ideas and impulses so that communication with the self and the world is stimulated.[208]

Psychologically Free

Most theorists hold that the natural creativeness of the child is rather effectively diminished by the time he reaches adulthood. Whatever the reason, his early training, his education, peer and societal pressures, he is effectively acculturated by pressures within and without. Barron noted that creative adults had escaped this acculturation. He stated that at some time in the creative adult's life:

> A decisive bifurcation may occur, one psychic path leading to a way of being that remains open to experience and the other leading to a personal adjustment that is "normal" but that is achieved at the cost of repression of the spontaneity and wonder of childhood. The person who is open to experience does not separate himself from the process of life by repression but rather gives himself over to the life processes within him. Because the childhood experiences are thus retained in consciousness and integrated into the personality, . . . a progression has occurred that keeps the best of

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[207] Jacob W. Getzels and Philip W. Jackson.

[208] John L. Holland, p. 145.

> innocence while moving ahead to the command and control that experience brings. . . . to put it another way, the creative individual retains his innocence in the face of fate. . . . genuinely integrated and without loss of the ability to function creatively.[209]

A similar idea was expressed by Cobb when he said that "all human beings have some spark of creativeness within them. In childhood, this creativeness is a powerful impulse which expresses itself in many ways, until the regimentations and responsibilities of adulthood inhibit and restrain these impulses. Not in all cases, fortunately, for humanity, is such creativeness entirely inhibited. Those few whom we call geniuses and the many who are men and women of talent, go on creating throughout their lives."[210] Malcolm Provus, speaking on the proper social milieu for creative problem-solving, noted that "a social climate is essential which will balance stress and reward in such a way that the student will feel free to risk failure and loss of self-esteem in an attempt to cope with a problem . . ."[211] There is no doubt that societal pressures interfere with the possibilities of creative thought. Torrance reported the very effective means employed by groups of children to control the creative

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[209]Frank Barron, Creative Person and Creative Process, pp. 168-169.

[210]Stanwood Cobb, p. 24.

[211]Malcolm Provus, p. 133.

child: hostility, open aggression, criticism, disparagement, rejection, and the assignment of clerical or administrative duties.[212]

Basic to these ideas is that creativity must be free in order to flourish. The creative person must be psychologically free to think, to conjure, to reflect. "Creativeness is not encouraged under a pattern of strict routine or exhaustive regimentation," said Cobb,[213] and again, "The qualities that are fundamental to the act of creation are qualities that cannot be forced into action by regimentation or command. They need freedom, space and leisure in order to mature and function."[214] Rogers spoke of conditions of psychological "safety," i.e. acceptance of the individual as being of unconditional worth, absence of external evaluation and empathy. These, he said, increase the likelihood of creativity.[215]

Threat or anxiety effectively diminish creativity. Gibb reported that production of ideas was greater, both in quality and in quantity, under conditions of reduced

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[212]E. Paul Torrance, "Social Stress in Homogeneous and Heterogeneous Groups in the Intermediate Grades," New Educational Ideas: Third Minnesota Conference on Gifted Children, ed. E. Paul Torrance (Minneapolis: Univ. of Minnesota Press, 1960), p. 65.

[213]Stanwood Cobb, p. 52.

[214]Ibid., p. 53.

[215]Carl R. Rogers, On Becoming a Person.

threat.[216] Kubie spoke of being free from guilt, rage, fear and anxiety if one is to utilize his potentialities.[217] Scofield noted that having to defend an idea before it is completely thought out inhibits creativity; he said there is a need for trial responses without evaluation.[218] MacKinnon also averred that criticizing and rejecting new ideas is crippling to creativity.[219] He went on to assert, however, that he was not proposing unlimited freedom. "Discipline and self-control are also needed," he said. "They must be learned if one is ever to be truly creative, but it is important that they not be overlearned. . . . having been learned, they should be used flexibly, not rigidly or compulsively."[220]

Opportunities

Closely aligned with the concept of psychological and physical freedom for creativity is the idea that there must be opportunities for creativity. It is obvious that society and education again play a large part. While high

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[216]J. R. Gibb, "The Effects of Group Size and of Threat Reduction upon Creativity in a Problem-Solving Situation," American Psychologist, 6 (1951), 324.

[217]Lawrence S. Kubie.

[218]Robert W. Scofield, "A Creative Climate," Educational Leadership, 18 (Oct. 1960), 5-6.

[219]Donald W. MacKinnon, p. 197.

[220]Ibid., p. 206.

intelligence is not considered a sine qua non for creativity, it is nevertheless apparent that the preparation stage for the creative process involves much learning and mastery over basic skills. If the child is denied these opportunities, he cannot create. Scholarships for specialized training, for example, go to those who have high academic standings; testing for creativity is seldom done in our educational system. Mead has pointed out that freedom and opportunity for the use of the imagination together with respect for the skill and discipline of hard work in the acquisition of skills are necessary conditions for the emergency of creativity.[221] No one suggests that opportunities per se will make a child creative, but for one who is creative, opportunities must exist for him to express his creativeness.

The type of society, its values and culture, will also determine creative bent. Cobb has given many examples supporting this. He noted that the regimented life of the Spartan city-state would be more likely to produce creativity in matters of warfare and defense than would the philosophically-bent society of ancient Athens. Our society with its stress on freedom from error and success-oriented

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[221]Margaret Mead, "Creativity in Cross-cultural Perspective," Creativity and Its Cultivation, pp. 222-235.

will tend toward creativeness involving these criteria.[222] MacKinnon has stated that he feels being creative in today's society is risky and perhaps even dangerous. In an ideal utopian society, he maintained, people could grow creatively with no personal risks involved, but this is not possible under present conditions.[223]

Torrance echoed this idea when he noted that, in order to cultivate and sustain genuinely creative behavior, a society must encourage those personality traits which seem essential for such behavior in a variety of ways, but in point of fact, he said, our culture unduly punishes the person with "intellectual courage, the emotionally sensitive individual, the intuitive thinker, the person who regresses occasionally and is playful and childlike, the visionary individual, and the person who . . . is unwilling to accept things on mere say-so without examining the evidence." This person is rejected, he said, in favor of the one who is courteous, does his work on time, is obedient, well-liked by his peers and is willing to accept the judgments of authorities.[224]

In producing opportunities for creativity, a rich stimulating environment, one with many and varied sources of

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[222]Stanwood Cobb.

[223]Donald W. MacKinnon, pp. 208-209.

[224]E. Paul Torrance, "Implications of Creativity Research," pp. 162-63.

information, together with the freedom to experiment, is necessary. There is increasing awareness today of the need for more and better training, equipment and sophisticated materials. The advent of computer technology has opened many doors to ideas which could not be researched before because of the enormous amount of data involved. Haefele stressed the need for libraries, technical aid, and clerical help in order to facilitate research. He also suggested that industry provide secluded spots for incubating new approaches to problems.[225] Eyring analyzed conditions in several laboratories and concluded that materials and freedom to try new ideas contributed to research productivity.[226]

Societal Recognition

A final necessity to be discussed is that of societal recognition. To be effective, a creative act must have a recipient, an audience. Toynbee declared that society must be willing not only to receive the creative product, it must also see to it that the environment in which the creative person works is not hostile to creativity. He further said that potential creative

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[225]John W. Haefele, Creativity and Innovation (New York: Reinhold Publishing Corp., 1962).

[226]Henry Eyring, "Scientific Creativity," Creativity and Its Cultivation.

ability can be stifled, stunted and stultified by the prevalence in society of adverse attitudes toward creativity.[227] Mandler and Kessen have given examples of the extent to which society has gone in order to ignore or disparage new discoveries.[228] Torrance pronounced society in general as "downright savage toward creative thinkers, especially when they are young,"[229] and Murray diagnosed society as suffering from "paralysis of the creative imagination."[230]

Cobb's comments on the importance of a receptive society succinctly sums up these ideas: "If human society depends upon genius for its progress, genius itself is dependent upon society for its stimuli and opportunities. Strive as it will, genius cannot successfully function in an environment totally unfavorable to it. . . .[231] it is true that genius can sometimes achieve the seemingly impossible, but as a man born blind cannot see, so a man cannot even conceive of--much less carry out creative activity--in a milieu which affords him no cultural

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[227]Arnold Toynbee, p. 4.

[228]George Mandler and William Kessen, The Language of Psychology (New York: John Wiley and Sons, Inc., 1959).

[229]E. Paul Torrance, Guiding Creative Talent, p. 8.

[230]Henry A. Murray.

[231]Stanwood Cobb, p. 8.

background, no point of departure and no receptive public. If society wants an abundant harvest of creativeness, it must prepare fertile fields."[232]

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[232] Ibid., p. 13.

CHAPTER III

MOTIVATION AND THE CREATIVE PROCESS

Central to all of the dimensions of the creative process is motivation, thus providing the rationale for the present chapter which focuses on motivation. The concept of motivation provides a framework for understanding the creative process, the process deemed to be a prerequisite for building a language of curriculum and instruction.

