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10 Emotional Creativity

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The juxtaposition of the terms "emotional" and "creativity" in the title of this chapter might seem incongruous, even self-contradictory. According to popular stereotypes and some scientific theories, emotions are biologically primitive and relatively fixed responses over which we have little control; creativity, by contrast, calls for flexibility, openness, and deliberation. In a similar vein, emotions are typically viewed as non-cognitive and divorced from higher thought processes; creativity, on the other hand, is highly prized as the epitome of intellectual accomplishment.

In fact, however, emotional creativity is ubiquitous. Its prevalence, however, is masked by stereotypes such as those noted above. For example, cross-cultural variations in emotions are well documented (Heelas, 1986; Levy, 1984; Lutz, 1988; Needham, 1981; Rosaldo, 1980). Such variations could not occur if emotions were as immutable as is often presumed. Emotional innovation and change are also common within cultures. The history of romantic love offers a good example (Averill, 1985; Beigel, 1951; deRougemont, 1949); so, too, does accidia, a kind of religious sloth that flourished during the Middle Ages but that now is a prime candidate for the "endangered emotions list" (Harré & Finlay-Jones, 1986).

Individual emotional development also involves innovation and change. Thus, falling romantically in love for the first time can be a creative experience. More seasoned observers may view the episode as commonplace, even clumsy, but for the person involved it is a unique and wondrous affair.

The typical reply to examples such as the above is that they simply represent variations on a small number of underlying themes. The *real* ("basic", "fundamental") emotions are there all along, unchanging and immutable—across cultures, across historical epochs, and across the individual lifespan.

If this reply were valid, the possibilities for emotional creativity would be severely limited. To borrow an analogy from Plutchik (1980), emotional creativity would be like mixing primary colors to obtain the various hues of the spectrum. We prefer a different analogy. Emotions are more like paintings than color mixtures. Paintings have form as well as substance. They are a product of the artist's inner vision, a meaning imposed on the world, and they admit

of endless possibilities. Needless to say, not all paintings are original or creative. Conformity to established standards is as common in art as in any other field. But although most paintings may be grouped into genres or categories based on commonalities in origin and style (eg cubism, expressionism, surrealism), no category is more basic or fundamental than another.

To conclude this brief introduction, we define emotional creativity as follows:

Emotional creativity is the development of emotional syndromes that are novel, effective, and authentic.

The key concepts in this definition (emotional syndrome, novelty, effectiveness, and authenticity) are discussed in the next two sections: in the first, we propose a general framework for the analysis of emotional syndromes, one that illustrates not only the possibility of emotional creativity, but its near inevitability; and in the second, we examine the criteria for evaluating a response as creative (novelty, effectiveness, and authenticity). In subsequent sections, we present

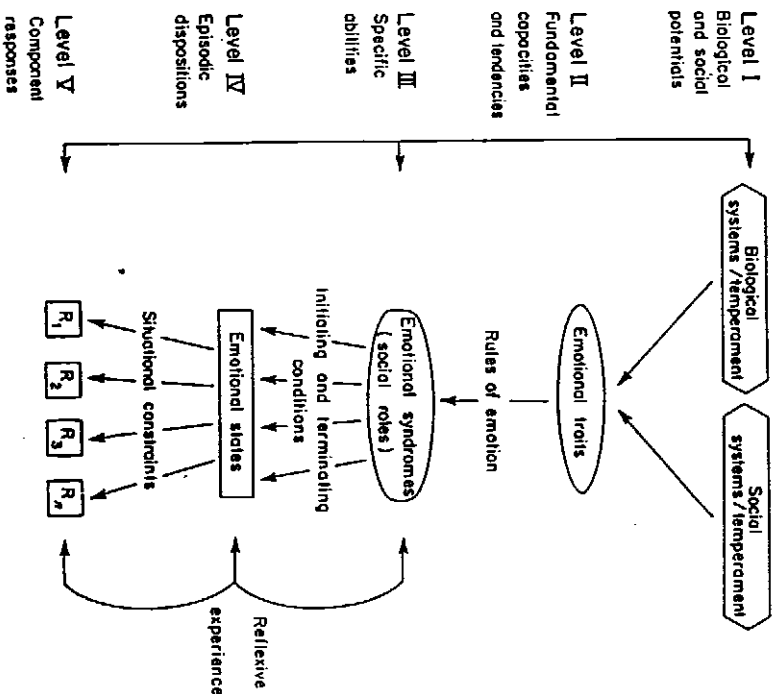


Figure 10.1. A framework for the interpretation of emotional behavior. (Reproduced by permission from Averill, 1988)

the results of an exploratory study designed to validate the construct of emotional creativity in conventional psychometric terms; and, based on the results of that study, we offer a sketch of the emotionally creative person.

HOW IS EMOTIONAL CREATIVITY POSSIBLE?

When we speak in the abstract of anger, love, fear, grief, etc, we are referring to emotional syndromes. As an abstraction, an emotional syndrome is a theoretical entity. It is like a concise conceptual map of the responses that tend to occur when a person is in an emotional state. A syndrome, however, is not like an ordinary map, that is, one which describes but does not alter the terrain it represents. A syndrome is more like an architect's blueprint—it is a "prescriptive description". The syndrome of anger, for example, not only describes but also helps determine the behavior of a person in an angry state.

Emotional creativity, as our definition indicates, involves the development of new and different emotional syndromes. Therefore, to understand how emotional creativity is possible, we must have a framework for understanding the origins and consequences of emotional syndromes. Such a framework is presented in Figure 10.1. Five levels of organization are depicted in the figure; the emotional syndromes are at the midpoint (level III). The levels above the midpoint (I and II) concern the biological, social, and psychological origins of the emotional syndromes; the levels below the midpoint (IV and V) concern the ways emotional syndromes become manifested in behavior. The interconnected arrows at the left of Figure 10.1 indicate that intermediate levels of organization can sometimes be bypassed or short-circuited. The looped arrows on the right of the figure relate to the subjective experience of emotion (feelings), about which we will have more to say shortly.

Level I

An individual's biological and social potentials represent the origins of behavior at the most general or abstract level of organization. Biological potentials are the genotype, ie the genetic endowment drawn from the gene pool of the species. Social potentials may be defined analogously. During socialization, the individual is endowed with the potential for certain behaviors, drawn from the total repertoire of behaviors available to members of the society. No two persons have exactly the same biological or social potentials. This fact helps account for some of the individual differences in emotional behavior, but it is only a beginning.

Level II

Biological and social potentials interact to form, at the next lower level of organization, a person's fundamental capacities and tendencies. This is the first

level of organization that can be measured directly. It represents the "source traits" of personality theory. Intelligence, as measured by IQ tests, is a good example. Creativity as a personality trait would also be defined at this level, as would the capacity to react in an emotional fashion (temperamental traits).

Level III

A distinction can be drawn between the capacity to respond (level II), discussed above, and the ability to respond (level III). Consider, for example, a person who has the genetic endowment for intellectual achievement, and who has been raised in a social environment that encourages intellectual activity; such a person might have the capacity to be a good mathematician. However, before the person would have the ability to solve calculus problems, say, he or she would have to acquire the rules and skills relevant to calculus. That is to say, abilities are rule-constituted, capacities are not, or at least not to the same degree.

Emotional syndromes can best be conceptualized at the level of specific abilities (Averill, 1988, 1991). Before people are able to become angry, hopeful, or whatever, they must acquire the rules relevant to the particular emotion. To return to an analogy used earlier, rules of emotion form the blueprints according to which emotional syndromes are constructed; when internalized, the rules help to constitute the cognitive schemas without which there would be no ability to respond. The fact that emotional syndromes are rule-constituted is what makes emotional creativity possible. Change the rules and you change the emotion.

Level IV

Given the ability to engage in a particular emotional syndrome, such as anger, appropriate initiating conditions may result in the activation of an emotional state. An emotional state is not an occurrent or ongoing reaction. Rather, it is a relatively short-term, reversible disposition to respond in a manner consistent with the emotional syndrome (Averill, 1991).

