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Confusion, Lack of Consensus, and the Definition of Creativity as a Construct

ABSTRACT Among the changes employers say are needed in the educational preparation of American young people to meet the evolving needs of the workplace is improvement in the development of individual creativity and creative thinking. However, a variety of definitions for *creativity* exist, hindering a consistent educational response. The major areas of controversy concerning creativity's definition are reviewed here, in roughly chronological order corresponding to the publication of each definition of significant influence. Each definition's reasons for failing to achieve widespread acceptance are analyzed, and a suggestion for a general definition of the sort that should be widely acceptable is provided.

INTRODUCTION When the Education Commission of the States directed a committee made up of leaders of various organizations and industries to identify those skills that would be considered basic for the future, creativity and synthesis were two of the nine skills listed. The others were organization and reference skills, problem-solving strategies, communication through a variety of modes, decision-making given incomplete information, application, critical thinking, and evaluation and analysis skills (McTighe & Schollenberger, 1985). Of these other seven, both problem-solving strategies and decision-making given incomplete information would seem to involve creative components. In a later survey of business leaders, educators, and college students, creativity was chosen most often from a list of 33 qualities or talents as the one most critical to effective leadership in the future (Bleedorn, 1986). Smith and Carlsson (1990) pointed out that "In evaluations of the reasons for accomplish-

ment and failure, creativity appears to have replaced intelligence as the focus of interest" (pp. 1-2). Both thinking creatively and solving problems were among the foundation skills identified for the Department of Labor by the Secretary's Commission on Achieving Necessary Skills as required for competence in the workplace (Secretary's Commission on Achieving Necessary Skills, in a recent pamphlet available from the U.S. Department of Labor, no publication date given).

According to Everett and Lippert (1994), because companies increasingly want decisions made at the lowest level, creativity and independent thought are consequently becoming more essential for success in the workplace. And, CEO's in a study by Hersh (1997) identified creativity as an important educational goal and outcome.

At least since the 1918 publication of the *Cardinal Principles of Secondary Education* by the National Education Association's Commission on the Reorganization of Secondary Education, preparation for the world of work has been considered one of the primary goals of American education (Ornstein & Levine, 1993).

Vocational preparation of American young people for the competition engendered by an increasingly global economy should, then, include improvement in their abilities to think creatively, with "direct instruction aimed at increasing creative thinking abilities" required for the "nurturing of creativity in schools" (Barron, 1988, p. 96). However, one of the factors limiting the capability to respond to this need appears to be the widespread lack of agreement about what the term *creativity* means, since as Welsch (1981), pointed out, the lack of a standard definition causes educators to be "unable to discern what is creative and what is not." And, if they "cannot identify creativity in the behavior of students, they cannot consciously nurture . . . its development" (p. 2).

As early as 1960, Repucci counted between 50 and 60 definitions extant in the literature on creativity. Commenting on the situation in 1961, Rhodes said that "The profusion [of definitions] was enough to give one the impression that creativity is a province for pseudo-intellectuals" (p. 306). Twenty years later, an extensive literature review forced Welsch (1981) to conclude that "the literature contains such a variance of definitional statements that the task of defining the concept of creativity is a challenging one" (p. 3). No more agreement exists today than then. According to Ebert (1994), although the term *creativity* is used as if general agreement exists on

But What Is
Creativity? A
Plethora of
Definitions

the construct's definition, definitions are more often specific to particular authors than a matter of consensus. And, Daniels-McGhee and Davis (1994) stated flatly, "there is no uniform agreement on either a definition of creativity or the makeup of the creative process" (p. 161).

NOVELTY, THE
ONE AREA OF
AGREEMENT — BUT
HOW NOVEL? AND
TO WHOM?

Are All Novel
Outcomes Creative?

The one area of agreement among writers on this topic is that creativity is demonstrated by some sort of novel outcome. In fact, Hausman (1964,) went so far as to say that "each appearance of genuine novelty is a sign of creative activity" (p. 20). As a definition, though, this is so exceedingly broad that most would find it unacceptable, since even a different sort of involuntary frown or wink would be covered by it, and few would be likely to accept such actions as demonstrations of creativity. Hausman did qualify this definition by adding that he meant genuine novelty to refer to "that character of the result of a creative process which marks the result as different in kind or type from any form available to the process before it began" (p. 20), but since this uses a form (*creative*) of the word in question (*creativity*), it does not necessarily add a great deal of clarity.

New to the
Individual or New
to Society?

Other definitions which have been offered can generally be divided according to two opposing views of how to tell when creativity has been demonstrated.