"All behavior is motivated" is a basic and widely accepted assumption of the social scientist, the teacher, and others whose occupations require the direction and management of organizations, or, as one author put it, "Motivation is the force or condition within the organism which impels it to act or respond."[1] The basic question then becomes: What motivates behavior? What are the causal factors which, when lumped together, precipitate behavior? Theorists who have studied the concept of motivation carefully have concluded that motivation is either external or internal, or a combination of the two. Three factors appear to be involved: (1) an environmental determinant which

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[1]Ronald C. Johnson and Gene R. Medinnus, Child Psychology: Behavior and Development (New York: John Wiley and Sons, Inc., 1965), p. 108.

precipitated the behavior in question--the application of some irresistible force which of necessity led to this action; (2) the internal urge, wish, feeling, emotion, drive, instinct, want, desire, demand, purpose, interest, aspiration, plan, need, or motive which gave rise to the action; or (3) the incentive, goal or object value which attracted or repelled the organism. Motivation is, at best, a hypothetical construct.

This chapter will examine a representative sampling from a wide range of these ideas and models. Particular emphasis will be placed on those theories, ideas, suggestions and models which seek to explain creative behavior. Specifically, attention will be given to those constructs which seek to motivate creative behavior.

EARLY THEORIES OF MOTIVATION

In order to clarify the concepts which will be discussed, some attention should be given to the backgrounds of the various theories of motivation in vogue today.

For centuries, the motivating forces behind the actions of humans and the actions of animals were thought to be entirely different. The soul, for example, was considered the impelling force behind the actions of a human, whereas the motivations of an animal, not possessing a soul, had to come from a different source. Descartes postulated

that animals were driven by certain fluid spirits rushing through their nerves.[2]

The hedonistic theory, in vogue during the eighteenth and nineteenth centuries, stated that man seeks pleasure and avoids pain, but the difficulties encountered in trying to explain why man seems sometimes to seek that which is not pleasurable, death and failure, for example, led to its extinction. Recently, however, a more sophisticated version of this theory has been suggested by David McClelland, whose theory relies not on subjective reports of pleasure and pain but on objective measures of approach and avoidance behavior.[3] Smith and Hudgins, working with McClelland's concepts, stated that "the hedonistic pleasure-pain principle is at the heart of the concept of motive. A motive . . . is a drive of the personality to strive toward pleasure and away from pain."[4]

The arrival on the scene of Darwin and his studies showing the anatomical and physiological continuity which exists between humans and animals led to the development of

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[2]Robert D. Strom, Psychology for the Classroom (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1969), p. 17.

[3]David C. McClelland, Personality (New York: Dryden Press, 1951).

[4]Louis M. Smith and Bryce B. Hudgins, Education Psychology, An Application of Social and Behavioral Theory (New York: Alfred A. Knopf, 1964), p. 84.

the term "instinct" as a replacement for "soul" and instinct was then said to be the agent responsible for moving organisms to perform different kinds of activity.[5] William James was one of the first to accept the instinct theory and in 1890 contended that man had more instincts than any other animal. From this point he worked to develop more fully his theories as to the why of human behavior. It was his opinion that experience (or memory) combined with innate factors to evoke later behavior.[6]

Working from Darwin's experiments, Freud asserted what has been called the classical theory on motivation. He proposed that humans are driven by unconscious motivations, that they are not normally aware of everything they want and that they quite often have tastes, biases and attitudes which strongly influence their behavior but for which they cannot really account. Using the analogy of an iceberg, Freud stated that only a small proportion of a person's motivations were above the surface where they could be recognized. By far the greater percentage lay hidden. He felt that in most people a certain degree of unawareness was normal and even necessary, but that too much resulted in

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[5]Robert D. Strom.

[6]William James, The Principles of Psychology, Vol. I (New York: Holt, Rinehart and Winston, 1890), pp. 383-441.

neurosis and mental disease.[7] Freud espoused two basic instincts, sexual and aggressive; all others were derived from these two. Others, working from the same approach, added more. William McDougall, who characterized instincts as a complex of innate emotional strivings which predispose an individual to either approach or avoid stimuli, added flight, repulsion, curiosity, pugnacity, self-assertion, self-abasement, parental, reproductive, hunger, gregariousness, acquisitiveness and constructiveness to Freud's basic two.[8] By the 1920's the list of instincts in man numbered nearly two thousand and the complexity of the theory led to its demise. (It should be mentioned, however, that this theory has never been completely abandoned.)

THE DRIVE THEORY OF MOTIVATION

Dunlap, in 1919, said that "much activity considered as instinctive is really a combination of learned and unlearned responses."[9] Others called the "instincts" merely acquired activities from environmental influence. John B. Watson, often called the Father of Behavioristic Psychology,

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[7]Saul W. Gellerman, Motivation and Productivity (Vail-Ballou Press, Inc., 1963), p. 185.

[8]William McDougall, An Introduction to Social Psychology (New York: Garnes and Noble, 1960. Original, 1908).

[9]K. Dunlap, "Are There Any Instincts," Journal of Abnormal Psychology, 14 (1919), 307-311.

hastened the demise of instinctive psychology by a series of experiments designed to show that a specific response such as fear, for example, could be introduced to a child who had never known it before. Further experiments showed that under the proper stimulus conditions, it could also be removed.[10] Largely because of Watson's work, the instinct theory became anathema and "drives" and "conditioned reflexes" became the sanctioned terms.

The drive theory hypothesizes two drive types: primary (or innate) drives such as hunger, sex, pain and thirst; and secondary drives, those that are learned from the environment. Others use the terms, biological and psychological, to label the basic drives. Robert S. Woodworth in 1918 defined a drive as the energy that impels an organism to action as opposed to the habits that steer behavior in one direction or another.[11] Though the drive theory resembles the instinct theory, it is more acceptable today because all the drives which have been introduced have been introduced on the basis of careful laboratory experiments corroborating the hypotheses. Both the conditions under which the drive functions and the means of measuring

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[10]John B. Watson, Behavior: An Introduction to Comparative Psychology (New York: Holt, Rinehart and Wilson, 1914), pp. 106-107.

[11]Edward J. Murray, Motivation and Emotion (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1964), p. 6.

it are specified. Birch and Veroff, who used the term "incentive" rather than "drive" also pointed out that though the system is reminiscent of the instinct theory, "two important aspects of our position distinguish it from those early efforts: (1) each of the incentive systems has been manipulated (some more readily than others) in research studies, (2) each system figures in developmental problems that a typical organism faces in its growth and development."[12]

The drive theory was greatly advanced by the concept of homeostasis introduced by physiologist Walter B. Cannon in 1932. He postulated that a state of disequilibrium is set up in the body whenever internal conditions deviate from the normal steady state. Psychological drives are one way the body seeks to return to equilibrium. Some psychologists maintain that homeostasis, directly or indirectly, is the basis for all human motivation. Learning theorist Clark L. Hull felt that all behavior is motivated by homeostatic drives or secondary drives based on them and that all rewards are based on reduction of a primary homeostatic drive.[13]

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[12]David Birch and Joseph Veroff, Motivation: A Study of Action (Belmont, Cal.: Brooks-Cole Publishing Company, 1966), pp. 41-42.

[13]Edward J. Murray, p. 6.

DEFINITION OF MOTIVE

While many different conceptions about motivation have arisen, nearly all theorists agree that a motive can be defined as an internal factor that arouses, directs and integrates a person's behavior. This factor is not observable directly but inferred from his behavior and distinguished from other factors which can influence behavior, factors such as past experience, physical capabilities and environmental situation.[14]

Edward Murray contended that the drive, that is, the internal process which goads into action, is influenced by the external environment but that the drive itself is internal. Once the reward is reached, the drive is terminated. A person can be motivated by a variety of internal and external factors at any given time. He went on to say that a motive can be scientifically measured by the external conditions which produce it. Hunger, for instance, can be measured by the number of hours during which food is withheld. The behavior of a person is also a measurer of motivation; the vigor, frequency and speed of a response is sometimes an indication of motivation. He warned, however, that inferring motivation from behavior is sometimes misleading because of the other factors which can influence

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[14] Ibid., p. 7.

behavior (experience and environment), but when one knows the past experience and can control the present situation, the results will be valid.[15]

Saul Gellerman cited three reasons for this deceptive quality of motivation: (1) Masking. Here potentially important motives are concealed so well that they seem to be not even present. For example, an urge for material things may mask an underlying motive for something like prestige or achievement. If the masking motive can be removed, the individual will take on new interests. (2) Substitution. Here something such as money is substituted for things which cannot be acquired; achievement or prestige can again be used as examples. (3) Maturation. This is a case of reshuffling of motives; as one set is satisfied, another moves to the forefront. Gellerman explained that in a motivation hierarchy, the structure is not fixed; i.e., the primary motive today may not be tomorrow's. A reshuffling occurs whenever a motive has been so well satisfied that it sinks into the background and all others move up a notch to replace it. Time will gradually realign the importance of motives. If a motive persists, it is because the individual cannot outgrow it or his growth leads him further into it.[16]

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[15] Ibid., p. 10.

[16] Saul W. Gellerman, p. 176.