Level V

The most concrete or specific level of organization comprises the component responses that a person might (or might not) exhibit during an emotional state, depending upon constraints imposed by the situation. These component responses normally include cognitive appraisals, physiological changes, expressive reactions, instrumental acts (including verbal behavior), and subjective experiences.

In pursuit of the tangible, theorists have tended to identify emotional syndromes closely with component responses, such as autonomic reactions and facial expressions. That, we believe, is a category mistake (Ryle, 1949); it treats variables belonging to one logical category (level V, Figure 10.1) as though they

belonged to another (level III). We emphasize this point because it has particular implications for emotional creativity. Too close an identification of emotional syndromes with response variables can easily mislead. For example, the fact that certain facial expressions are universal (Ekman, 1984; Izard, 1977) is not, by itself, evidence for a corresponding set of universal ("basic", "fundamental") emotional syndromes. To make the example more specific, the fact that some facial displays are universally recognized as aggressive does not mean that anger is universal—unless anger as an emotional syndrome is inappropriately identified with aggressive behavior (Averill, 1982).

The subjective experience of emotion

Of all the types of component responses, none has been more consistently identified with emotional syndromes than subjective experience. Emotions are sometimes equated with "raw feelings", perhaps reflecting proprioceptive feedback from peripheral responses (eg the James-Lange theory and its various offshoots) or changes in the state of central neural mechanism (Oatley & Johnson-Laird, 1987). Such a view, if correct, would place severe limitations on emotional creativity. There are only so many ways that a person can "see red"; if emotional feelings were analogous, there would be only a few ways a person could feel angry or joyful or whatever.

In Figure 10.1, emotional feelings are depicted as involving a feedback loop connecting component responses (level V) to emotional states (level IV) and emotional syndromes (level III). That is, cues from bodily responses (including central neural states) are combined with information from the environment to further guide behavior, in accordance with the rules that help constitute emotional syndromes. Stated differently, emotional feelings are not simple experiences *sui generis*; rather, they are determined by the same rules that help constitute emotional syndromes.

Rules of emotion

Social rules or norms occupy a central place in the above analysis and hence deserve brief elaboration. Three types of rules can be distinguished: constitutive, regulative, and procedural (Averill, 1984, 1991). Strictly speaking, the distinction between these three types of rules does not represent a true trichotomy. Any given rule may have constitutive, regulative, and procedural aspects, albeit to varying degrees. For expository purposes, however, it is convenient to treat these three aspects as though they were separate classes of rules.

Consider a game such as chess. Some rules (eg with regard to the way the various pieces may be moved) help *constitute* the game as a game of chess, as opposed, say, to a game of checkers. Other rules (eg stipulating the time between moves) help *regulate* how the game is played on any given occasion. The third

class of rules—*procedural rules*—help determine the quality of play. A chess-playing computer program, for example, consists primarily of procedural rules (heuristic algorithms).

Emotional syndromes are both constituted and regulated by rules, and they require appropriate heuristics for skilled enactment. Take the case of anger (Averill, 1982). If a constitutive rule is broken, the response will not be considered *real* anger but perhaps some other kind of emotion—envy, for example, or, if the violation is sufficiently extreme, a neurotic syndrome. By contrast, if a regulative rule is violated, the response may be recognized as anger but it will be considered inappropriate or illegitimate. Finally, if a procedural rule is broken, the response may be accepted as appropriate anger but its expression deemed clumsy or inept.

Constitutive rules are the most relevant to emotional creativity. All theorists recognize that emotions are regulated by rules, and that emotions can be enacted skillfully or clumsily. The idea that emotions are also constituted by rules is not so widely accepted. The more common view is that emotions are rather direct reflections of biological potentials—regulated but not constituted by social rules.

Even Hochschild (1983), who has done much to underscore the importance of emotion rules, implies that behind the institutionally enforced cheerfulness of an airline stewardess, or the anger of a bill collector, there exist feelings that are more authentic or "true" than others, and from which we may become "estranged". What is the origin of these "true feelings"? That is a question addressed by Morgan and Averill (in press). One possibility is that true feelings represented what we are as a biological organism. Hochschild (1983) rejects such an organismic view as "limited" (p. 28). Another possibility is that "true feelings" originate in social institutions but at an earlier point in time (childhood, perhaps). But that possibility would not confer on them the kind of authenticity Hochschild seeks. She therefore equivocates, but ultimately comes down on the side of biology:

Emotion . . . is a biologically given sense, and our most important one. Like other senses—hearing, touch, and smell—it is a means by which we know about our relation to the world, and it is therefore crucial for the survival of human beings in group life. (p. 219)

We come down on the side of society. People consider true those feelings that are congruent with their fundamental values, and values are primarily a reflection of our social and not our biological heritage (Morgan & Averill, in press).

This is not the place to debate the relative importance of nature versus nurture in the determination of emotional syndromes and associated feelings. However, two further points deserve brief mention.

First, most of the evidence cited in favor of the innateness of basic emotions actually deals with biological potentials (eg towards aggression, attachment,

avoidance, and the like—level I, Figure 10.1). Our concern is with specific emotional syndromes, such as anger, fear, and love (level III, Figure 10.1).

Secondly, as Figure 10.1 also indicates, there is no contradiction in saying that emotions are determined in part by biological potentials and that they are also constituted by rules. To further emphasize this point, an analogy may be made with language. Human beings as a species have a strong biological potential for language. However, any specific language (English, say, or Chinese) is constituted by social rules—the grammar of the language. Similarly, human beings may have a biological potential for aggression, but whether that potential becomes actualized in anger or in some other syndrome, or whether it becomes actualized at all, is a matter of social norms and rules.

We emphasize these points because, to the extent that emotional syndromes are constituted by rules, they are subject to innovation and change—not just superficially, but fundamentally. However, not every change deserves to be called "creative".

CREATIVITY

After a period of relative neglect, creativity is once again becoming a topic of considerable research and speculation (Amabile, 1983; Glover, Ronning & Reynolds, 1989; Richards *et al.*, 1988; Sternberg, 1988; Wallace & Gruber, 1989). Two topics are of particular relevance to emotional creativity: first, the criteria for evaluating a response as creative; and, secondly, the stages in the creative process.

Criteria for evaluating a response as creative

To a certain extent, creativity is domain specific. For example, with few exceptions (eg Leonardo da Vinci), great scientists are not great artists, and vice versa. This specificity reflects, in part, the time and energy required to become proficient in a given field; and, in part, it reflects lower-order skills unique to a field (eg a musician requires motor coordination that a mathematician does not). But in addition to such specificities, there also are commonalities that cut across different domains of creative activity. These commonalities are reflected in three main criteria for evaluating a response as creative: novelty, effectiveness, and authenticity.

Novelty

The most frequently cited criterion for a creative response is that it should be, to some extent, new, different, or unusual. This criterion is so often taken for granted that relevant qualifications are sometimes overlooked. For one thing, not every novel response is creative. We must distinguish the creative from the bizarre, the merely eccentric, the random. For another thing, not every creative

response is novel. As will be discussed shortly, authenticity can sometimes displace novelty as the hallmark of creativity.

Effectiveness

To be considered creative, a response must be of some potential benefit or value to the individual or society. This is what we mean by "effectiveness". In most instances, the evaluation of effectiveness is relatively straightforward, but that is not always the case. "Effectiveness" is a relative concept. What is effective in one context may be ineffective in another and what is effective in the short run may be detrimental in the long run, and *vice versa*. Even extraordinary scientific achievements and major works of art are sometimes recognized only after a change in circumstance or with the wisdom of hindsight. Galileo was arrested for his discoveries; van Gogh died a pauper; and Stravinsky was jeered at the *première* of *Le Sacre du Printemps*. Emotional innovation is especially likely to be disturbing to the individual and/or disruptive to society, at least in the short run. Thus, the effectiveness of an emotionally creative response must take into account more than the joys and sorrows of the moment; it must also consider the potential long-term benefit or harm to the individual and the group.