The first position may perhaps have been best expressed by Guilford (1950), who said:

It is probably only a layman's idea that the creative person is peculiarly gifted with a certain quality that ordinary people do not have. This conception can be dismissed by psychologists, very likely by common consent. The general psychological conviction seems to be that all individuals possess in some degree all abilities, except for the occurrence of pathologies. Creative acts can therefore be expected, no matter how feeble or infrequent, of almost all individuals (p. 446).

Thurstone (1952) agreed, saying simply that an act is creative if it is new to the thinker, and that it does not make any difference if society regards the idea as novel. Carl Rogers concurred, noting that a child inventing a new game, a housewife developing a new sauce, and Einstein formulating his theory of relativity would all be demonstrating creativity, though Rogers's definition provided his view of the creative process ("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”) rather than of creativity as a construct (Rogers, 1954, p. 250). Torrance and Goff (1989) agreed, saying “Some degree of creativity occurs whenever a person solves a problem for which he/she had no previous learned or practical solution” (p. 117).

At the opposite end of the spectrum is the definition offered by Stein (1953), who felt that creativity must be defined in terms of the culture in which it appears, and that a work must be novel or new to that culture to be creative. By “novel” or “new,” he meant that the work must not have existed previously in the same form. He added the further condition that the novel work must also be “accepted as tenable or useful or satisfying by a group in time” (p. 322). This view of what constitutes creativity effectively limits application of the term to a select group of people and products. Apparently, even those artists and inventors whose work simply did not become accepted or appreciated by others would not be considered creative by Stein.

Those who subscribe to this view of creativity are unlikely to consider worthwhile or effective attempts to prepare students to think more creatively because of the limited number likely to be influenced by such preparation. Also, as Getzels and Jackson (1962) pointed out, definitions like Stein’s would make the empirical study of creativity in children almost impossible.

Thus, though there have been others (e.g. Nicholls, 1972) who have concurred with Stein’s position, the more common view among writers in the field has supported the position that creative abilities are found to some extent in nearly everyone (and thus offer at least the potential for being developed or encouraged), and that creativity is determined by what is new for the individual rather than society as a whole. The pamphlet cited earlier indicates that this has also been the position of the United States Department of Labor.

DIVERGENT
THINKING AND
CREATIVE THINKING:
EQUIVALENT?

Divergent Thinking
Versus Convergent
Thinking

In addition to the disagreement over what constitutes the demonstration of creativity, definition of the term has been hampered by controversy over the extent to which divergent thinking ability equals creative thinking ability and creativity.

Divergent thinking is the opposite of convergent thinking. Convergent thinking is the kind of thinking used when a person must “converge” on one right answer to a question or problem, such as, “What is the capital of France?”

Divergent Thinking — Two Types

Divergent thinking can be of two types. One is the sort of thinking that produces multiple responses to a question — answers elicited, for example, by a question like, “How many 19th century British authors can you name?” Few people would assert that this type of divergent thinking demonstrates creativity.

The other type of divergent thinking produces novel ideas and unusual responses to questions. An area of contention since Guilford (1956, 1967a, 1967b) first noted the role of divergent production in the demonstration of creativity, it is over the extent to which this type of divergent thinking ability is representative of creative thinking abilities that the disagreement lies.

Task Involvement — More of an Indicator?

Nicholls (1972) said, “If research evidence on eminent creators is taken as a guide, there is more justification for calling the tendency to become intrinsically involved in tasks creativity than there is for labeling divergent thinking creativity” (p. 723).

But surely a more effective indicator of creative abilities than intrinsic task involvement is needed. A stamp collector, for example, could be intrinsically involved all day in a task related to his/her hobby, and nothing creative need ever result. Nor is intrinsic task involvement necessary for a creative act. Fleming’s discovery of penicillin, for example, did not come about as a result of intrinsic task involvement. He simply noticed the simultaneous presence of a type of mold and dead bacteria. He did, of course, have the knowledge and preparation necessary to notice the unusual proximity of penicillium mold and dead staphylococci, because he had long been interested in antiseptics, but the random occurrence of a penicillium mold spore contaminating a staphylococcal culture plate coupled with the right frame of mind to notice the results instead of simply throwing out the mold-contaminated dish was a matter of pure chance, as Fleming himself noted, not task involvement. In fact, it was because he was willing to drop the specific task he was involved in that he further investigated what he had observed (Ludovici, 1952). This willingness to question a new observation and pursue a different direction can, after all, be considered an indication of divergent thinking ability. If divergent thinking ability includes the ability to develop novel ideas (even while working at some distinctly different task or project), it must be a better indicator of creative ability than the tendency to become intrinsically involved in tasks.