Despite masking, substitution and the changes of maturation, however, there is an underlying pattern of consistency in an individual's motivation. Gellerman insisted that most people remain quite consistent in their motivation patterns throughout life; they may outgrow particular interests and attitudes, but the basic motivation remains.[17]

Is there a way of increasing a drive, or the basic motivation, to facilitate the learning of a new response to get the appropriate reward, or in other words: Will a motivated student learn more than an unmotivated one? A number of experiments show that responses will be learned faster when drive is increased to moderate levels, but extreme degrees of drive will actually cause deterioration. This phenomenon, known as the Yerkes-Dodson Law, points up the fact that the optimum motivation for learning decreases with increasing task difficulty. Simple tasks are facilitated by a strong drive level but as the tasks become more and more difficult, the facilitation level of the drive gets lower and lower.[18]

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[17] Ibid., p. 142.

[18] Edward J. Murray, p. 12.

INNATE VERSUS DERIVED MOTIVATION

Classical instinct theorists assumed that many motives such as curiosity, play, etc. were innate. The reaction against these theorists in the twenties maintained there were only three basic motives: sex, hunger and fear. All others were derived from these. More recently, however, the swing is back to some innate motivation.

Freud's sublimation theory was one of the three derived-motivation theories explaining hobbies and creative work which were once in vogue. Perhaps the most compelling argument against his theory has come from Heinz Hartman who suggests that these develop autonomously in the child and are not dependent on sexual or aggressive motives.[19] Gordon Allport's concept of functional autonomy supported the derived-motivation theory. He said that some motives become detached from their physiological origins, that "early motives produce a profusion of new experiences which transform and redirect them."[20] Peter Bertocci refuted this when he said that the process which Allport described as a habit becoming functionally autonomous is really a switching of a habit from an old drive to a new one.[21] The third

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[19] Ibid., p. 71.

[20] Encyclopedia of Social Sciences (New York: MacMillan and Co.), IV. 515.

[21] Edward J. Murray, p. 72.

derived-motivation theory was Neal Miller's theory of acquired drives and rewards. He said that new motives may be learned on the basis of physiological drives and rewards. A neutral stimulus paired with the onset of a primary drive will arouse a drive by itself. Judson Brown criticized this theory on the basis that the only motive which fulfills all the criteria of an acquired motive is fear; he said it does not work for other motives.[22]

Psychologists today agree that curiosity, exploration, etc. can sometimes be learned on the basis of primary motives, but certainly not always. Murray, for instance, contended that while such activities can be extrinsically motivated, many times they are engaged in for their own sake, i.e., they are intrinsically rewarding. Activities which he regarded as being innate and therefore intrinsically motivated are: sensory, curiosity, activity, manipulatory, and cognitive. "These appear to be independent of other motives; they are not learned on the basis of simpler drives."[23] Sensory motives are innate, he averred and noted that humans are driven to seek neither an absence nor an excess but an optimal level of stimulation with some variation in it.[24] Birch and Veroff agreed that

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[22]Judson S. Brown, The Motivation of Behavior (New York: McGraw-Hill, 1961).

[23]Edward J. Murray, p. 75.

[24]Ibid.

sensory incentives are "presumably part of the 'built-ins' of the organism's constitution" but that instinctive behavior "often has to be stimulated during critical periods in the organism's early history for the behavior to be 'released' but, once stimulated, can appear effectively as part of the organism's repertoire."[25]

Murray also maintained that humans are motivated innately toward a moderate degree of novelty; too little bores and too much arouses avoidance.[26] Birch and Veroff confirmed this. "There perhaps is some optimal stimulus change that an animal will orient himself to within the curiosity incentives. Small changes are boring; large changes are frightening."[27] Commenting on Berlyne's experiments showing that three-month-old babies prefer patterns with more complex contours to those with less, Birch and Veroff went on to say that "such an early preference suggests that humans are disposed to be interested in complexity."[28] Murray used the illustration of learning to walk as an example of an intrinsic motivation for manipulatory activities. No extrinsic rewards exist but if reward is introduced, motivation seems geared toward getting the

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[25]David Birch and Joseph Veroff, p. 49.

[26]Edward J. Murray, p. 76.

[27]David Birch and Joseph Veroff, p. 53.

[28]Ibid.

reward with no further interest in manipulation for the sake of it.[29]

Murray contended that cognitive motives are innate, that use of the intellect can be intrinsically satisfying. The pleasure can be taken out of it, however, by making it serve extrinsic ends.[30] He has a lot of support for his view. Leon Festinger said that cognitive dissonance is an intrinsic motive though it may also be a learned one.[31] W. J. McKeachie spoke of the intrinsic motives which are released when subject matter is fused with the student's own aspirations and values,[32] and Stanford Ericksen complained that traditional experimental research on verbal learning and concept formation is deficient in its treatment of the intrinsic motivation to learn.[33]

Abraham Maslow proposed a number of primary motives which he termed instinctive. He ranged these on a scale

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[29]Edward J. Murray, p. 78.

[30]Ibid., p. 79.

[31]Leon Festinger, A Theory of Cognitive Dissonance (Stanford: Stanford University Press, 1957), p. 2.

[32]W. J. McKeachie, "Motivation, Teaching Methods and College Learning," Nebraska Symposium on Motivation, ed. M. R. Jones (Lincoln: University of Nebraska Press, 1961), pp. 111-142.

[33]Stanford C. Ericksen, "The Zigzag Curve of Learning," Instruction, Some Contemporary Viewpoints, ed. Laurence Siegel (San Francisco: Chandler Publishing Co., 1967), p. 159.

from lower to higher. First are the physiological motives such as hunger followed by safety motives such as fear, then motives for love and esteem. At the top he placed the motive for self-actualization. According to him, the lower the motive, the more crucial it is for survival and the earlier it appeared in evolution. The order given is also the order in which it appears in the development of the individual. A higher motive does not usually appear until the ones below it are satisfied. If and when all lower ones are satisfied, a motive for self-actualization emerges.[34]

Concerning social motivation, Murray said that the attachment of humans to other humans is primary and therefore innate. Freud, Allport and Miller all extended their derived-motivation theories to include social motivation. Later psychologists have differed with them with regard to the innate versus learned concepts, but confirm that their concepts of cathexis, learned channeling of motives and Gardner Murphy's canalization provide excellent explanations of the development of love, affection and social feeling.[35]

Murray concluded his discussion of innate versus learned motives by stating that man is born with a great many potentialities that interact with a complex physical

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[34]Abraham H. Maslow, Motivation and Personality (New York: Harper, 1954).

[35]Edward J. Murray, p. 92.

and social world to form a spectrum of motivation systems. He further said that probably no single motive is entirely innate or entirely learned; all motives contain some internal and some external features.[36]

There is much which remains to be researched in the areas of motivation but one concept emerges clear: motivation is one of the key factors, perhaps the most important, which determines behavior. What a person does with his abilities and knowledge depends on his motivation. Motives are complex. What moves one person will scarcely stir another and all of us are acted upon by varying and sometimes conflicting motives at the same time. Some motives may be unconscious and there are external factors which enter in. Experience and environment play their roles but a strongly-motivated person will seldom be deflected from his goal to any great extent.

How one perceives the external world depends much on the kinds of physical stimuli presented but experiments have demonstrated that motivation is an important factor. Moderate hunger, for example, tends to increase the number of food-related items seen by subjects in ambiguous pictures. Motivation also affects memory; it determines what information a person perceives and what he retains.

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[36] Ibid., p. 110.

Although it is hard to pinpoint, motivation affects dreaming and daydreaming. Because these processes are internal and therefore unobservable directly, the motivation is sometimes obscure but, according to Murray, "it is likely that motivation is an important determinant of the entirety of integrated, idle and bizarre thoughts experienced by an individual."[37]

Motivation affects social and emotional behavior. As an example of this, consider the deterioration in social and moral standards brought on by hunger. As to the effect of motivation on emotion, a disagreement exists as to the basic definition of emotion: one viewpoint is that emotion is an entirely different process from motivation because it has a disorganizing effect on behavior, while another view holds that emotion is simply one class of motives in that it can organize behavior just as a motive does. Murray has taken the position that emotions are a special class of motives. They are, he said, "powerful reactions that have motivating effects on behavior. . . . They influence learning, perception and performance."[38] Fear motivates the learning of new responses and anxiety concerning one's personal safety operates as a motive. The results of

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[37] Ibid., p. 16.

[38] Ibid., p. 49.

experiments performed by Basowitz and others illustrate this. Basowitz said that, at low levels, there is a general alerting of the organism and increased ability to cope with danger. He postulated that this level of anxiety motivates improved performance. His further conclusions strengthen the Yerkes-Dodson Law. "As stress increases and anxiety mounts, the organism becomes less capable of mastery. Behavior loses its spontaneity and flexibility. At higher levels there is no longer any ability for effective action. Organization of behavior breaks down."[39] Murray stated that "a moderate degree of anxiety can be a positive growth for a person, motivating creative responses and personal growth."[40]

Murray also noted that conflicting motives such as sex and guilt can influence behavior and that a motive may be unconscious and still determine behavior.