Authenticity

This third criterion might also be labeled "originality", except that the latter term is often confused with novelty. The difference between authenticity (originality) and novelty is well expressed by Arnheim (1966):

The creative individual has no desire to get away from what is normal and ordinary for the purpose of being different. He is not striving to relinquish the object but to penetrate it according to his own criterion of what looks true. . . . The desire to be different for the sake of difference is harmful, and the urge to evade the given condition derives from a pathological state of affairs inherent either in the situation . . . or in the person, as in the "escape mechanism" of neurotics, attributed to artists by the Freudians. Faced with the pregnant sight of reality, the truly creative person does not move away from it but toward and into it. (p. 299)

A creative response should reflect in some fashion the individual's own values and beliefs about the world. Authenticity sometimes requires that a person stand alone, against social custom and the expectation of friends and family. But not always. People are sometimes more authentic – and in this respect, more creative – when they conform than when they diverge from social expectations, provided they have adopted those expectations as their own. Too often, authenticity is sacrificed in a vain and superficial attempt to be different.

Stages in the creative process

Creativity does not occur suddenly, without prior preparation. The creative response typically unfolds in stages, often over an extended period of time. Wallas (1926) has broken the entire sequence into four stages: preparation, incubation, illumination, and verification. Preparation is, for the most part, a deliberate process in which a solution (eg to a mathematical problem, or a musical score) is sought. If a solution occurs, the remaining stages may be short-circuited. More commonly, the initial efforts end in frustration, and the problem is put aside for a time (from a few minutes to years). This is the stage of incubation. Eventually, perhaps under the influence of some environmental stimulus, a solution suddenly appears in a "flash of insight". The validity or appropriateness of the insight must then be verified. The following account by the French mathematician Poincaré (1908/1952) dramatically illustrates these stages in the creative process:

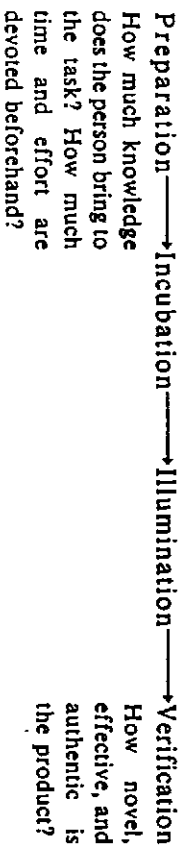
For fifteen days I strove to prove that there could not be any functions like those I have since called Fuchsian functions. I was then very ignorant; every day I seated myself at my work table, stayed an hour or two, tried a great number of combinations and reached no results. One evening, contrary to my custom, I drank black coffee and could not sleep. Ideas rose in crowds; I felt them collide until pairs interlocked, so to speak, making a stable combination. By the next morning I had established the existence of a class of Fuchsian functions, those which come from the hypergeometric series; I had only to write out the results, which took but a few hours. (p. 36)

Of the four stages of the creative process outlined by Wallas, the first (preparation) and the last (verification) are the most amenable to observation and assessment. The second stage (incubation) occurs largely outside of awareness, and the third stage (illumination) is often momentary.

We have already discussed the criteria by which a creative response may be verified, namely, novelty, effectiveness, and authenticity. The following remarks, therefore, concern the first or preparatory stage.

For any given task, preparation may be brief. For example, Coleridge (1816/1952) reported that he wrote the poem *Kubla Khan* upon waking from a dream. However, as Weisberg (1986) has documented, this and other famous examples of sudden inspiration without preparation involve more myth than fact. Evidence suggests that Coleridge had previously written a poem on the same theme, and that he might even have fabricated the story of *Kubla Khan's* composition for personal aggrandizement. But be that as it may, Coleridge was not an accomplished poet who had spent many years in preparation, perhaps not to write this particular poem but to write poetry in general. It has been estimated that roughly 10 years of concentrated effort are required before an individual is capable of truly creative accomplishments within a given field (Hayes, 1981). It follows that one way to assess the creative potential of an individual is to assess the time and effort that have been devoted to preparation.

The following diagram provides a brief summary of the creative process and the criteria relevant to its evaluation:



Thus far, our discussion has been largely theoretical. In the next section, we present the results of an exploratory study (Thomas, 1989) designed to assess individual differences in emotional creativity and to examine the similarities and differences between emotional and cognitive creativity.

EMOTIONAL CREATIVITY: A PSYCHOMETRIC STUDY

The primary purpose of this study was to establish emotional creativity as a valid domain of psychological inquiry. To this end, three tests of emotional creativity were developed. Relations between these tests and corresponding measures of cognitive creativity were examined. Some similarities were expected between emotional and cognitive creativity, but also some differences. Specifically, it was predicted that emotional creativity would be differentially related to the capacity to respond in an emotionally adaptive manner, and that cognitive creativity would be differentially related to intellectual achievement.

Subjects

Subjects were 100 undergraduate students (48 male, 52 female) at the University of Massachusetts, Amherst. They ranged in age from 18 to 56 (mean age = 20.0). Subjects were recruited from a variety of psychology courses. For participating they were paid a small remuneration and/or received credit towards their course requirements. Four categories of behavior were assessed: emotional creativity, cognitive creativity, emotional capacity, and cognitive capacity.

Emotional creativity

The three measures of emotional creativity developed specifically for this study were the Emotional Creativity Inventory, the Emotional Triads Test, and the Emotional Consequences Test. It should perhaps be emphasized at the outset that these tests were not developed for applied use, but only to help validate a construct—emotional creativity.

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Emotional Creativity Inventory

This test was designed to provide a self-report estimate of emotional creativity in everyday settings. Items focused on the first (preparation) and last (verification) stages of the creative process. More specifically, the preparatory items assessed the tendency of subjects to think about and devote attention to their emotional lives, and the verification items assessed the novelty, effectiveness, and authenticity of the emotions. The following examples illustrate each type of item:

- I. *Preparation stage*
I think about past emotional experiences to help me cope with a current emotional problem.
- II. *Verification stage*
Novelty. I like art, music, dance, and paintings that arouse new and unusual emotional reactions.

Effectiveness. I can vary my emotions effectively to fit the situation.

Authenticity. My emotional reactions do not reflect who I really am.
(Reversed)

Each of the 32 items was rated on a nine-point scale from 0 to 8; the total score could thus range from 0 to 256. The actual range was 75–242, with a mean of 165.52. Coefficient alpha for the 32-item scale was 0.89 for the total sample of 100 subjects. This indicates a high degree of reliability, at least over the short term. (Coefficient alpha represents an estimate of the correlation of a test with a hypothetical alternate form having the same number of items—see Cronbach, 1951.)

Emotional Triads Test

This test required subjects to write stories that integrated incongruent emotions into single, unified experiences. Four sets of emotional triads were selected: serene/bewildered/impulsive; affectionate/disgusted/hopeful; lonely/angry/joyful; and embarrassed/jealous/amused. The terms in each triad are located approximately 120 degrees apart on Plutchik's (1980, p. 170) emotion circle, indicating a high degree of incongruence.

Research by Harrington (1975) and Amabile (1983) suggests that creativity is enhanced by explicit instructions to be "creative". Subjects in the present study were therefore told to be as creative as possible in writing their stories and not to worry about spelling, grammar, or style. It was also emphasized that the three emotions should be integrated into a unitary experience and not described as separate (eg sequential) events.

The four stories were scored on a scale from 1 to 5 for novelty, effectiveness (adaptiveness), authenticity, integration, and creativity. The nature of the first three ratings (novelty, effectiveness, and authenticity) has already been described. "Integration" refers to the extent that the three emotions were combined to form a unitary experience. The "creativity" rating represents an overall assessment of the story, taking into account the other four dimensions as well as any other factors that might seem relevant to the judges.

To illustrate, the following story involving the triad "serene, bewildered, and impulsive" was given a high rating for creativity:

The clouds are few, the sky is clear. I'm at the top of the cliff. It's real peaceful up here. Suddenly, I want to jump, I don't know why, I just want to. Calmly, I look down at what would be my unquestioned doom. It looks so peaceful; warm and friendly. But why, why do I want to dive into the hands of the grim reaper? What does this mean? I hesitate, then motion to jump, something strange pulls me back. It is the peacefulness of the cliff. I can't destroy that peacefulness. The wind feels like velvet against my skin as I slowly walk away and shake my head. Why?