It probably should be noted here that, though Fleming did subsequent research on the bactericidal applications of peni-

Improvement in Real
Life Creativity —
Essential Evidence?

cillin, Howard Walter Florey and, especially, Ernst Boris Chain were primarily responsible for the development of its widespread medical applications, and their creative work transforming Fleming's discoveries into usable medical applications did involve some persistent and dogged task involvement (Stevenson, 1953). This does not, however, negate the serendipitous circumstances of penicillin's discovery.

Mansfield, Busse, and Krepelka (1978) also questioned the equivalence of creativity and divergent thinking, saying that even if a program of instruction did lead to improvement on divergent thinking tasks, there is no evidence that this would correspond to any improvement in real-life creativity. The pertinence of this criticism lies in the fact that most attempts to improve creativity through instruction have focused on divergent thinking, and pencil and paper creativity tests (which means virtually all group tests of creativity) have been considered primarily tests of divergent thinking (Milgram & Hong, 1993; Ripple, 1989).

However, the stipulation by Mansfield et al. (1978) of observable improvement in real life creativity would seem to require that a person who has successfully completed creativity instruction develop some sort of observable product later and that a test of creative ability measure that person's tendency to do so. This, though, imposes a burden that is not imposed on other areas of instruction. No one supposes, for example, that a ninth grader who completes a science course will do anything demonstrably scientific later on, and it is not assumed that a test measuring that student's scientific knowledge and ability will be a predictor of observable later scientific accomplishments. All that is expected is that the student will have the scientific knowledge and ability when and if he/she needs to use them, and that is all a science test is expected to measure. To ask that a test do more, whether in science or creativity instruction, is to ask for successful instruction in motivation, which educators are not currently able to do with long-term effects. Thus, it is specious to argue that divergent thinking is not equivalent to creativity because no improvement in real-life creativity has been shown to be a result if improvement could be effected in divergent thinking.

Do Any General
Creative Thinking
Skills Exist?

Baer (1993/1994) questioned not only the equivalence of creativity and divergent thinking, but the existence of *any* general creative thinking skills or cognitive abilities underlying creative performance. He argued that if such domain-transcending skills or abilities existed, then individuals who demonstrated

high creative ability on one type of task should also demonstrate high creative ability on other tasks in different domains. Similarly, low creative performance on one task should predict low creative performance on other tasks. This did not prove to be the case, however, in studies he conducted. Indeed, high creative performance on a task did not seem to predict high creative performance on other tasks, even those he considered to be in the same domain, such as writing poems and writing short stories.

However, a great many factors besides those abilities (such as divergent thinking) generally posited as likely components of creativity would be likely to affect an individual's performance on the tasks Baer used (writing poems, writing short stories, making collages, creating equations, and creating mathematical word problems). Spatial abilities, sensitivity to nuances of color, and notions of balance and symmetry would all be factors affecting the level of creativity demonstrated by a person's collage, for example, but would not be likely to affect the creativity shown by a short story at all. A person's level of exposure to collages and short stories would be likely to differ, too, as would a person's interest level in each.

Even two tasks which may seem on the surface to be in the same domain, such as Baer's short story and poem writing tasks, may actually call on very different abilities. A short story, as narrative prose, does not try to convey its message in an abbreviated form as a poem does, through the use of allusions and symbolism to suggest other associations and emotional reactions. Narrative prose does not call for the same sensitivity to the rhythms of language, nor, necessarily, the ability to use those rhythms for a purpose. The same is true for the sounds contained in language. Additionally, most people would have a greater level of exposure to and consequent background knowledge about narrative prose.

Few would argue whether good physical coordination was an ability underlying both hockey and figure skating, yet one would not expect a professional hockey player to execute a stunning triple axel, nor a champion figure skater to make a difficult shot in the Stanley Cup playoffs. The failure of each to excel in the other's field would not be taken as evidence that physical coordination did not underlie success in both. It would simply be accepted that each lacked other abilities and skills needed to perform in the other's area, even though hockey and figure skating could easily be considered to be in the same domain.

Given the disparity in the qualities pertinent to creating poems, stories, collages, equations, and mathematical word problems, why would anyone even suggest that the failure of creative performance on one task to predict creative performance on the others would negate the existence of general creative thinking skills or cognitive abilities underlying creative performance?