Ericksen spoke of the motivating effect of "uncertainty." He said that knowledge can be its own reward when the teacher gives the student the intellectual freedom to seek the particular pattern of information which will reduce his own uncertainties.[41] Stroud has quoted James as saying,

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[39]H. Basowitz et al, Anxiety and Stress (New York: McGraw-Hill, 1955).

[40]Edward J. Murray, p. 66.

[41]Stanford C. Ericksen.

"only what we partly know already inspires us with a desire to know more."[42] This concept is akin to the cognitive motive which Murray termed innate.

Motivation is very important in problem-solving situations. Again different levels of drive have differing effects on problem-solving. At the lower levels, problem-solving takes longer and shows fewer insightful solutions; moderate levels show efficient and purposeful performance but a high level shows deterioration.

Finally, motivation affects creative thinking. David Russell stated that creative thinking is similar to the problem-solving process. When isolated experiences are put into new combinations, creative thinking is taking place. Though this could also be said of problem solving, he noted that problem solving is more objective, more directed to some goal and must be consonant with the facts. Creative thinking is more personal and less fixed and achieves something new rather than coinciding with previously determined conditions. Creative thinking involves more intuition and imagination, though the difference is more in degree than in kind.[43]

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[42]James B. Stroud, Psychology in Education (New York: Longmans, Green and Co., 1946), p. 142.

[43]David H. Russell, Children's Thinking (Boston: Ginn and Company, 1956), pp. 282, 285.

MOTIVATION AND CREATIVITY

Although the terms "motivation" and "creativity" have become somewhat common among educators, there is relatively little literature which attempts to define either the dimension or the role which motivation plays in creativity. There are many definitions of creativity (see previous chapter) and despite the fact that there is a surprising amount of consistency in these definitions, one of the most fundamental questions about creative behavior is: why does anyone make the effort to be creative? One study concluded that "it seems like an awful lot of trouble to be creative. You can certainly make much more money and lead a calmer and more tranquil life by not being creative."[44] Frank Barron concluded: "Although no evidence existed directly in the data, there was at least the implication that creativity was maintained at some cost to personal security, or that a special motive was required to sustain creativity in the face of its comparative devaluation by the immediately present representatives of society."[45]

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[44]Sarnoff A. Mednick and Martha T. Mednick, "An Associative Interpretation of the Creative Process," Widening Horizons in Creativity, ed. Calvin W. Taylor (New York: John Wiley and Sons, Inc., 1964), p. 61.

[45]Frank Barron, Creative Person and Creative Process (New York: Holt, Rinehart and Winston, Inc., 1969), p. 125.

Thus, what causes an individual to be creative, or rather what motivates the individual to be creative, is certainly an important dimension of creativity. Motivation, as indicated in the earlier sections of this chapter, has been measured and described in many different ways. "Research on motivation seems to divide into two main areas: the motivation proper and the reinforcement. Under the heading of motivation, psychologists study the conditions, mainly internal, that instigate various types of goal-directed actions. The concept of reinforcement referred to the observation that certain types of stimulation have rewarding or punishing effects on behavior and thus may be used to alter the probability of occurrence of particular actions."[46]

Carried one step further, one can say, then, that an important separation can be made which will describe motivation as intrinsic or extrinsic. Intrinsic motivation has been defined as that which naturally wells up from within and usually is most difficult to squelch. Extrinsic motivation is directed by that which one thinks he should do or that which he feels that others think he should do. Extrinsic motivation can drive and push a person to activity equal to, or perhaps even greater than, intrinsic motivation; such

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[46]Dalbir Bindra and Jane Stewart, eds., Motivation (Baltimore, Maryland: Penguin Books, 1971), p. 9.

is the force of social activity, power dynamics, or intellectual prestige. Even the motivation to learn is more often extrinsic than intrinsic, at least in the United States. Dr. Cannon is reported to have said in a conversation with A. N. Whitehead, "the trouble is that so many Americans want an education not for its own sake but in hope of getting a better job."[47]

Maslow defined the same two polar coordinates of motivation as "growth (or self-actualization motivation) and deficit-motivation." Of extrinsic or deficit-motivation he said, "in essence the deficit-motivated man is far more dependent upon other people than is the man who is predominantly growth-motivated."[48]

The total intrinsic growth energy in a given individual is a function of innate and cultural factors which vary widely from individual to individual. One could probably make a case for the fact that this difference in growth factor, or growth energy, is one of the major differences between the ordinary person and the highly creative individual. Phillip H. Abelson put it this way: "Motivation is essential to creativity; without it even the best minds accomplish little. . . . The capacity to be motivated

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[47]Lucien Price, Dialogues of Alfred North Whitehead (New York: Mentor Books, 1954), p. 70.

[48]Abraham H. Maslow, Toward a Psychology of Being (New York: D. Van Nostrand Co., 1962), p. 33.

has its roots in genetics and is nurtured by environment."[49]

Those writers and thinkers who have delved most specifically into the relatively unexplored area of creativity seem to have identified similar kinds of phenomena but even in identifying this phenomena they have failed to call it by the same name. For example, Abraham H. Maslow in describing the aesthetic needs stated, "We know even less about these than about the others, and yet the testimony of history, of the humanities, and of aestheticians, forbids us to by-pass this uncomfortable (to the scientist) area. I have attempted to study this phenomenon on a clinical-personalogical basis with selected individuals, and have at least convinced myself that in some individuals there is a truly basic aesthetic need."[50] E. Paul Torrance, on the other hand, an individual who is internationally recognized for his efforts in studying and identifying the gifted and creative, stated that "man is an inquisitive, exploring kind of being, who cannot keep his restless mind inactive even when there are no problems to be solved. He seems to be unable to keep from digging into things, turning ideas over in his mind, trying out new combinations, searching for new relationships and struggling for new insights. Man's search

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[49]Phillip H. Abelson, Relation of Group Activity to Creativity in Science, Daedalus, Vol. 4, No. 3, pp. 605-606.

[50]Abraham H. Maslow, Motivation and Personality, p. 51.

for beauty--the aesthetic--is almost relentless."[51] Both writers, in a sense, then, are discussing the aesthetic needs of the individual and, in fact, one might surmise that both are alluding to a dimension of the personality which is unfulfilled unless the individual can pursue and explore and search for the aesthetic. How does one define aesthetic? What would be aesthetic or beautiful to one person might well be repulsive to another. Maslow, for example, states in his definition of self-actualization that "man's desire for self-fulfillment, namely, the tendency for him to become actualized in what he is potentially. . . . The specific form that these needs will take will, of course, vary greatly from person to person. In one individual it may take the form of the desire to be an ideal mother, in another it may be expressed athletically, and in still another it may be expressed in painting pictures or in inventions."[52] Maslow seems to be suggesting that one of the dimensions of an individual become self-fulfilled is the dimension of satisfying the aesthetic need and in this sense the aesthetic need clearly arrives out of and is derived from what is important or desirable to the individual. In

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[51]E. Paul Torrance, "Creativity and Its Educational Implications for the Gifted," The Gifted Child Quarterly (Summer, 1968), pp. 75-76.

[52]Abraham H. Maslow, Motivation and Personality, p. 46.

one of his earlier writings, Maslow indicated that "a particular individual may not search for beauty in a painting or in a sonata. A young athlete once described a perfect tackle which was as aesthetic a product as a sonnet and could be approached in the same spirit of creativity and achievement. From a housewife, a first-rate soup is more aesthetic and represents a higher level of achievement than a second-rate painting. Even from a psychiatrist, the aesthetic delight in his every-day job of helping people to create themselves, is, in fact, creativity enough."[53]

It is basic to this thesis that all humans possess in some degree the predilection to creativity and that not only is the motive to create basically intrinsic but that it is exceedingly strong. It has been pointed out that in order to engage in the creative process, the creative person must often face the disparagement, even ridicule, of his peers and the unconcern and often hostility of society. Only a highly motivated person would do this.

Theorists generally have taken the position that the creative man, the one in whom creativity operates at its highest, is the man who is actually "driven" by some internal force to create. Maslow's concept of the self-actualizing man supports this. He said that only in

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[53]Abraham H. Maslow, Toward a Psychology of Being, p. 127.

fulfilling his need to create is the human being reaching his highest potential.[54] Carl Rogers described intrinsic, creative motivation when he said: "The individual creates primarily because it is satisfying to him and it is felt to be self-actualizing."[55]

Torrance, who described creativity as a natural, healthy human process, said that strong motivations are involved at each stage. Speaking of the process, he said that when the learner perceives a problem, he experiences a "need" or "divine discontent" until he begins to work on it. He searches for solutions but until his guesses or hypotheses are tested, modified and retested, he is still uncomfortable and is motivated to continue the process. He continues until his solution is logically and aesthetically satisfying; even then the tension remains unrelieved until the learner communicates in some way his discoveries, solutions or productions. He frankly acknowledged that many educators call this nothing more than the problem-solving process, but he concluded: "I say the process nearly always involves some degree of creativity even though the degree

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[54] Ibid.