By contrast, the following story was rated low in creativity:

I am sitting in a field with high grass, alone with no one visible for as far as the eye can see. I am serene. But I am also bewildered when I discover I do not know where I am nor how I got there. I impulsively and frantically run in every direction looking for any sign of human life. After running for about five minutes, and after working up a great sweat, I come across a Coke machine. I buy myself a Coke and subsequently drink it while contemplating my insane-like actions.

The two authors served as judges. Analyses were conducted using the mean of the judges' ratings on each dimension. Because the creativity rating was highly correlated with a combined score consisting of the first four dimensions ($r = 0.93$), the creativity score alone was used to represent emotional creativity as measured by the Emotional Triads Test. The interjudge reliability for this score was 0.71. The total score summed over the four items (triads) could range from 4 to 20. The actual range was 4 to 16, with a mean of 9.95. Coefficient alpha for the four-item test was 0.66.

Emotional Consequences Test

This test was modified from one of the Torrance (1962) Tests of Creative Thinking. Subjects were asked to list as many consequences as possible for each of four impossible situations. The test differed from the original Torrance version in that each item described a situation of an emotional nature. The four items were: what would be the consequences (a) if people fell in love with a different person every other day? (b) if people could detect every emotion that others were feeling? (c) if people could only experience positive emotions in

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the morning and negative emotions in the afternoon? and (d) if whenever people fell in love, they developed a terrible odor that became worse as their love got stronger?

The scoring technique developed by Torrance (1974) was modified for evaluating the responses. Each item was given a flexibility score, indicating the number of different categories used, and a fluency score, indicating the number of relevant, non-repeated ideas expressed within categories. A high flexibility score thus reflects the ability to shift from one category of thought to another. A high fluency score, by contrast, reflects the ability to elaborate on, or give numerous examples of, ideas within categories. All the responses to an item also were rated as a unit on a five-point scale for creativity. This rating reflects primarily the overall novelty and perspicacity of the ideas presented.

The following are examples of responses to the item: what would be the consequences if people could only experience positive emotions in the morning and negative emotions in the afternoon?

Good: The sign on the door of the local mental health clinic would say:

Office hours: Morning—Mania

Afternoon—Depression

Bipolar patients may visit twice daily

Poor: There would be fights in the afternoon

A typical subject provided from three to 10 responses (some good, some poor) to each of the four items (impossible situations).

A number of suggestions have been made for obtaining a single, derived score for the consequences test (Torrance, 1974). Based on preliminary analyses of the present data, a derived score was obtained by multiplying the flexibility score by the creativity rating for each item (situation) and then summing over the four items. (The flexibility score, it will be recalled, is the number of distinct categories into which responses fell [mean = 4.72 categories per item]; the creativity rating is a summary judgment of the uniqueness and insightfulness of the responses taken as a whole.) The derived score for the four-item test ranged from 13 to 124, with a mean of 57.70. Coefficient alpha was 0.71.

Emotional creativity composite score

The Emotional Triads Test and the Emotional Consequences Test are both "performance" measures and hence methodologically distinct from the Emotional Creativity Inventory, a self-report measure. The correlation between the two performance tests was 0.31 ($p < 0.01$, one-tailed test). In order to obtain a broader measure of performance, these two tests were combined (following conversion to z-scores). Coefficient alpha for the eight-item composite score was 0.68 for the entire sample.

Cognitive creativity

Cognitive creativity was measured in two ways: a Cognitive Creativity Inventory and a Cognitive Consequences Test.

Cognitive Creativity Inventory

This test was based on research by Sternberg (1985). He reported lists of items that represent people's implicit theories or conceptions of creativity, intelligence, and wisdom. Starting with Sternberg's creativity descriptors, but eliminating any with an explicitly emotional content, we constructed a 30-item self-report inventory of cognitive creativity to parallel the Emotional Creativity Inventory. The total score on this test could range from 0 to 240. The actual range was 78 to 162, with a mean of 114.73. Coefficient alpha for the inventory was 0.81.

Cognitive Consequences Test

This test consisted of four items taken directly from the Torrance (1962) Tests of Creative Thinking: what would be the consequences (a) if human beings could become invisible at will? (b) if a hole could be bored through the earth? (c) if the language of birds and animals could be understood by human beings? and (d) if human beings could live forever on earth? Responses were evaluated in the same manner as the Emotional Consequences Test described above, and a derived score (the product of the flexibility and creativity measures) was calculated. The derived score for the four-item test ranged from 10 to 136, with a mean of 61.35. Coefficient alpha was 0.69.

Measures of emotional capacity

It was hypothesized that emotionally creative people would experience more intense or vivid emotions than their less creative counterparts, and that they would be better able to communicate their emotions to others. To test these hypotheses, two measures of emotional capacity were obtained: the Affect Intensity Measure (AIM) and the Affective Communication Test (ACT).

Affect Intensity Measure (AIM)

This self-report inventory assesses the emotional intensity with which people react to typical life events, both positive and negative (Larsen, 1983; Larsen & Diener, 1987). The scale consists of 40 items, each rated on a six-point scale (0-5).

Although it was predicted that emotionally creative people would experience emotions more intensely than others, that prediction must be tempered by the fact that emotional creativity is not simply emotional reactivity. The emotionally creative response should be novel, effective, and authentic, not simply intense

or frequent. A number of items on the Affect Intensity Measure address a kind of dysfunctional affect which clearly would not be related to emotional creativity as here defined (eg. "When I get nervous, I get shaky all over"). The two authors therefore sorted the items on the Affect Intensity Measure into categories, depending on how indicative the items were of functional or dysfunctional affect. Items on which the judges reached agreement were used to construct functional (13 items) and dysfunctional (12 items) subscales of the AIM. Total scores could range from 0 to 65 for the functional subscale and from 0 to 60 for the dysfunctional subscale. Actual scores ranged from 25 to 65 (mean = 47.38) and from 16 to 55 (mean = 37.28) for the functional and dysfunctional subscales, respectively. Coefficient alpha for each subscale was 0.76.

Affective Communication Test (ACT)

This 13-item test assesses the capacity to communicate one's emotional state to others (Friedman *et al.*, 1980). Each item was rated on a nine-point scale (0-8); the total score could thus range from 0 to 104. Actual scores ranged from 29 to 91, with a mean of 57.90.

Measures of cognitive capacities

Cognitive capacities and achievements were measured by scores on the verbal and mathematics sections of the Scholastic Aptitude Test (SAT), and by the student's grade point average (GPA).

Scholastic Aptitude Test

The SAT is a standardized test of intellectual capacity, similar to an IQ test. It is required of all students entering the University. Separate scores are available for mathematical (quantitative) and verbal reasoning. Scores on each section can range from 200 to 800. For the math section, actual scores ranged from 220 to 770, with a mean of 558.64; and for the verbal section, from 240 to 740, with a mean of 527.47.

Grade point average

The GPA is the mean of the grades of all courses a student takes at the University. An A or excellent grade receives four points, an F or failing grade receives no points. A GPA of at least 2.0 (a C average) is required for graduation. All students who participated in the present study had completed at least one semester at the University. Their levels of academic achievement varied considerably, from failing to near perfect records. Specifically, GPAs ranged from 0.93 to 3.93, with a mean of 2.75.

Other measures

Social desirability

The Social Desirability Scale (Crown & Marlowe, 1964) was used to assess the tendency of people to make socially desirable responses. Consistent with previous research, social desirability was not found to be significantly related to any of the creativity measures. Hence, it is not discussed further.

Intelligence and Wisdom Inventories

It will be recalled that Sternberg (1985) assessed people's implicit theories of creativity, intelligence, and wisdom. His results were used to construct the Cognitive Creativity Inventory described above. Similar inventories were constructed for intelligence and wisdom. The results using these inventories add little to the findings presented below; hence, they too are not discussed further.