Baer asked the wrong question. The question should have been, "Does training in a skill or ability posited to underlie creative thinking affect the level of an individual's creative performance on a series of tasks from differing domains?" If, after divergent thinking training, subjects did not perform more creatively than they had previously on tasks such as writing stories, constructing collages, and creating mathematical word problems while other conditions remained the same, Baer would still be left with the question of whether or not the instructional approach had been appropriate, but if other conditions remained the same, and subjects did perform more creatively, then it would have to be assumed that divergent thinking ability did underlie creative abilities across domains. Although he explained it as being the result of training in the variety of narrowly applicable task-specific skills found in divergent thinking exercises and tested for on divergent thinking tests, this is *exactly what Baer said has been found to be true of training in divergent thinking*. How much more sensible it would have been to conclude that the divergent thinking training had at least left subjects with a greater propensity to let their minds consider a number of ideas rather than focus on one possible answer to a question or solution to a problem!

Necessary to
Creativity but Not
the Same

Nevertheless, this does not mean that divergent thinking is synonymous with creativity or creative thinking. Certainly, as the type of thinking responsible for novel ideas, divergent thinking is a necessary component of creativity. After all, a person must have a novel idea before he or she can develop a product or a novel solution to a problem. When the development of a novel idea is a person's goal, divergent thinking and creativity probably can be considered equivalent.

There is, nonetheless, validity to the position that they are not necessarily the same. One reason for this is that, as Guilford (1975) pointed out, convergent thinking can also be a component of creative thinking. Guilford stressed the importance to creativity of the transformation and redefinition abilities in his Structure-of-the-Intellect model, but also stated that some of these abilities reside in the model's convergent production category, with such transformation and redefinition abilities

being especially important to scientific and mathematical thinking.

So in this respect, divergent thinking and creative thinking are not synonymous (but neither are transformation abilities, since the results of a transformation need not be novel, but simply changed in form, function, purpose, et cetera, as when a blade of grass or a maple seed is transformed into a whistle by a child who did not make the discovery of their ability to serve in this capacity him/herself and thus is doing nothing particularly creative).

And, as Maltzman (1960) pointed out, the term *creativity* is even less synonymous with the term *divergent thinking* (though Maltzman used the term *original thinking* rather than *divergent thinking*) than *creative thinking* is, because *creativity* holds more implications of a product.

It must be pointed out, however, that even if a group test of creativity is actually more a test of divergent thinking than creativity, it is still testing for something essential to creativity, and, though the predictive validity coefficients reported throughout the 1970's and early 1980's were only marginal for tests of divergent thinking, more recent research has yielded respectable predictive validity coefficients (Okuda, Runco, & Berger, 1991).

Perhaps it might be better to say, as Getzels and Jackson (1962) did about their research, that they test for creative potential, a concept reiterated and underscored by Runco (1993), who said that "Although a high score on a divergent thinking test does not guarantee outstanding performance in the natural environment, these tests do lead to useful predictions about who is capable of such performances," providing "very useful estimates of the potential for creative thought" (p.16).

Mednick and Mednick (1965), as well as Maltzman, used the term *original thinking* instead of *divergent thinking*. They, however, distinguished between original thinking and creative thinking by imposing requirements on originality, particularly the requirement of usefulness, noting that many original ideas are expressed in mental institutions, but few of these are likely to be considered creative. Still, scientific discoveries do not always have applications at the time of their discovery, rendering them apparently uncreative according to the Mednicks' stipulation, though they would nevertheless seem to represent creative work on the part of the researcher. Also, one wonders just how the criterion of usefulness would apply to many types of art work.

PERSON, PROCESS,
PRESS, PRODUCT

After studying existing definitions of creativity, Rhodes (1961) concluded that individual definitions tended to reflect one of four strands: The person involved in creation, the mental processes operative in creating ideas, the influence of the environment — or press — on the person, and the product that results. Rhodes decided that, though each strand can be discussed and studied individually, only in unity do they operate functionally, with creativity thus comprising the four strands, or four P's, of creativity: Person, process, press, and products (Rhodes, 1961).

Rhodes (1961) *defined* creativity, however, as “a noun naming the phenomenon in which a person communicates a new concept (which is the product)” (p. 305), which it does not seem likely many would consider an acceptable definition. The biggest problem with it is the emphasis it places on communication without even mentioning the product's development. It seems to indicate that it is communication of the product that is the creative act rather than the product's development, in which case someone could be considered creative who announced the development of a concept by someone else, while the person who actually developed it would not be. Assuredly, this is not what Rhodes had in mind, but it is what his definition seems to indicate. Additionally, under such a definition, a privately solved problem, a privately committed act, or a privately developed concept presumably could not be said to make use of creative thinking. Had Rhodes woven more from his “four P's” into his definition, it probably would have been more appropriate, but as it is, most would probably find his definition difficult to accept.