[55] Carl R. Rogers, "Toward a Theory of Creativity," A Source Book for Creative Thinking, eds. Sidney J. Parnes and Harold F. Harding (New York: Charles Scribner's Sons, 1962), p. 63.

may vary greatly from one situation to another."[56] He postulated that this was because not only does the person have to arrive at a solution, very often he has to redefine or reformulate the problem and reject or discard previously accepted ideas.[57] He then cited the following factors which he sees in creative motivation: (1) the factor of curiosity, (2) the need to meet a challenge and to attempt a difficult task, (3) the need to be completely preoccupied with the task at hand, (4) the need to be honest and to search for the truth, and (5) the need to be an individual, to be different. All these, he concluded, require strong motivation.[58]

MacKinnon described the same concept in different terms; he spoke of the feeling of dissatisfaction with what one has done, and the feeling that one hasn't reached his inner goal, the individualistic, unique and idiosyncratic goal of perfection which the highly creative individual has set for himself. This, he concluded, is what drives the

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[56] E. Paul Torrance, Encouraging Creativity in the Classroom (Dubuque, Iowa: Wm. C. Brown Company Publishers, 1970), pp. 1, 2.

[57] Ibid., p. 2.

[58] Ibid., pp. 16-21.

creative person.[59] He also noted that it is a fundamental characteristic of creative persons that they are strongly motivated to achieve in situations in which independence of thought and action are called for, but have much less interest in, or motivation to, achieve in situations which demand conforming behavior.[60]

Perhaps this intrinsic motivation is the basic reason for society's "nervousness" about the creative person, for the hostility of society to the creative process and product: there is really no tangible reward society can use to control the creative person since his motivation does not depend on external factors, but on his own internal resources.

If one accepts the premise that man is naturally creative and is intrinsically driven or motivated to create or else to face a psychic disturbance, why then are not all men universally creative? Kubie held that it is in man's very nature to behave creatively but that his potential for for such behavior is distorted by neurotic processes; creativity is inherent in man, he said, but suppressed by

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[59]Donald W. MacKinnon, "Instructional Media in the Nurturing of Creativity," Instructional Media and Creativity, eds. Calvin W. Taylor and Frank E. Williams (New York: John Wiley and Sons, Inc., 1966), pp. 196-198.

[60]Ibid.

society's demand for adjustive behavior.[61] Others have maintained a similar answer; it was seen in the last chapter the great lengths to which society will go to inhibit the creative process. A fuller definition of this question has been given by Irving Taylor in his article entitled "A Transactional Approach to Creativity."[62]

Taylor believes that creative motivation is more probably a form of perceptual transaction in which the environment, or the way that an individual perceives the environment, becomes altered or reorganized in accordance with one's personal perceptions. Personal perceptions would comprise all of the individual's needs, judgments, hypotheses, or any other organizing forces that actively exist within the person.

Initially, there is probably a discrepancy between the inner world of personal perception and the perception of the outer world. The disparity which exists between the two perceptions probably produces a state of organismic tension which can be reduced in at least one of two ways: either the person alters his personal perceptions to correspond with the external, social environment; or the

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[61]Lawrence S. Kubie, Neurotic Distortion of the Creative Process (Lawrence, Kansas: University of Kansas Press, 1958).

[62]Irving Taylor, "A Transactional Approach to Creativity and Its Implications for Education," Journal of Creative Behavior (Third Quarter, 1971), pp. 190ff.

person alters or reorganizes the perceptions of the environment congruent with his personal world. This, of course, would result in a new perceptual organization.

It is also probable that the individual achieves a deeper satisfaction by reorganizing the perceptions of the external world than he would by conforming to other's perceptions of the external environment. That is to say, destroying existing environmental organizations and replacing them with newer and uniquely developed relevant ones would probably provide deeper satisfactions than following existing patterns of recognized and socially acceptable behavior. Yet this does not answer the question of "Why are some of the reorganized environments considered to be creative while others are considered to be irrelevant or foolish or a hodgepodge of nonsense?"

The time frame within which creativity is measured can probably be as meaningful as the creative act itself. For example, many creative acts or many creative products were not recognized at the time they were introduced but oftentimes, as in the case of Mendel's notion of genetics, have taken as long as fifty years to be recognized. Yet, the absence of recognition does not seem to affect the motivation of the individual who is engaged in a creative act.

While little is known, relatively speaking, about motivation and creativity, most writers tend to agree that

the motivation for creativity is probably more internal than external and, in fact, the individual involved in the act of creativity is probably moving more toward satisfying the organismic tensions which exist within himself than he is in seeking an external approval for his product and when the internal organismic tension is reduced, the need to create is probably reduced accordingly.

SUMMARY AND CONCLUSIONS

The concept of motivation provides a framework for understanding the creative process. Although motivation is acknowledged to be the force or condition within the organism which impels it to act or respond, the question of whether or not motivation is external or internal has never been fully resolved. The major complication which deters a clear-cut answer to this question is inherent in the nature of the concept: motivation is, at best, a hypothetical construct and must be inferred from the overt action of the organism. In all probability no single motive is entirely innate or entirely learned; all motives contain some internal and some external features.

Apparently the need to reduce the tensions caused by "uncertainty" is a dimension of motivation which has implications for education and creativity: Ericksen identified the importance of this concept when he said that knowledge can be its own reward when the teacher gives the

student the intellectual freedom to seek the particular pattern of information which will reduce his own uncertainties.

Torrance identified five factors which he considered to be operant in the creative process. They were: (1) the factor of curiosity; (2) the need to meet a challenge and to attempt a difficult task; (3) the need to be completely preoccupied with the task at hand; (4) the need to be honest and to search for the truth; and (5) the need to be an individual, to be different. Common to all of the above characteristics is their essentially intrinsic nature: there is really no tangible reward or punishment which society can offer since motivation for the creative person does not depend upon external factors, but on his own internal resources. A creative person is difficult to control.

Taylor's transactional theory of creativity has taken the position that initially a type of organismic tension exists within the individual because a discrepancy exists between his personal perceptions and his perceptions of the outer world. The individual can deal with this tension in one of two ways: either he adjusts his behavior to conform or he adjusts the perceptions of others to conform to his personal perceptions. In all probability, the creative person is motivated primarily because he receives

reinforcement for acts which tend to transact the environment rather than his conforming to it.

Torrance has spoken clearly of the power of man's creative need: "It should be clear that the creative needs are those which lead us to respond constructively to new situations, rather than merely adapt or adjust to new or existing situations. This, in turn, makes clear that the true value of creativity is to be found in daily living, not just in the creation of new products."[63]

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[63] E. Paul Torrance, Encouraging Creativity in the Classroom, p. 15.

CHAPTER IV

A CONCEPTUAL MODEL OF CREATIVITY SOME IMPLICATIONS FOR EDUCATION

In this chapter a conceptual model for creativity[1] will be related to possible implications for the processes of curriculum and education. Before considering creativity and curriculum, a note will be introduced to explain, at least on a partial basis, the attitudes which are commonly held about creativity, in general, and creative people, in particular. In most instances, these attitudes are inferred rather than explicitly stated.

ATTITUDES ABOUT CREATIVITY

Although there has been a rapidly expanding group of educators and others who have explored the possibilities of creativity in both education and industry, resistance has been met; one authority stated: "There have been obstacles and resistances to the spread of this special approach as might be expected. Inertia in the educational

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[1]Irving A. Taylor, "A Transactional Approach to Creativity and Its Implications for Education," Journal of Creative Behavior, 5, No. 3 (Third Quarter, 1971), 190ff.

establishment itself has provided part of the resistance. The existence of other formidable problems has claimed the attention of educational leaders to whom 'creativity' seems a luxury that can wait till better times."[2]

Another attitude prominently stated is that which suggests that the creative person is probably somewhere along the borderline of insanity. Frank Barron has suggested that this attitude was probably encouraged by a study done by Francis Galton, Hereditary Genius (1869) which analyzed from the biographical point of view the characteristics of genius. Barron indicated that Galton's work together with subsequent spin-off studies written mostly from a psychiatric point of view, promoted the so-called "pathographies of genius" and "helped draw clinic and drawing room together in the consensus that 'great wits are sure to madness near allied,' as Dryden, following Seneca had said."[3]

An even more pervasive attitude which education seems to hold toward creativity is that of studying the results of creative endeavor rather than the processes which produced the creative product. Thus, students study Newton's Laws or Einstein's Theories rather than the

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[2]Frank Barron, Creative Person and Creative Process (New York: Holt, Rinehart and Winston, Inc., 1969), pp. 1-2.