Procedure

Subjects were run in groups, ranging between three and 15 persons. All tests were administered in a single session.

The eight items of the Emotional and Cognitive Consequences Tests were administered first in counterbalanced order (a Greco-Latin square design) with the restriction that no two cognitive or two emotional items could be adjacent. Five minutes were allotted for each item.

A booklet containing the Social Desirability Scale, the Affective Communication Test, and the Affect Intensity Measure was then distributed. Subjects could complete these questionnaires at their own pace. When the last subject finished, the testing session was interrupted for a 10-minute break.

Following the break, the Emotional Triads Test was distributed. The four items of this test were counterbalanced in a Latin-square design. The last test booklet distributed contained the Emotional Creativity Inventory, the Cognitive Creativity Inventory, the Intelligence Inventory, and the Wisdom Inventory. The items from these four inventories were randomly interspersed. A demographic data questionnaire (including GPA and SAT scores) completed the last test booklet.

A session could last up to three hours, depending on how quickly subjects completed the inventories. Because of the varied nature of the tests and the break in the middle, subjects did not find the task onerous or boring, in spite of the length.

RESULTS AND DISCUSSION

In presenting the results of this study, we will focus on three main issues: (a) sex differences in emotional creativity; (b) relations between emotional and

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cognitive creativity; and (c) the differential predictive validity of the emotional and cognitive creativity tests.

Sex differences

On standardized tests of emotionality, women generally score higher than men. That was the case in the present study also. The relevant data are presented in Table 10.1. As can be seen, the women scored significantly higher on two of the three tests of emotional creativity (the Emotional Creativity Inventory and Emotional Consequences Test) and on all measures of emotional capacity (ie the functional and dysfunctional subscales of the AIM and the ACT).

In contrast to emotional creativity, there were no significant differences between the men and the women on the Cognitive Creativity Inventory or the Cognitive Consequences Test. With regard to cognitive capacity, the men scored significantly higher than the women on the mathematical reasoning portion of the SAT—also a common finding. There were no significant sex differences on the verbal SAT scores or on grade point averages.

The superiority of the women on the emotional but not on the cognitive creativity measures indicates that the tests of emotional creativity do not simply

Table 10.1. Means and standard deviations for females and males on tests of emotional creativity and capacity (reactivity) and cognitive creativity and capacity

| Test | Females | | Males | | t-value ^a | p |
|--|---------|-------|--------|--------|----------------------|-------|
| | Mean | SD | Mean | SD | | |
| <i>Emotional creativity</i> | | | | | | |
| Self-report inventory | 174.98 | 27.25 | 152.45 | 30.29 | 3.89 | 0.001 |
| Triads Test | 10.24 | 2.36 | 9.54 | 2.99 | 1.32 | NS |
| Consequences Test | 62.03 | 24.09 | 51.71 | 24.29 | 2.11 | 0.05 |
| <i>Emotional capacity</i> | | | | | | |
| AIM functional | 49.93 | 7.43 | 43.66 | 7.99 | 3.91 | 0.001 |
| AIM dysfunctional | 39.76 | 8.04 | 33.86 | 6.87 | 3.85 | 0.001 |
| Affective Communication Test (ACT) | 61.10 | 15.39 | 53.48 | 13.31 | 2.59 | 0.01 |
| <i>Cognitive creativity</i> | | | | | | |
| Self-report inventory | 115.47 | 16.72 | 113.71 | 16.67 | 0.52 | NS |
| Consequences Test | 64.24 | 29.96 | 57.36 | 26.60 | 1.19 | NS |
| <i>Cognitive capacity</i> | | | | | | |
| SAT math ^b | 524.15 | 82.96 | 580.50 | 104.54 | -2.90 | 0.005 |
| SAT verbal ^b | 530.85 | 74.03 | 523.00 | 95.04 | 0.45 | NS |
| Grade point average (GPA) ^c | 2.82 | 0.56 | 2.66 | 0.78 | 1.12 | NS |

^aDegrees of freedom = 98, except where otherwise noted.

^bFemales, $N=31$; males, $N=40$; $df=91$.

^cFemales, $N=37$; males, $N=41$; $df=68,44$. (The degrees of freedom for this comparison are those for Welch's test for groups with heterogeneous variance.)

Note: Females, $N=58$; males, $N=42$, except where otherwise noted.

reflect facility in the manipulation of emotional concepts. Indeed, the emotional creativity task that required the most verbal fluency (the Triads Test) also showed the smallest difference between the sexes. The results thus seem to reflect differences between the sexes in emotional capacities in general (creativity, reactivity, and communication). Unfortunately, the possible biological, social, and psychological bases for sex or gender differences in emotionality are poorly understood (Shields, 1987).

Relations between emotional and cognitive creativity

Human beings are the most emotional as well as the most intelligent species in the animal kingdom. This fact alone would suggest a close relation between emotional and cognitive creativity. But that is not all. Emotional appraisals often depend on the capacity to make fine discriminations in situations that are complex, ambiguous, and stressful. Moreover, a good deal of information processing goes on between the appraisal of situational cues and the manifestation of an emotional response (Mandler, 1984). Thus, no matter how they might differ, emotional and cognitive creativity represent overlapping domains.

This overlap is reflected in the correlations between the various tests of emotional and cognitive creativity used in the present study. For example, the correlation between the Emotional and Cognitive Creativity Inventories was 0.54 for the total sample ($p < 0.001$); the corresponding correlation between the Emotional and Cognitive Consequences Tests was 0.66 ($p < 0.001$).

These correlations are substantial, especially when the reliabilities of the tests are taken into account. They should not be taken to mean, however, that emotional creativity, as measured here, is "nothing but" cognitive creativity. The Emotional and Cognitive Creativity Inventories were similar in methodology, and hence the correlation between them (0.54) is inflated due to common method variance. The same is true of the correlation (0.66) between the Emotional and Cognitive Consequences Tests.

Table 10.2 presents the cross-correlations of the two creativity inventories with the two consequences tests, thus controlling for method variance. (Results for the Emotional Triads Test are not presented here as there was no corresponding test in the cognitive domain.) The data in Table 10.2 are presented separately for females and males; for simplicity, however, we discuss only the results for the total sample.

To the extent that emotional and cognitive creativity are overlapping but distinguishable domains, the two tests of emotional creativity should be more highly correlated with each other than with the corresponding tests of cognitive creativity, and *vice versa*. An inspection of the correlations in Table 10.2 indicates that such was the case. Reading across the rows of Table 10.2 (for the total sample), the Emotional Creativity Inventory was more highly correlated with the Emotional Consequences Test (0.35) than it was with the Cognitive

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Table 10.2. Correlations of the Emotional and Cognitive Consequences Tests with the Emotional and Cognitive Creativity Inventories

| Self-report inventory | Emotional Consequences Test | Cognitive Consequences Test | Significance of the difference ^a T_2 p |
|---------------------------------------|-----------------------------------|-----------------------------------|--|
| <i>Emotional Creativity Inventory</i> | | | |
| Females | 0.33** | 0.09 | 2.18 0.05 |
| Males | 0.27* | 0.22 | 0.43 NS |
| Total | 0.35*** | 0.17* | 2.31 0.05 |
| <i>Cognitive Creativity Inventory</i> | | | |
| Females | 0.24* | 0.28* | -0.36 NS |
| Males | 0.32* | 0.38** | -0.53 NS |
| Total | 0.28** | 0.33*** | -0.64 NS |

^aSignificance levels are based on Siegel's (1980) T_2 statistic for the difference between two dependent correlations, one-tailed test. (T_2 has a t distribution with $df = N - 3$.) Comparisons also were made between corresponding correlations within columns; the results are discussed in the text.

Note: Females, $N = 58$; males, $N = 42$.

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; one-tailed.

Consequences Test (0.17). The difference between these two correlations is statistically significant ($p < 0.05$). Similarly, the Cognitive Creativity Inventory was more highly correlated with the Cognitive Consequences Test (0.33) than with the Emotional Consequences Test (0.28). In this case, however, the difference is not statistically significant.