MORE
ASSOCIATIONS
AND MORE THAT
ARE UNIQUE

Wallach and Kogan (1965) said that creativity “is indicated by the ability to produce more associations and to produce more that are unique” (p. 14). But surely, there must be more to creativity than simply producing unique associations. A person could spend great lengths of time producing associations between items normally thought unassociated (say, the bumps on a pickle and the knotholes on a fencepost) and never actually produce any sort of creative product, even a completed idea.

A BEHAVIORISTIC
APPROACH

Parnes (1967), on the other hand, offered a behavioristic definition of creative behavior: (a) a response, or pattern of responses which (b) operate on internal and/or external discriminative stimuli, usually called things, words, symbols, etc.,

and (c) result in at least one unique combination that reinforces the response or pattern of responses (p. 27).

As a behaviorist, Parnes's theoretical approach would have been to focus on behavior which might be considered creative rather than on a definition of the term *creativity*, and if, for some individuals, a unique combination of things, words, et cetera, does serve as a reinforcer of the behavior which led to that combination, then those individuals might well be motivated to continue that behavior. Since such a unique combination would presumably not have existed before, at least in the mind of the individual who constructed it, the ability to make such combinations probably would be at least a form of creative behavior. But, more must be involved in the definition of creativity as a human quality and a psychological construct than simply formulating unique combinations. In the same way that making unique associations would probably not by itself be considered by most to demonstrate creativity, neither would simply formulating combinations without the demonstration of some further ability to apply those combinations in some sort of context — even if only in the development of at least a communicable idea.

GUILFORD'S STRUCTURE OF THE INTELLECT

Guilford (1967a, 1967b, 1975) placed creativity within the context of his Structure-of-the Intellect model, which was in development during the 1950's (Guilford, 1956) but is generally referenced to the publication of *The Nature of Human Intelligence* (1967b), rather than offering an exact definition. He said that the abilities most relevant for creative thinking are to be found in the divergent production abilities, in which information is generated from information; and transformation abilities, which involve revision of what one experiences or knows, thereby producing new forms and patterns (which, it would seem, since the formation of a novel idea is involved, could also be considered a form of divergent thinking). This does explain where in the Guilford model creative abilities would be found, but it does not define the term *creativity*.

CREATIVITY AS PROBLEM-SOLVING Definition Equals Process

Some have tended to focus on the problem-solving aspect of creativity when trying to formulate a definition. One example is Torrance (1965), who primarily restated his concept of the creative process, rather than actually defining the term *creativity*:

I have tried to describe creative thinking as taking place in the process of sensing difficulties, problems, gaps in

information, missing elements; making guesses or formulating hypotheses about these deficiencies; testing and retesting them; and finally in communicating the results (p. 8).

Torrance *has*, in this definition, listed steps which could constitute a process, and it may be that these steps could be applied to some demonstrations of creative thinking or creativity (though as a statement of a process peculiarly creative in nature, it does not seem to differ too significantly from that traditionally considered the scientific method). Like Guilford, Torrance has not, however, defined either *creative thinking* or *creativity*, as a type of thinking or a psychological construct. Instead, what he has identified are steps or stages which might be involved in the demonstration of that construct. This is akin to saying that the steps in the scientific method are the same as the definition of *science*, a statement few would be likely to accept.

Problem-Solving Not
the Impetus of
Artistic Creation

Additionally, Torrance's definition is applicable only to those types of creative thinking or demonstrations of creativity for which problem-solving is the impetus. But as Leddy (1990) and Runco (1996) have pointed out, that would not necessarily seem to be the case for artistic creativity. For example, the creation of a novel artistic product such as a poem or a sculpture could be a reflection of self-expression and need not result from a difficulty or problem (though admittedly, once the decision has been made to create such a product, the procedure for doing so becomes a problem or series of problems).

Listening for Smells
— Creativity Defies
Definition?