[3]Ibid., p. 53.

processes which Einstein or Newton followed in creating their products. Perhaps Barron, in another context, has identified one of the major reasons why the product of creativity is studied rather than the process:

> Creation has long been thought of as a mystery and has been deemed the province of religion or, more broadly, of the supernatural. Supernaturalism includes magic as well as religion, and may be described as an attitude of mind in which occurrence of the unfamiliar is prone to be interpreted as an interruption of the natural course of events, or as evidence of the existence of another world. The radically novel occurrence thus borders on the uncanny and properly arouses awe.
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> This sense of mystery surrounding creation is close to universal sentiment, and certainly it may be found in the breasts of even the most scientific of psychologists as they approach the phenomenon of psychic creativity.[4]

The word "creativity" itself appears to elicit a "knee-jerk" response from educators. This attitude was expressed as part of a summary session of a meeting on creativity. At a special conference on developing instructional media for creativity, one of the participants, after a discussion on problem-solving, stated: "This is a semantic problem, too. Perhaps the less one says about creativity, the better. And the more that's said about problem-solving, the better, because problem-solving has a better standing among educators."[5] From the standpoint of society and

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[4] Ibid., pp. 9-10.

[5] Malcolm Provus, "Some Personal Observations on Creativity," Instructional Media and Creativity, eds. Calvin W. Taylor and Frank E. Williams (New York: John Wiley and Sons, Inc., 1966), p. 132.

organizations, Franz Alexander observed that contemporary society, bureaucratized as it has become, may find creativity more threatening than serviceable.[6] The present writer's attitude is that creativity is a natural human process; that is, the creative process is not unique to any kind of elite and focus should be primarily on the process rather than the product. Jerome Bruner stated that "the will to learn is an intrinsic motive, one that finds both its source and its reward in its own exercise. The will to learn becomes a 'problem' only under specialized circumstances like those of a school, where a curriculum is set, students confined, and a path fixed. The problem exists not so much in learning itself, but in the fact that what the school imposes often fails to enlist the natural energies that sustain spontaneous learning--curiosity, a desire for competence, aspiration to emulate a model, and a deep-sensed commitment to the web of social reciprocity."[7]

The writer has chosen a model that introduces the creative process into a language of curriculum. The model was selected as an illustration of the language of creativity and curriculum for three reasons: first, it is an

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[6]Franz Alexander, "Neurosis and Creativity," American Journal of Psychoanalysis, 24 (1964), pp. 117-29.

[7]Jerome Bruner, Toward a Theory of Instruction (Cambridge, Mass.: Harvard University Press, 1966), p. 127.

eclectic system, and second, it synthesizes many concepts which others have mentioned and referred to in various discussions of creativity. Finally, this model for creativity was arrived at after a close examination of some two hundred fifty definitions of creativity. In the preceding chapter, mention was made of motivation and the dimensions of motivation as a part of creativity. It was argued that the creative person is motivated primarily because he receives reinforcement for acts which tend to transact the environment rather than conforming to it.

The basic framework, adapted from Taylor's system for creativity, is supplemented by definitions, terms, hypotheses, and concepts supplied by a wide variety of writers in the field of creativity. In some instances, the present writer adopted terminology which was not used by any writer. For example, Taylor and other writers utilize the term "environment" to describe the external forces which either support, negate, or impinge in various ways on the creative process while the present writer uses the term "psycho-social milieu" because it describes more accurately the kinds of forces which tend to influence creativity. The source for the information on Taylor's system for creativity is taken from his article entitled, "A Transactional Approach to Creativity and Its Implications for Education,"[8]

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[8]Irving A. Taylor.

and assorted lectures and discussions between the present writer and Dr. Taylor.

Both creativity and curriculum have consistently shown a concern for the following factors: the personality, the problem, the process, the product, and the environment. Each of these will be discussed from the standpoint of creativity and curriculum in order to demonstrate that language relates the two concepts.

PERSONALITY

Central to the consideration of the idea of creativity as an area of educational interest is the personality of the so-called creative individual. All other discussion is essentially a study of refinements of aspects of this essential personality. Creative persons tend to express by action and/or example personal characteristics common to all people. It is the degree to which they express these characteristics, however, which causes them to differ from the norm.

Intelligence does not necessarily separate the creative individual from the masses. Creativity and IQ seem to have little relation to one another, as rated by our society; therefore, Barron's conclusion that "for certain intrinsically creative activities a specifiable minimum IQ is probably necessary in order to engage in the activity at all, but that beyond the minimum, which often is

surprisingly low, has little correlation with scores on IQ tests," seems pertinent to this discussion.[9]

Personal characteristics such as independence of thought and action form a part of the framework of the creative personality. Maslow described the creative person as a "self-actualizing individual."[10] The psychic distance often felt leads, according to Torrance to feelings of estrangement from others in the social situation.[11] At the same time, the inner resources of the creative person often provides him with defenses against society as well as himself until such time as he has learned to understand and accept himself and his "uniqueness." Kubie has credited the creative person with the capacity for integration and reflection leading to self-knowledge which contributes to the maturity often manifested by the creative person.[12] Kris's theory of regression ". . . in service of the ego" as a self-correcting mechanism supports the theory found in studies by the Institute of Personality Assessment and

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[9]Frank Barron, Creative Person and Creative Process, p. 42.

[10]Abraham H. Maslow, Motivation and Personality (New York: Harper and Brothers, 1954).

[11]E. Paul Torrance, Guiding Creative Talent (New Jersey: Prentice-Hall, Inc., 1962).

[12]Lawrence S. Kubie, Neurotic Distortion of the Creative Process (Lawrence: The University of Kansas Press, 1958).

Research[13] of the inner strength and the ability to deal successfully with problems as characteristic of the creative person.

Rather than repression of problems which seems to be more akin to the social norm, the creative person internally converts the repression to separate factors leading to complexity of intellect and psyche. This process, in turn, allows the problem to surface, where it is incorporated into the consciousness of the individual. The process seems to be a motion from complex confusion to complex self-understanding leading to simplicity of response and acceptance through integration and synthesis.[14] A tolerance for ambiguity, external as well as internal, helps to strengthen the creative person and eventually enables him to be creative in spite of personal psychological and social risks and occasional seeming intellectual disorder. The personal strength of the creative person combined with the quality of originality enables him to synthesize mentally new ideas experienced separately. Thus, the distinguishing act of the creative person--creation--occurs.[15]

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[13]Ernst Kris, "Psychoanalysis and the Study of Creative Imagination," Bulletin of the New York Academy of Medicine, 29 (1953), 334-351.

[14]Donald W. MacKinnon, "What Makes a Person Creative," Saturday Review, 45 (Feb. 10, 1962), 15-17.

[15]William J. J. Gordon, Synectics: The Development of Creative Capacity (New York: Harper and Row, 1961).

A heightened sensitivity, both sensory[16] and perceptual, an openness and receptivity to the impressions of the inner and outer world[17] gives the creative person a greater field of stimuli to which to respond. In contemporary American society the integration of the masculine quality of aggression coupled with the feminine quality of sensitivity gives the creative person an added dimension. This uncommon characteristic is often looked upon with disfavor, since in Western civilization these characteristics are considered to be distinctly separate and sex-related.[18]

Finally, Guilford's[19] description of the "spontaneous flexibility" of the creative person describes a characteristic which helps maintain a sense of balance for the creative person. The tensions of psychological estrangement and societal pressure are relieved by the ability to indulge in humor--in "playful manipulation of

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[16]Stanwood Cobb, The Importance of Creativity (Metuchen, N.J.: The Scarecrow Press, 1967), p. 69.

[17]Ross L. Mooney, Creation and Teaching (Columbus: The Ohio State University), p. 3.

[18]William J. J. Gordon.

[19]J. P. Guilford, "Traits of Creativity," Creativity and Its Cultivation, ed. Harold H. Anderson (New York: Harper and Brothers, 1959), pp. 157-159.

words, concepts, and commonplace assumptions."[20] The cycle of creativity is self-perpetuating for the creative person. Since his psyche must respond to his own judgment of the validity of the creative act,[21] the creative person responds to his internal needs in spite of the demands of society for his conformity to its standards.[22]

PROBLEM

Considering the personality of the creative person as essential to the process of creativity leads to an investigation of that to which the creative energy is directed: the problem. Fromm[23] stated that the individual has a basic need which is fulfilled by the creative act. Coinciding with the strong drive of independence characteristic of the creative person is the need to express his "humanness."[24] By transcending the experiences and societal

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[20]William J. J. Gordon.

[21]Carl R. Rogers, On Becoming a Person (Boston: Houghton Mifflin Company, 1961), p. 354.

[22]Frank Barron, "The Disposition Towards Originality," Scientific Creativity, eds. Calvin W. Taylor and Frank Barron (New York: John Wiley and Sons, Inc., 1963), pp. 139-152.

[23]Erich Fromm, "Value, Psychology, and Human Existence," New Knowledge in Human Values, ed. A. H. Maslow (New York: Harper, 1959), pp. 153ff.

[24]M. M. Tumin, "Education, Development and the Creative Process," Aesthetic Forms and Education, ed. M. F. Andrews (Syracuse: Syracuse University Press, 1958), pp. 26ff.

pressure which govern the actions of the average person the creative person can respond to the problem in its archetypal form. Thus, he becomes the "shaper" of society rather than being shaped.[25] Rogers[26] stressed society's desperate need of the creative person. Toynbee called them "mankind's ultimate capital asset."[27]

Until creativity is cultivated and/or encouraged, we must rely on the random individual whose inner strengths require that he reject conformity and respond to his own state of disequilibrium by responding creatively to mankind's basic problems.