The same pattern of results is evident if one examines the columns of Table 10.2. Thus, the Emotional Consequences Test was more highly correlated with the Emotional Creativity Inventory (0.35, total sample) than with the Cognitive Creativity Inventory (0.28), and the Cognitive Consequences Test was more highly correlated with the Cognitive Creativity Inventory (0.33) than with the Emotional Creativity Inventory (0.17). In the latter case, the difference between the correlations is statistically significant ($T_2 = 1.97$, $df = 97$, $p < 0.05$, one-tailed). In summary, on the basis of the tests developed for this study, there appears to be considerable overlap between the domains of emotional and cognitive creativity. For reasons already discussed, such overlap is to be expected. But the two domains of creativity are also distinguishable, as evidenced by the fact that the within-domain correlations are generally larger than the between-domain correlations (and in several instances, significantly so).

Differential predictive validity

It was hypothesized that emotional creativity would be differentially related to effective (functional) emotional reactivity, and that cognitive creativity would be differentially related to intellectual capacities and academic achievement. Data relevant to the first part of this hypothesis are presented in Table 10.3.

Note first that both the Emotional and the Cognitive Creativity Inventories were more highly correlated with the functional than with the dysfunctional

Table 10.3. Correlations of the Emotional and Cognitive Creativity Inventories with emotional capacities

| Emotional capacities | Emotional Creativity Inventory | Cognitive Creativity Inventory | Significance of the difference ^a | T_2 | p |
|-------------------------------------|--------------------------------|--------------------------------|---|-------|-----|
| <i>Affect Intensity Measure</i> | | | | | |
| Functional subscale | | | | | |
| Females | 0.47*** | 0.13 | 2.75 | 0.01 | |
| Males | 0.58*** | 0.38* | 1.89 | 0.05 | |
| Total | 0.58*** | 0.24* | 4.24 | 0.001 | |
| Dysfunctional subscale | | | | | |
| Females | 0.20 | -0.15 | -2.65 | 0.01 | |
| Males | 0.23 | -0.06 | 2.42 | 0.05 | |
| Total | 0.32*** | -0.09 | 4.70 | 0.001 | |
| <i>Affective Communication Test</i> | | | | | |
| Females | 0.34** | 0.49*** | -1.23 | NS | |
| Males | 0.55*** | 0.32* | 2.15 | 0.05 | |
| Total | 0.47*** | 0.42*** | 0.59 | NS | |

^aSignificance levels are based on Steiger's (1980) T_2 statistic for the difference between two dependent correlations, one-tailed test. Comparisons also were made between corresponding correlations within columns; the results are discussed in the text.

Note: Females, $N=58$; males, $N=42$.

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$; two-tailed.

subscales of the AIM. Significance levels for these contrasts are not presented in Table 10.3, but all are significant at least at the 0.05 level of confidence. To illustrate, if one reads down the first column of Table 10.3 it can be seen that, for the total sample, the Emotional Creativity Inventory correlated 0.58 with the functional subscale of the AIM but only 0.32 with the dysfunctional subscale ($T_2=3.52$, $df=97$, $p<0.001$, one-tailed).

Reading across the rows of Table 10.3, it can be seen that, as predicted, the Emotional Creativity Inventory was more highly correlated with the AIM (both subscales) than was the Cognitive Creativity Inventory. The differences are all significant at least at the <0.05 level of confidence.

The data for the Affective Communication Test (ACT) are presented in the bottom portion of Table 10.3. In this case, the hypothesis was confirmed for the males but not for the females. That is, only the males showed a significantly higher correlation between the Emotional Creativity Inventory and the ACT than between the Cognitive Creativity Inventory and the ACT (0.55 vs 0.32, $p<0.05$).

Table 10.4 compares the correlations between the Emotional and Cognitive Creativity Inventories and the measures of scholastic aptitude (SAT scores) and academic achievement (grade point average). For the SAT mathematical section, the results are in the predicted direction, and all (females, males, and total sample) are statistically significant. For the SAT verbal scores, the results for the males reached statistical significance in the predicted direction, but not the results for the females or the entire sample.

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Table 10.4. Correlations of the Emotional and Cognitive Creativity Inventories with cognitive capacities and achievement

| Cognitive capacities | Emotional Creativity Inventory | | Cognitive Creativity Inventory | | Significance of the difference ^a | T_2 | p |
|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|---|-------|-----|
| | Emotional Creativity Inventory | Cognitive Creativity Inventory | Cognitive Creativity Inventory | Cognitive Creativity Inventory | | | |
| <i>SAT—mathematics section</i> | | | | | | | |
| Females ($N=53$) | -0.23 | 0.08 | -2.22 | 0.05 | | | |
| Males ($N=40$) | -0.02 | 0.26 | -2.30 | 0.05 | | | |
| Total ($N=93$) | -0.21* | 0.13 | -3.61 | 0.001 | | | |
| <i>SAT—verbal section</i> | | | | | | | |
| Females ($N=53$) | 0.01 | -0.03 | 0.28 | NS | | | |
| Males ($N=40$) | 0.03 | 0.36* | -2.83 | 0.01 | | | |
| Total ($N=93$) | 0.04 | 0.17 | -1.40 | NS | | | |
| <i>GPA</i> | | | | | | | |
| Females ($N=57$) | 0.06 | 0.02 | 0.28 | NS | | | |
| Males ($N=41$) | 0.40** | 0.41** | -0.09 | NS | | | |
| Total ($N=98$) | 0.26** | 0.21* | 0.52 | NS | | | |

^aSignificance levels are based on Steiger's (1980) T_2 statistic for the difference between two dependent correlations, one-tailed test.

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$; two-tailed.

Looking now at the bottom portion of Table 10.4, both emotional and cognitive creativity predicted academic achievement (GPA) about equally well. Although contrary to hypothesis, this result is not entirely unexpected. Success in coursework depends on motivational and temperamental factors as well as intellectual capacities.

Altogether, the results presented in Tables 10.3 and 10.4 provide satisfactory evidence that emotional and cognitive creativity, as measured by the self-report inventories, can be differentiated in terms of their respective relationships to emotional and intellectual capacities and achievements. Similar analyses were conducted using the Emotional and Cognitive Consequences Tests. The results were generally consistent with those reported in Tables 10.3 and 10.4, but they were of smaller magnitude and not statistically significant.

Some researchers (eg Barron & Harrington, 1981; Sternberg, 1985) maintain that self-report measures provide more accurate assessments of creative capacities than the kind of performance tests (such as the Consequences Test) used in the present study; other investigators disagree (eg Amabile, 1983; Torrance, 1962). Each type of measure undoubtedly has its advantages and limitations. In this study, at least, the self-report measures (Emotional and Cognitive Creativity Inventories) provided the most consistent (statistically significant) results. However, the performance measures, especially the Triads Test, were particularly useful in another way, as will be discussed next.

CHARACTERISTICS OF THE
EMOTIONALLY CREATIVE PERSON

A composite creativity score, it may be recalled, was obtained by combining scores from the Emotional Triads and the Emotional Consequences Tests. Based on this composite score, two groups of subjects were formed. A high-creativity group was composed of subjects whose composite scores fell above the median, and a low-creativity group was composed of subjects whose composite scores fell below the median. A series of *t*-tests was then conducted on the items of the Emotional Creativity Inventory. The items that distinguished the high- from the low-creativity group are presented in Table 10.5. Over half of the items of the Emotional Creativity Inventory (18 out of 32) reached "significance" at $p < 0.15$ level of confidence (one-tailed).