Torrance's later attempts to offer definitions are not much more helpful. In 1988, 13 years later, he said that "Creativity defies precise definition," stating that he was "quite happy with" this conclusion (p. 43). He then restated the process definition given above, calling it his "definition of creativity for research purposes" (p. 47). This time, he offered a "definition" he considered more appropriate to artistic creation. For this "artistic definition," he offered a series of line drawings with captions, suggesting that each be prefaced with the phrase "Creativity is like . . ." (p. 49.) Applied to the drawings, this would give a series of definitions, such as, "Creativity is like digging deeper;" "Creativity is like listening for smells;" "Creativity is like plugging into the sun;" and "Creativity is like shaking hands with tomorrow" (pp. 49-56). He also claimed to like for artistic purposes the following definition from G. M. Prince (1970) which is called an "analogical definition," but is really a series of oxymorons, "Creativity: an arbitrary harmony, an expected

astonishment, a habitual revelation, a familiar surprise, a generous selfishness" (p. xiii).

Additionally, Torrance offered his "survival definition," which he developed from working with the air force to train crewmen to survive emergencies and extreme conditions, "When a person has no learned or practiced solution to a problem, some degree of creativity is required" (p. 57).

As has already been seen, Torrance's research definition is more a listing of stages in problem-solving than the definition of a psychological construct, and, while it might be applicable to creative problem-solving, does not fit artistic creativity very well. The series of captioned line drawings, while themselves an exercise in creativity and often entertaining (amusing even), are not definitions, explaining the meaning of a term for those who are unsure of it through the use of other words the meanings of which are likely to be held in more general agreement. Rather, they are comparisons, telling not what creativity *is*, but what it is *like*. And, since listening for smells and plugging into the sun are not within most people's experiences, consensus on what they would be like would probably be impossible to reach. The same lack of agreement is likely for the oxymorons cited from Prince, along with the additional caveat that the types of events they describe need not be creative in nature. Couldn't regular pronouncements by the President's press secretary of the Chief Executive's intentions be considered "habitual revelations?" Surely a birthday party, even if the exact time and place of it were not always the same, would be a "familiar surprise" if it happened annually. Neither of these are particularly creative occurrences.

The third of Torrance's definitions, the "survival definition," does not define *creativity* or *creative thinking* at all, but only gives a type of circumstance when it is needed. Presumably, in an unfamiliar situation where a person's survival was at stake, some fast creative problem-solving would be essential, but saying it is essential does not tell *what* it is.

Simply stating that "Creativity defies precise definition" (Torrance, 1988, p. 43) is no solution, either. Schools and teachers cannot be expected to meet society's needs and expectations if they do not know what those needs and expectations are. It may be that a certain amount of ambiguity will always attend the use of a term like *creativity* or *creative thinking*, for which no tangible referent is possible. However, creativity is not the only term in common educational usage for which this is the case. *Science*, for example, can have different meanings to

different people, and different people would place different topics under its aegis. Nevertheless, if someone states that a high school curriculum needs to include more science, no one thinks that the speaker is referring to parapsychology. Few would think it likely that the speaker meant linguistics, and though there might be some question about it, by many he or she would probably not even be interpreted to mean any of the social sciences. Similarly, parents would be mystified if their children's art classes focused on poetry or four part harmony, though both poetry and music are considered forms of art. In both cases, science and art, though the boundaries of the disciplines may be fuzzy, and the definitions of the terms may consequently be ambiguous, enough general agreement has been reached so that schools and teachers know what expectations exist. That probably is not the case with creativity instruction, and saying that "Creativity defies precise definition," or is like "listening for smells," does not serve as much of a guide to schools trying to meet the increasing recommendations by representatives of government and industry that students be taught to be more creative.

Similar Problems
with the Humanist
Approach

A similar problem exists with the attempts of humanist psychologist Abraham Maslow (1968) to define creativity. Dismissing special talent of the genius type as poorly understood by psychology, Maslow focused instead on self-actualizing (SA) creativeness, "the universal heritage of every human being that is born" (p. 135). Maslow's position was thus similar to the beliefs of Guilford (1950), Thurstone (1952), Torrance and Goff (1989), and others in the widespread nature of creative abilities. Maslow did, however, say that SA creativeness "seems to covary with psychological health" (p. 135), and that indeed it "seems to be synonymous with health itself," "a defining characteristic of essential humanness" (p. 145), noting that almost any child can compose a song or a dance on a moment's notice.

And, it may well be true that a psychologically healthy person is normally able to demonstrate some degree of creativity. But simply saying so does not say what it is that the healthy person is demonstrating. Most would probably concur that a healthy person would also exhibit kindness, but this does not make kindness synonymous with creativity.