PROCESS

The process by which a creative person deals with a problem has a language of its own. As discussed by various writers, it is a multi-dimensional experience. Kris' definition is one of the simplest. He referred to

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[25]Clyde E. Curran, "History and the Creative Individual," Journal of Humanistic Psychology (Fall, 1961), p. 60.

[26]Carl R. Rogers, "Toward a Theory of Creativity," A Source Book for Creative Thinking, eds. Sidney J. Parnes and Harold F. Harding (New York: Charles Scribner's Sons, 1962), p. 69.

[27]Arnold Toynbee, "Is America Neglecting Her Creative Talents?" Widening Horizons in Creativity, ed. Calvin W. Taylor (New York: John Wiley and Sons, Inc., 1964), p. 4.

inspiration leading to elaboration.[28] Rossman[29] and Osborn[30] are in agreement that the creative process is most complex, requiring seven stages to be accomplished. They differ in their delineation of the stages. Wallas[31] agreed with Poincare in designating four stages. They agreed in particular on a stage, which, though labeled differently, serves as a period of respite before the resolution of the problem.

The creative process is not efficient in the sense of being computer-like. Indeed, according to Wallas the time span involved varies with the problem. Pinpointing the nature of the problem may be one of the lengthiest periods involved in the creative process. During the incubationary period the creative person may regress for reasons not clearly understood. This regression may allow for an unconscious "sifting" of ideas. After which, according to Wallas, illumination may occur leading to

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[28]Ernst Kris.

[29]J. Rossman, The Psychology of the Inventor, new and rev. ed. (Washington, D.C.: Inventors Publishing Company, 1939).

[30]Alex F. Osborn, Applied Imagination, 3rd ed., rev. (New York: Charles Scribner's Sons, 1963).

[31]Graham Wallas, The Art of Thought (New York: Harcourt Brace and Company, 1926).

verification, or as Foshay called it, closure.[32] Simpson offered the theory that the creative process involves an "altogether different pattern of thought."[33] In all probability, Simpson is overlooking the obvious: the creative process is the process of thinking itself.

PRODUCT

The concept of the creative product is varied in that it is defined by writers and others as "novel," "original," "new," or unexpected.[34] Lucretius said there were no new ideas, only a reassembling of old knowledge; however, Hallman believed the creative process accomplishes more than simply uniting past and present. He synthesizes and manages to project these elements onto previously unrelated materials.[35] Most often the more creative the person, the more removed the ideas are from one another

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[32]A. W. Foshay, "The Creative Process Described," Creativity in Teaching, ed. Alice Miel (Belmont, Cal.: Wadsworth, 1961), p. 26.

[33]R. M. Simpson, "Creative Imagination," American Journal of Psychology, 33 (1922), 234-243.

[34]Sarnoff A. Mednick and Martha T. Mednick, "An Associative Interpretation of the Creative Process," Widening Horizons in Creativity, p. 55.

[35]Ralph J. Hallman, "Implications of Creativity for Philosophies of Education," Dissertation, Claremont Graduate School and University Center, 1964, p. 84. See also, D. E. Spearman, The Creative Mind (New York: D. Appleton-Century, 1931), p. 22.

which are combined to focus on the problem.[36] While the creative process is, once again, one that produces a harmony within the creative person, it is also recognized as creative because it is new, novel, or original and because it is satisfactory to society. It is that which, as stated before, affects society, instead of being affected or shaped by society.[37]

PSYCHO-SOCIAL MILIEU

The freedom which has become synonymous with creativity is gained after a struggle--with self, with family, with peers, with society--but, in the struggle, society benefits. Some changes occur, as the creative person adapts to himself and society.[38] Greenacre felt that the penchant for creativity exists already within the unborn child. Some neurological beginning takes place before the child comes directly into contact with the stimuli of this world. Studies have shown that the creative person functions well in a family situation which tends to

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[36]Sarnoff A. Mednick and Martha T. Mednick.

[37]J. E. Arnold, "Creativity in Engineering," Creativity: An Examination of the Creative Process, ed. P. Smith (New York: Hastings House, 1959), pp. 33-46.

[38]Antonia Wenkart, "Creativity and Freedom," The Creative Imagination, ed. Hendrik M. Ruitenbeek (Chicago: Quadrangle Books, 1965), pp. 354-357.

emphasize individuality.[39] The psychic distance the creative person employs in his adaptation seems to be noticeable early in life. Unfortunately, the creative person must choose between two roads: acculturation or creativity. One is anathema to the other. Barron[40] and Cobb[41] found creativity diminished by the threat of anxiety. Toynbee stated that a non-hostile environment was the only one truly receptive to creativity.

It is therefore the responsibility of education to provide opportunities for creativity--to nurture its growth--for, as Cobb says, ". . . genius depends on society for stimuli and opportunities," as society depends on creativity for growth.

A LANGUAGE FOR CURRICULUM

An analysis of the foregoing discussion on creativity reveals that a clustering of concepts has developed around five general areas: personality, problem, process, product, and the psycho-social milieu. While most

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[39]Jacob W. Getzels and Philip W. Jackson, Creativity and Intelligence (New York: John Wiley, 1962), Chapters 1-3.

[40]Frank Barron, Creative Person and Creative Process, pp. 168-169.

[41]Stanwood Cobb, p. 8.

writers have tended to isolate these areas individually, they cannot be understood in the absence of an acknowledgment of their interdependence. While the creative personality tends to exhibit certain traits or characteristics, he does so only in a specific environment when dealing with a problem through a process which produces a product. In this sense, both creativity and curriculum conform to the commonly accepted definition of a "system"; that is, they are sequential and their parts are interrelated.

A vocabulary based upon the language of creativity as it applies to curriculum clearly emerges from the work which has been done in the field of creativity.

Personality

If one eliminates the word "creative" and substitutes instead the word "client" or "learner" or "student," the following traits or characteristics have been identified as creative.

Independence. Self-motivating. Self-sustaining plus the ability to change; flexibility.

Originality. The ability to make whole more than sum of parts. Tends to deal with ideas and concepts which could be categorized as statistically infrequent.

Sensitivity. Responds intuitively, cognitively, and perceptually to a heightened degree.

Internal resources. This concept includes psychic strength, resistance to acculturation, and is combined with the ability to maintain sustained effort under unfavorable circumstances.

Openness. This trait is identified as being receptive to many different types of stimuli. Tending to maintain suspended judgment. Tentative in perceptions and evaluations, and possessing a high degree of tolerance for ambiguity, both internally and externally.

Internal control. The ability to maintain suspended judgment on a matter for long periods of time while considering a wide range of options; maintaining divergent thinking and withholding convergence.

Courage. Courage is manifested in the form of an individual externalizing an internal system. The creative personality tends to accept his own views and perceptions of reality rather than those suggested by society; moreover, it is the characteristic of courage which permits the individual to act rather than be acted upon.

Bi-sexuality. This trait is defined as a combination of socially defined masculine and feminine

characteristics of aggressiveness and sensitivity.

Problem

The types of problems which have engaged the interests of creative people tend to have certain commonalities. Generally speaking, creative people are attracted to generic or basic kinds of problems or questions which are considered to be meaningful and important. The following dimensions constitute the anatomy of the creative problem:

Parturiency. This concept is defined as being at the point of producing something; a sense of readiness or timeliness in finding a solution.

Articulation. This concept not only involves the ability to see a problem, but also the ability to identify the problem in its phenotypical and genotypical terms. The creative person moves beyond the immediate manifestations of a problem and tends to examine it from the standpoint of root causes.

Heuristics. Is defined as "serving to guide, discover or reveal; specifically, valuable for empirical research but incapable of proof." In most instances the creative person is dealing with a problem which is located on the edges or frontiers of the unknown. Accordingly, he

will follow hunches or guesses which an ordinary person would not contemplate.

Radical. Is defined as being of or related to the origin. The creative person seeks to identify those features of a problem from which other factors emerge; the solution is to be found at the center or core of the problem.

Disparity. The creative person deliberately seeks out and juxtaposes paradoxes or contradictions. Far from being intimidated by insoluble problems, the creative person is challenged by them. Many individual acts of creativity have emerged by linking disparate items or concepts.

Synthesis. Many creative acts could be defined as pulling together a single composition made up of disparate parts or elements so as to form a whole. In most cases, the sum of the product is greater than its individual components.

Process

The creative process is essentially the process of thinking. Most writers in the field of creativity have identified the process of creativity in terms of stages. Taylor has brought together the essential dimensions of the creative process. For purposes of education and curriculum,

the creative process might best be described as the curriculum: teaching.

Exposure. Is defined as the type and scope of materials and options available to the individual. Typically, the creative person seeks out a variety of materials from diverse sources, the wider and more diverse the sources, the better.

Divergence. Is identified as that stage of the creative process during which judgment is suspended; unusual combinations are considered, and convergence or premature jumping to conclusions is avoided.

Conversion. This stage of the creative process is defined as the point in time at which the creative problem is restated, mentally, in its phenotypical and genotypical terms. Root causes are separated from manifestations and the problem is seen with all of its implications.