Earlier, we distinguished two stages of the creative process as most amenable to assessment, namely, preparation and verification. We further enumerated

Table 10.5. Items from the Emotional Creativity Inventory that distinguished high-creative from low-creative subjects, as determined by their responses to the Emotional Consequences and Triads Tests

| Significance level | Item |
|--------------------|---|
| $p < 0.01$ | 1. I am an emotionally sensitive person |
| | 2. I am interested in the emotional aspects of my life |
| | 3. My emotional life is important to me |
| | 4. I like art, poetry, music, dance, and paintings that arouse new and unusual emotional reactions |
| $p < 0.05$ | 5. I am good at expressing my emotions |
| | 6. When I have a strong emotional reaction, I search for reasons for my feelings |
| | 7. I sometimes feel that I am having an appropriate emotional reaction to a situation, even though my friends do not understand my feelings |
| | 8. I think about how my emotional reactions will affect other people |
| | 9. I communicate my emotions well |
| | 10. I am sensitive to the emotional experiences of others |
| $p < 0.10$ | 11. I think about and try to understand my emotional reactions |
| | 12. I think about past emotional experiences to help me cope with a current emotional problem |
| | 13. I sometimes experience a variety of different emotions at the same time |
| | 14. I am unable to experience deep emotions (Reversed) |
| | 15. I am able to communicate my feelings effectively |
| $p < 0.15$ | 16. I am in touch with my feelings |
| | 17. My emotional reactions do not reflect who I really am (Reversed) |
| | 18. I often react to situations in ways that others would not, but they usually understand and respect my feelings |

Note: Significance levels are based on *t*-tests, *df* = 98, one-tailed probabilities.

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three criteria for the verification of an emotionally creative response—novelty, effectiveness, and authenticity. These distinctions were based on an analysis of the creative process and its evaluation; however, as the items listed in Table 10.5 indicate, they also reflect personal characteristics of creative persons.

Specifically, emotionally creative persons place a good deal of importance and value on their emotions; they try to understand their emotional reactions, and they use that understanding to cope with new situations (preparation). According to their self-statements, highly creative persons also are able to generate uncommon emotional responses; indeed, they enjoy situations in which unusual emotions might be elicited (novelty). Emotionally creative persons also are sensitive to how their own emotions may affect others; they communicate their emotions well; and others respect their feelings, even when those feelings are out of the ordinary (effectiveness). Finally, emotionally creative persons describe their emotions as "deep", that is, as reflecting who they "really are" (authenticity).

The above description is, of course, constrained by the nature of the items included in the Emotional Creativity Inventory. To supplement this description, a qualitative analysis was made of the 400 stories subjects wrote in response to the Triads Test. Emotional responses are particularly revealing of the self (Epstein, 1983). In this respect, the Triads Test can be treated as a projective measure of personality.

The exploratory nature of these analyses precluded any serious attempt at quantification. However, seven features seemed to stand out as readily identifiable characteristics of the emotionally creative person. We will illustrate these features with verbatim quotes from some of the more creative stories. But before presenting these results, a possible confounding factor should be mentioned, namely, verbal fluency. For the most part, the more creative stories were longer and better written than the less creative stories. Moreover, the correlations between scores on the Triads Test and the SAT verbal scores were 0.36 for males and 0.29 for females, both statistically significant ($ps < 0.05$).

Some common variance is to be expected between verbal fluency and emotional creativity. Language is one of the primary vehicles for the codification and transmission of emotional rules (Averill, 1980, 1990). Facility with language should therefore be associated with emotional creativity; and, conversely, emotional creativity should find expression in language, as well as in other forms of behavior. All good poetry, Wordsworth (1805/1952) remarked, "is the spontaneous overflow of powerful feelings: it takes its origin from emotion recollected in tranquility" (p. 84).

Most of the episodes described by subjects in response to the Triads Test were at least partially recollected. In many instances, the lack of articulation that marked the less creative stories appeared to reflect impoverished emotional experiences rather than a lack of verbal ability. Stated conversely, subjects who had richer experiences provided richer descriptions. We elaborate on this point in the first feature discussed below.

1. *Emotionally creative persons are better able to integrate and express their emotions in symbolic form*

Driving on never to return—I wish. Another family fight, my typical reaction, get in the car and take off. Riding into the summer night air, mild and damp, makes me glad to be in motion, the breeze coming through the windows produces sensations of joy.—I'm angry as I was chased out of my own home. Things will be humid, intense, and static upon my return. And I'm lonely as I drive alone with my broodings, angry that it is I who must go into the night.—I'm better off this way. The air is so pleasant in the form of a breeze. It's a lonely feeling yet so peaceful it brings its own joy—and so I run in cycles until these cycles wear me down and I yield to my weariness and head for home. (Lonely/angry/joy/full)

In attempting the integration of incongruent emotions required by the Emotional Triads Test, emotionally creative persons often relied on symbols as a means to express feelings that were not easily articulated. In the above example, driving through the damp night air is a source of both loneliness and joy; metaphorically, it also reflects the conflict-ridden atmosphere at home ("humid, intense, and static"). The metaphor of cycles is also a recurring theme, both implicit and explicit. The story as a whole depicts an episode that is part of a cycle ("another family fight"). Within the story, another cycle unfolds: "driving on never to return"—but he does return, having "run in cycles" until worn down.

Goldstein (1983) suggests that only through symbolism can people express their innermost feelings. We would go further. Symbols are not simply a means of expressing preformed experiences. Through symbols (and the symbols need not always be verbal) people can mold and transform—in a word, create—experiences that may then be expressed in a variety of ways, symbolic and otherwise.

2. *Emotionally creative persons make more complex appraisals, take into account a greater range of stimuli, and are less likely to reach premature conclusions*

The woods are so peaceful and quiet. A great place to think out problems. Just why does she have to be sick anyway? What is going to happen to her? I don't know what to think anymore. I feel myself sinking into the peacefulness and longing of the woods. How I love to spend time here relaxing, being myself, thinking. Yet, there is this longing deep in my heart just to run to her and tell her how special she is to me. Just let my feelings open up and spill out. No more hiding and wondering and guessing. But, is that what would be best for her? The woods are telling me to go; she needs to hear all that, they say. I don't want to leave this protective peace, though, I am not ready yet. Just let me sit in its arms and think. No, tomorrow may not give me this chance. (Serene/bewildered/impulsive)

The greater complexity of emotional appraisals was one of the most obvious features distinguishing the creative from the non-creative stories. In the non-creative stories, subjects tended to focus almost exclusively on themselves. When

other aspects of the incident were attended to, emphasis was placed on the hedonic value of the situation for the subject, and the episode was brought to a rapid conclusion. In the creative responses, by contrast, various aspects of the situation (including the potential reactions of others) were given meaningful interpretation, and the conclusion of the episode was often left open to new possibilities.

The appraisals of the emotionally creative person seem to be related to a phenomenon observed in creative problem-solving. Performance on cognitive creativity tasks has been found to be positively correlated with overinclusion, the tendency to attend to a greater amount of information than necessary to solve a problem (Barron & Harrington, 1981). Although some of the information may appear to be trivial or even irrelevant, attention to such details may yield fresh insight into the problem at hand. Similarly, it is reasonable to assume that a more novel and effective emotional response would be generated by greater and more careful consideration of eliciting events.

3. *Emotionally creative persons are deeply involved in exploring the meaning of their emotional experiences*

Audioing for community music theatre productions is always quite an experience. I have such incredible respect for many of the people involved, yet at times I must laugh to myself and wonder if they know that I can sometimes see right through them. Oh, to have the talent that I might be admired as I admit them, but always my performance is fatally flawed, although they say "good job" or worse, "thank you, we'll be in touch". To dance, to sing, to fly through the stars without lying awake until dawn repeating and repeating in my mind every obvious falter. I shall never, not ever, have what it takes. And I pause. In a moment of what I hope is honest reflection, I hope I am honestly laughing at myself. (Embarrassed/jealous/amused)

Although the moment of creative insight—like the moment of emotional reaction—is often depicted as spontaneous and beyond control, creative responses, whether cognitive or emotional, are largely dependent on background knowledge and experience. It may be recalled that prior preparation was one of the criteria used in construction of the Emotional Creativity Inventory; it was not, however, an explicit criterion used in rating the responses to the Triads Test. Nevertheless, as the above example illustrates, emotionally creative persons devote time and energy to understanding their emotions; they are honest about their feelings; and they consider the possible consequences of their behavior.