There are many such aspects of a person who is healthy, both physically and psychologically. For example, because we know what blood pressure is and that all living people have it, we have determined how to measure it and to work to improve

blood pressure levels that need it. A blood pressure reading of 158/100 would lead to medical efforts to lower it through diet and/or medication. Similarly, a child who is observed being unkind typically has that pointed out to him/her in an effort to improve the child's level of kindness. If the observation had been made that physically unhealthy people seemed to have high blood pressure, and the definition simply left at "seems to be synonymous with health itself," medical science would have no idea how to change blood pressure levels as distinct from other aspects of a person's health. In the same way, if people simply observed that kindness was "a defining characteristic of essential humanness," distinguishing it from generosity and other similar qualities would be difficult, as would be encouraging specific instances of it in others. For the same reasons, more is clearly needed for a definition of creativity than Maslow has provided.

OTHER IDEAS Leadership

Characteristics other than divergent thinking, problem-solving, and task involvement abilities, and the ability to make a great many associations have been identified as aspects of creativity and used to define the term. Simonton (1984) equated creativity with leadership, because it entails personal influence over others. But as Johnson-Laird (1988) pointed out, though great creators can be leaders, and leaders can be creative, "not all great creators have their schools of followers or are even judged to be great within their lifetimes" (p. 203), and he gave Johann Sebastian Bach as an example. Conversely, an autocratic ruler may gain and maintain power by sheer force and be quite lacking in imagination.

Perception

Smith and Carlsson (1990) placed creativity at least partly in the context of a psychology of perception, defining it as a "generative or productive way of experiencing reality, including the perceiver's own self" (p. 5), which does rightly identify one who creates as generative or productive, and identifies perception in some form as a necessary part of being creative, the latter an aspect not much discussed by writers in the field, except perhaps in relation to the perception of the existence of a problem in need of solution. There are, however, serious problems with this definition, too. One is that Smith and Carlsson make no mention of the novelty or uniqueness of any resulting idea, product, or problem solution; yet, as noted earlier, originality, uniqueness, or novelty of a product or idea has been considered one of the primary determinants of creativity virtually since the inception of research on the topic

(Guilford, 1950; Thurstone, 1952; Stein, 1953; Maltzman, 1960; Getzels & Jackson, 1962; Hausman, 1964; Mednick & Mednick, 1965; Wallach & Kogan, 1965; Nicholls, 1972; Mayer, 1989; Torrance & Goff, 1989 Ford & Harris, 1992; Slabbert, 1994).

For example, a person who flicks on a light switch upon entering a dark room and finds that the light will not come on has perceived a problem as a result of experiencing reality, but virtually no one would suggest that there is anything creative about producing or generating a solution to this problem by replacing a burnt out light bulb.

In addition, attempts to determine, through application of Smith's and Carlsson's (1990) definition, the creativeness of a product or whether or not a person has demonstrated creativity are bound to raise metaphysical and ontological issues about the nature of reality which will likely preclude ever coming to any general agreement. Certainly, Jack London reflected his perceptions of the reality of life in the Far North in *The Call of the Wild*, as did Sinclair Lewis of small town life in the United States in *Main Street*. Most would agree that Picasso used his idiosyncratic perceptions of reality when producing *The Old Guitarist*, as did Munch in *The Scream*, but what about Piet Mondrian or Jackson Pollack? In what way are their works a response to a generative or productive way of perceiving reality? In what sense? Or do their works fall under "a generative or productive way of experiencing . . . the perceiver's own self?" In what way would their works be products of the artists' perceptions of themselves? How can anyone know? How does a Mozart symphony or other musical composition fit the terms of this definition?

If a product were a response to *unreality*, resulting, say, from the delusions or hallucinations of someone insane or on drugs, would that make it any less creative? If so, then Samuel Taylor Coleridge's "Kubla Khan" would not represent a creative work, because it was supposed to be the result of an opium dream.

Although Smith and Carlsson (1990) almost surely did not intend for such questions to result from their definition, they nonetheless almost surely would if people started using it to determine or assess creative ability, thus contributing to the confusion surrounding the construct's definition, rather than helping to resolve it.

MOSTLY MORE
OF THE SAME

Attempts to include the issues of leadership and ways of perceiving reality in the definition notwithstanding, most who have written on the topic in recent years have tended to use either

definitions formulated by earlier writers and researchers, or modifications of those definitions. Mayer's 1989 definition, for example, the "ability to solve problems that one has not previously learned to solve" (p. 205) has the same problem-solving focus as Torrance's 1965 definition, along with the same deficiency — that creative acts need not be responses to problem-solving situations. Ford and Harris's (1992) definition states that creativity is a "modifiable, deliberate process that exists to some degree in each of us. It proceeds through an identifiable process and is verified through the uniqueness and utility of the product created" (p. 187), with *uniqueness* and *utility* largely the same criteria as Mednick and Mednick's *originality* and *usefulness* (1965), and with the same deficiency, that a creative work of art may have no particular "use," *per se*, and that any number of inventions and scientific discoveries have had no particular application when first developed. And Milgram and Hong (1993) include the notions of unusualness, solutions to problems, and divergent thinking in their definition, all of which have been included in earlier definitions of creativity, with the same flaws associated with problem-solving and divergent thinking that were true in previous definitions.