Convergence. This term is defined as the inevitable outcome of the thought process and is probably a natural process. The creative person appears to have considerable ability to check or withhold convergence until the prior processes of exposure, divergence, and conversion have been completed.

Expression. This stage of the creative process is defined as the point when the solution is stated or articulated in its totality.

Product

This dimension of creativity is probably the most controversial, since there appears to be less general agreement among writers in the field of creativity concerning it than any of the other phases of creativity. Some writers take the position that creativity does not necessarily involve the production of a product while others, such as Taylor, argue that a product is necessary. The present writer's position is that a product is a necessary and critical dimension of the creative process. The term "create" means to produce something which has not existed before and which is capable of being measured and evaluated. To engage in the creative process without producing a product would be the most irritating kind of frustration.

Criteria for evaluating the creative product relates directly to evaluation of the outcome of the process.

Generative. This concept is defined as measure or degree which the product causes or stimulates others either to tease out additional implications or to promote spin-off designs.

Reformulation. This term is defined as the measure of extent of re-definition of the field; to what extent has a new or significant portion of the environment been opened up.

Originality. Is defined as measurement of the product by evaluating the statistical infrequency of occurrence; it is the only one of its kind.

Relevancy. This concept is defined as an evaluation of the extent to which the product meets some need, resolves some dilemma or explains some previously unexplained phenomena.

Hedonics. This term seeks to answer the question: how attractive is the product? The creative product tends to have an attractive appearance; it is balanced and symmetrical.

Complexity. This term is identified as a measurement of the extent to which many parts have been integrated into the product. The creative product appears, at first glance, to be a simple affair; yet, closer examination reveals that a number of diverse parts have been incorporated into a single product.

Condensation. This term evaluates the extent to which the many parts have been compressed or condensed and

irrelevant parts dismissed. The creative product tends to possess integrity and complexity of diverse parts, and tends to be tightly woven.

Psycho-Social Milieu

This facet of the creative process describes the supportive type of environment in which creativity can best flourish. The types of support are mainly psychological and sociological.

Movement. The psycho-social milieu should not be static, but rather unstable; a pronounced movement of ideas and/or sensory stimulation tends to be more supportive of creativity than a rigid, structural type of environment.

Facilities. This concept suggests that the creative person requires a wide variety of materials consistent with his wide span of interest. Typically, the materials consist of books, equipment and objects drawn from diverse subject areas.

Freedom. This term denotes a key feature relating to creativity, and all writers agree that an environment which promotes freedom is essential to creativity. Freedom means not only being permitted to pursue and explore a wide range of subjects, it also means an absence of pressure to converge or to find a solution.

Permutation. Is defined as a process of continuous rearrangement within a grouping. The creative person seeks to transform rather than accept; he is constantly altering or editing and looking for different patterns.

Support. Creativity flourishes best when the environment motivates and rewards those acts which externalize an internal system; it should motivate and reward those efforts which produce divergent thinking and produce unpredictable outcomes.

It should be stressed that the five processes (personality, problem, process, product, and psycho-social milieu) mentioned above are interdependent and constitute a system. In perspective these dimensions and their inter-relationships describe the curriculum process.

LEVELS OF CREATIVITY

One probable source of confusion which affects notions about creativity is the typical polarization which results from categorization: an individual is considered to be "creative" or "normal." Taylor has identified "types" or "levels" of creativity. This typology has significant implications for education for he identifies these types of creativity as being characteristic of the disposition of individuality. The types of creativity are:

Expressive

This level of creativity is the least sophisticated; it functions and flourishes best in an environment which has varied sensory stimulation. The product or outcome of this type of creativity is a spontaneous act.

Technical

This level of creativity relies on skill and tends to produce a product based upon proficiency in a craft.

Inventive

Inventive people tend to move toward utilitarian solutions; the specific type of process involved application of ingenuity.

Innovative

This level of creativity deals primarily at the sub-system level and seeks to tease out implications from basic systems.

Emergentive

This level of creativity is rarest; the Einstein and Newton type--they occur once every hundred years or so; they deal at the rock-bottom level with basic assumptions and tend to produce original assumptions.

SUMMARY

Those who have concentrated their efforts on the creative process and the activities of the creative personalities have, in actuality, dealt with the essence of curriculum itself. Despite the fact that Barron, Taylor, Kubie, Torrance and others have focused their attention on those few who made outstanding contributions, the process of learning is the same for the creative genius as the average person; the difference lies in the skills and resources which he can bring to bear on a problem. Rogers has stated that the process is the same: ". . .there is no fundamental difference in the creative process as it is evidenced in painting a picture, composing a symphony, devising new instruments of killing, developing a scientific theory, discovering new procedures in human relationships, or creating new formings of one's own personality as in psychotherapy."[42]

By identifying the language of creativity and applying this language to the curriculum process, a common set of terms and concepts can be applied to the learner, to the content of curriculum, to instruction, to evaluation, and to the psycho-social milieu in which the activity

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[42]Carl R. Rogers, "Toward a Theory of Creativity," A Source Book for Creative Thinking, eds. S. J. Parnes and H. F. Harding (New York: Scribner's, 1962), p. 65.

occurs. The characteristics of creativity have focused on the process, and creativity, like education, is concerned with the discovery and/or application of knowledge.

CHAPTER V

SUMMARY AND CONCLUSIONS

In surveying the curriculum field it is apparent that it has a pervasive ahistorical quality to it. Confusion exists as to the basic meanings of terms such as curriculum, instruction, theory, education, and practice. Those interested in curriculum are presently engaged in studying the field itself and their role in it. The leading writers are divided into camps with one camp devoted to the linear model supporting behavioral approaches and the other supporting more open, less specified approaches.

A leader in the field of curriculum, Joseph Schwab, pronounced the curriculum field moribund and suggested that a new language was needed. The use of any language is both value based and value laden for language itself is a symbol system; the paradox being that language must be used to discuss language. Recognizing and acknowledging the above, those interested in building a new language for curriculum must turn to those values and stated objectives commonly associated with education: the discovery and/or application of knowledge. Both the discovery and application of knowledge involve one in the creative process. It follows

that the language of creativity describes the curriculum process and therefore one must better understand the creative process itself.

Most of the research and writing on the creative process has occurred during the last quarter of a century. These studies have attempted for the most part to identify the characteristics of the creative person, the factors involved in creativity, the stages of creativity, and the results (products) of creativity, and the environmental conditions which foster creativity. The creative person has been treated as unusual or gifted, and needs therefore special treatment. The present writer believes that all persons possess the ability to engage themselves in the creative process. Therefore the focus of this dissertation is on the creative process itself and its implications for a language of curriculum.

Those who have studied creativity have focused on five areas: personality, problem, process, product, and environment, or psycho-social milieu. The specific characteristics of each of these areas, particularly the language which describes interrelationship between them most clearly identifies the essence of curriculum.

The specific terminology associated with each dimension is as follows: (1) personality: independence, originality, sensitivity, internal resources, openness,

internal control, courage, and bi-sexuality; (2) problem: parturiency, articulation, heuristics, radical, disparity, and synthesis; (3) process: exposure, divergence, conversion, convergence, and expression; (4) product: generative, reformulation, originality, relevancy, hedonics, complexity, and condensation; (5) psycho-social milieu: movement, facilities, freedom, permutation, and support.

TOPICS FOR FURTHER STUDY

The suggestion of a curricular language based on creativity introduces several kinds of questions to which further study should be given. Areas of inquiry should include, but not necessarily be limited to, the following:

Continuing Study of the Creative Process

The creative process is probably synonymous with the act of thinking. The effects of divergent options and the manner in which each contributes to convergence appears to be a critical factor in the creative process.

Characteristics of the Creative Personality

Additional study and investigation needs to be made about the motivational factors involved in the creative act. The question of "Why do some children maintain creativity while others suppress it?" is a continuing question for those who have devoted their professional lives to the study of creativity.

Environmental Factors Which Foster Creativity

Such questions as: What are the effects of the environment on creativity? Do various types of creativity require different environmental conditions for optimum productivity? Each of these questions will require continuing study.

Teacher Training

Teacher training and preparation for interacting in a creative way would probably warrant further study. Such questions as how to identify creative talent, how to encourage creative behavior, and how to evaluate creative products would have profound implications for teacher training. Entrance and exit points would be emphasized as well as the quality of experience between these points.

Organizational Structure

A change in the curricular model would have important implications for the organizational structure of the school. The current organizational model, the bureaucratic model, might not be the most effective. Perhaps a clinical model such as that used by hospitals or a professional model which is used by highly specialized research units might better suit a school with a curricular model which seeks and promotes unpredictable outcomes. Research and program development would then focus on the relationship

between comparative political sociology and creativity as evidenced in curriculum and instruction.

Testing and Evaluation Procedures

Standard IQ tests and their relationship to creative talent suggests that different testing procedures are needed both to identify creative talent or ability and to evaluate the creative product. Present procedures and evaluation measures simply fail to take into account many variables critical to the creativity process.

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