4. *Emotionally creative persons give thoughtful consideration to the feelings and behavior of others*

While working at the city's home for mentally disturbed children, I find myself drawn to a particular little girl named Anne. She is autistic, yet somewhere beneath those thin feathered curls, I know lies a smart, affectionate person. I feel myself drawn to her, like a big sister, and I watch every day for signs that she is starting to respond. After lunch, she gets sick, and can only sit there in her own vomit.

I must clean it up. It's not pleasant, she smells. As I clean her, I take special care to wash her hair. I know that some day she will be a beauty. (Affectionate/disgusted/hopeful)

Emotional experiences are self-centered almost by definition. That is, emotional appraisals, contrast to more objective judgments, interpret events in relation to the individual's own needs and goals (Arnold, 1960; Lazarus, 1966). To a certain extent, emotionally creative persons are able to "decenter" their experiences and accommodate the needs and goals of others. This decentering is facilitated by the greater use of symbolization, to which we have already referred. Symbolization allows emotionally creative persons to reflect upon the meaning of their experiences within a broader, more encompassing context.

5. *Emotionally creative persons are less bound by preestablished personal or social standards, and they are more tolerant of conflicting traits in themselves and others*

How did he think this up from his position? My brother won't admit his lies even when the family tells him we know he's lying. He's a dropout, a chronic liar, and he's working in a 24-hour foodmart. It's my niece's birthday, and he got her a windup toy pig. She pushed her new dolls aside and grabbed the pig. You wind it up and it moves and squeals. To watch her play with it and to think of him—he's a genius.—I watch the pig and I'm disgusted with him for his inability to organize his life, but he's his own person.—I'm hopeful that something will sweep him out of the limelight and into the spotlight he deserves—he's an actor, you know. (Affectionate/disgusted/hopeful)

It is one thing to recognize the feelings of others, it is another to afford some legitimacy to those feelings when they go against one's own or society's values. Emotionally creative persons do not rigidly impose their own standards on others. In the above story, the woman begins by expressing strong disapproval of her brother's behavior. On further reflection, however, she recognizes that he is a "genius" in his own way. She thus displays the capacity to accommodate two conflicting assessments simultaneously. She vacillates between these assessments, without relinquishing one for the other.

In terms of cognitive style, creative persons have been described as having a tolerance, or even a preference for inconsistency or conflict with regard to perceptions and concepts (Arieti, 1976). The importance of this characteristic for creative achievement in general is illustrated by Kuhn's (1970) assertion that important scientific advances result from the tension between two incompatible modes of thought. But perhaps most relevant to the above example is Barron and Harrington's (1981) finding that creative persons have the ability to accommodate conflicting traits within their self-concepts. In terms of emotional creativity, it appears that conflicting traits in other persons are also tolerated with compassion.

6. *Emotionally creative persons experience the less prototypical features of even standard emotions*

I am at my mother's funeral. She has died after a long illness and now, after all those years of suffering, the pain is gone. I am standing amidst a group of people, all of whom I can easily and quickly imagine being with my mother at some point in time. It seems odd that she is not visually present in the room with us. And I wonder how I should act now in front of these people—how do they know me, and what do they associate me with? My mother? The poor daughter of a dead mother? Or should I feel strong and bold now? Now that it is over, I can be anyone I want to be. (Serene/bewildered/impulsive)

Not every emotion is equally susceptible to innovation and change. Grief is a good example of one that is less malleable. Many of the reactions following bereavement are biologically based, although even in the case of grief, biology allows ample room for cultural and individual variation (Averill, 1979). From reading the responses to the Triads Test, it is apparent that emotionally creative persons are not only able to fashion unusual emotions; they also experience the less prototypical features of more standard emotions, such as grief. In the above story, for example, the young woman finds serenity at her mother's funeral. She is also bewildered, but not for the reasons one might suppose. She imagines the other mourners interacting with her mother, and it strikes her as odd that her mother is not "visually" present in the scene. She also wonders how the mourners regard her and how she should act in front of them. She is obviously unclear about her role as a grieving daughter. But it is not just her behavior that is uncertain. She also does not know quite how to feel; sad, depressed, relieved, strong, bold, or liberated. The sense of freedom and enthusiasm expressed in the last sentence of the story seems especially contrary to our usual conceptions of grief. For the emotionally creative person, however, bereavement can be an opportunity for growth and change, as well as for despondency and despair (Marris, 1975).

This brings us to the last characteristic of emotionally creative persons as revealed in their responses to the Triads Test.

7. *Emotionally creative persons find challenge where others see threat*

"It's my turn to see what I can see. I hope you'll understand, this time's just for me." I sing out loud to the black night sky and the yellow glowing silhouette of Boston across the bay. I strongly throw pebble after pebble into the night black harbor almost hypnotized and unaware of what goes on in my mind. I'm all alone, I think. Just me and the woods and the water and no one. And a tear escapes. I wipe it away angrily and stand up. I am alone, by myself, with myself, and for myself. I don't need him. I don't need them. Any of them at all. I have me. I can do anything I want and not be tied to them and their routines. Who needs them, not me! I shout at the empty sky. I can do it all, all by myself. I'll show them, I'll tell them! But who will I tell—who will care? (Lone/angry/joyful)

"Necessity is the mother of invention." This old adage is as true in the emotional as in the intellectual domain. If a situation is sufficiently demanding, creativity is to an extent forced upon us. But most situations are not so extreme. The possibility exists for alternative appraisals—threat or challenge (Lazarus, 1966; Lazarus & Folkman, 1984). The emotionally creative person is more likely to choose the latter.

For a person to find challenge where others see threat presumes some degree of self-confidence or perceived self-efficacy (Bandura, 1986). Again, we note the importance of prior preparation and understanding. Emotional creativity, no less than creativity in other domains, does not simply happen. It is an achievement, born of struggle and forethought.

Picasso once remarked, "Every act of creation is first of all an act of destruction" (quoted in May, 1975, p. 63). What is destroyed in emotional creativity? Often, customary values, established relationships, and familiar ways of responding. The challenge is too great for many. Not having prepared, they lack the resources and self-confidence to be emotionally creative.

CONCLUDING OBSERVATIONS

We began this chapter by noting some incompatibilities between the concepts of emotion and creativity. We conclude by noting some similarities. In a letter to a friend, Dostoyevsky gave the following description of the creative process:

If you wish—he [the author or poet] is not the creator; life is—the powerful essence of life, the living and essential God, putting his strength in many distinct creations at various places, and most of all in the great heart and in the strong poet . . . (quoted in Weisberg, 1986, p. 117)

Change a few words and this quotation by Dostoyevsky could be used to describe the emotions, which to many theorists are "the powerful essence of life" put in us by Nature, if not by God.

We do not mean to gloss over the important distinctions that exist in the everyday connotations of the words "emotional" and "creative". Under most circumstances, these concepts belong to different "language games", that is, to the social microcosms in which words attain meaning (Wittgenstein, 1953). In a court of law, a person accused of a crime might well plead, "I couldn't help it, I was overcome by emotion". It would be odd indeed, however, to hear a person who is about to be awarded the Nobel prize for science or literature proclaim, "I couldn't help it, I was overcome by creativity". But as first-hand accounts of creative achievements often indicate (see Ghiselin, 1952), both assertions could be equally true—and equally false.

One purpose of this chapter has been to change, or at least to broaden, the ways we talk about emotions. Such a change in discourse would have ramifications both upwards, to the way emotional syndromes are understood

and constituted, and downwards, to the way they are experienced and expressed. The old language games still have their place, but their limitations can no longer be ignored. The world is changing rapidly, largely due to human invention. Possible nuclear holocaust is perhaps the most dramatic, and hence the most frequently mentioned, threat facing humankind. However, it is probably not the most likely. Less dramatic but more relentless are the threats posed by an ever-burgeoning population, by medical technology that prolongs life at terrible costs in social resources and personal dignity, and by the steady erosion of our natural environment. If we are going to meet these threats as challenges and ultimately prevail, new ways of feeling as well as thinking will be required. Emotional creativity may be demanded of us, not simply as a theoretical exercise, but as a practical necessity.

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