THE NEED FOR A BROAD, GENERAL DEFINITION

It probably would be inappropriate to point out reasons why consensus has not been reached on the appropriateness of definitions previously offered without offering an alternative.

What is needed seems not to be so much the identification of previously unidentified characteristics associated with creativity and their subsequent formulation into a new definition, as is the development of a definition precise enough to indicate what is meant professionally by the term *creativity* yet broad enough to achieve some degree of consensus. Such a definition would probably best be composed of components about which a wide degree of agreement has existed in the past.

One of these would be the notion of novelty, originality, or uniqueness — which, as shown earlier, has traditionally been considered an indication of the demonstration of creativity. Another component about which a wide degree of agreement has existed is some sort of product or action, whether it be a solution to a problem; a completed, communicable idea; or something tangible like an invention or work of art (Guilford, 1950; Thurstone, 1952; Stein, 1953; Maltzman, 1960; Rhodes, 1961; Mednick & Mednick, 1965; Torrance, 1965; Nicholls,

1972; Mayer, 1989; Ford & Harris, 1992; Milgram & Hong, 1993; Everett & Lippert, 1994). It is difficult to see how someone could be considered creative without having created *something*, and if the something is not new (at least to the creator), then it has not truly been created, since it has been in existence before. These two components, about which a wide degree of consensus does seem to exist, would seem, then, to be the most essential for construction of a definition. The importance of other characteristics, like leadership and perception, of creativity or the creative person can then be debated separately.

Thus, the definition of creativity proposed here is, "The ability or quality displayed when solving hitherto unsolved problems, when developing novel solutions to problems others have solved differently, or when developing original and novel (at least to the originator) products." This should be broad enough to cover differing views about what constitutes creativity, yet specific enough to identify clearly the quality intended. It should thus also be specific enough to give educators some degree of concept in common of what they are being asked to teach when they are exhorted to provide "direct instruction aimed at increasing creative thinking abilities" with the purpose of the "nurturing of creativity in schools" (Barron, 1988, p. 96). It should also assist them in discerning "what is creative and what is not" (Welsch, 1981, p. 2).

Even this general definition makes clear that more than an algorithmic response to problem-solving is intended and that novel approaches and solutions are to be encouraged. Too, it makes clear that problem-solving is not the only type of creativity, since it also refers to the development of original and novel products, which can include art work and musical compositions. Furthermore, it shows that the development by themselves of divergent thinking and transformation abilities, while important, is not enough, but that some sort of resultant product or solution is essential.

Whether those writing and researching on the topic come to accept this or some other definition similar in nature, the need for a common referent is clearly there. "Increased ability to deal with complex problems that have no ready solution is more important . . . than ever before. Within a society that suffers a greater anxiety from more nebulous causes than perhaps ever before, there is a need for creative ways to see things differently and express them differently" (Welsch, 1981, pp. 194-195). "To be able to survive in our rapidly changing world,

the attainment of creativity as a competency is at least meritable, if not inevitable. We do not know what the future holds and therefore . . . creativity should be the educationalist's primary concern" (Slabbert, 1994, pp. 63-64). To translate this concern into forms and actions that will meet the needs of children and society's expectations will require "direct instruction aimed at increasing creative thinking abilities: new curricula, new incentives, new teacher training" (Barron, 1988, p. 96). Those who are to receive this training and apply these new curricula and incentives will be difficult to convince of their importance, efficacy, and utility if those constructing them as a result of their study and research cannot come to some form of basic agreement about just what quality they are attempting to develop.

It has been true, as Sternberg (1988) said, that "Few psychological constructs have proved more elusive to define" than creativity has (p. 126). Yet it is also clear that preparing this nation's young people to cope with the rapid rate of change in this society necessitates developing their creativity. "The challenge before educators, psychologists, and others who work with creativity . . . is to generate a universally (and culturally) accepted definition of creativity" (Ford & Harris, 1992, p. 196). A suggestion has been made here for such a definition.

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