CREATIVITY IN THE TWENTY-FIRST CENTURY: A CRITIQUE OF CONTEMPORARY THEORIES OF CREATIVITY

DISSERTATION

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By

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ABSTRACT

Throughout Western civilization, creativity has been studied via positivist methodologies, and theories of creativity have been accepted in such fields as education, the arts, science, and business. However, Modernist/positivist approaches to creativity carry with them inherent problems. Issues central to academic discourse in the Twenty-First Century include cultural and gender diversity, authorship, originality, genius, and constructivism. Recognition of these issues requires a re-examination of theories and assumptions about creativity.

This philosophical study is a critical analysis of creativity theories conducted from a Postmodern, deconstructive perspective. It examines modern views of creativity, identifying biases, omissions, and meta-narratives. It also looks at postmodern views related to creativity, finding nihilism and negation.

In hopes of salvaging a concept of creativity, this study advances a theory that creativity is a form of experience and catharsis which can manifest across cultures, genders, socio-economic groups, and in a vast array of domains. The study ends with a call for research that is less dependent on quantitative methodologies, more inclusive in its populations, and

more open to creativity in normal life situations. The result is an extension of thought about creativity from the traditional focus on product to a new focus on human experience.

Dedicated to Gary Alan Smith

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CHAPTER 1

CONCEPTUAL FRAMEWORK

1.1 Introduction

Creativity has been romanticized in literature and philosophy, feared and revered by society, and studied by social scientists. Theories of creativity abound. Most researchers have employed one of two positivist methodologies: retrospective case studies of eminent people and empirical studies comparing average people to those deemed highly creative. Of late, neurological methodologies such as brain mapping and PET scans have also been used to observe brain activity during creative activities. Researchers have amassed a body of information about creativity, mostly dealing with particular ingredients of the creative act or traits of the creative person. While sometimes confusing and often divergent, the theories of creativity have been accepted and employed in a variety of fields, including education, the arts, science, and business. Modernist/positivist research approaches to creativity carry with them inherent problems. Central to academic discourse at the turn of this century are issues of cultural and gender diversity, ethnocentricity, authorship, individualism, genius, and constructivism.

Recognition of these issues brings with it a need for re-examination, a Postmodern critique, of creativity theory.

In its zealousness to recognize and correct Modernist biases and limitations, a Postmodern perspective on creativity might, however, have its own shortcomings. Therefore, this study will also examine post-modern views of creativity in hopes of advancing theory beyond the limitations of modernism and the chaos of post-modernism toward an, at least partially, cohesive discussion of the concept and experience of creativity.

1.2 Background

In the early 1990ís, Howard Gardner spoke at an Ohio Association for Gifted Children conference where he presented his then new book, Creating Minds. His book sought to determine the essential ingredients of creativity via a retrospective look at seven modern masters who forged a new agenda in their fields and gave rise to one or another version of the modern era (1993). During Gardner's discussion, I was nagged by the fact that all of his subjects were white males (with the exception of Martha Graham, a woman working in the predominantly female field of dance). Being a woman, myself, and one who had tried with difficulty to maintain some continuity in my creative work while I raised three children, maintained a home, and held down a job, I was acutely

aware of the privilege Gardner's seven great individuals had been afforded. None of them had to balance family, career, and bread-winning at the times that they rose to eminence. Nor did they have to deal with issues of discrimination and/or poverty.

Since my experience with Gardner's ideas, I have been introduced to recent major changes of thought, a philosophy known as Postmodernism, which has encouraged society to look beyond the white-Euro-American -male model of knowledge, discourse, art, and science. I began to question the validity of much of the research (and interpretations of that research) generated about both creativity and highly creative people.

2.3 Research Question

In light of Postmodern perspectives on the positivist, linear, ethnocentric, and elitist nature of 20th Century ideology, how is the existing body of scientific literature about creativity sufficient and insufficient in its explanations; and are there ways in which a Postmodern discussion of creativity might also be insufficient?

2.4 Subsidiary Questions

- How has empirical science constructed an understanding of creativity? What are the limitations of empirical science and the subsequent exclusions of inquiry that have been imposed by the requirements of empirical science.

- What is the relationship between creativity and individual talent/genius? Is genius a valid concept? What are the socio-cultural implications of the theory of genius?

- How do issues of power and oppression affect the appearance of creativity and, therefore, creativity theory and research?

- The concept of more creative and less creative cultures (Shindler, 1996) is problematic. What are ways to view creativity in non-Western cultures, cultures which do/did not value personal ambition, rugged individualism, progress, and boot-strap approaches to life work?

- How does creativity theory deal with current questions of authorship, collaboration, and manufactured products?

- What are ways to conceive of the creative process other than the traditional linear definition?

- Is there a necessary role for novelty/originality in the
- concept of creativity?

- What are the relationships and lack of connections between creativity and art?

By first restating the myriad research theories regarding creativity, critically analyzing them, and then synthesizing the information, this author will bring new focus to the current vision of creativity.

2.5 Structure of the Discourse/Methodology

According to constructivist theory, knowledge/meaning is always an interpretation of experience by an individual situated in a socio-cultural context (Denzin and Lincoln, 1994). It is not a concrete product or recitation of information which exists

independent of the knower (Denzin and Lincoln, 1994). An academic inquiry into creativity, therefore, should be a process that serves to elucidate the meaning-construction that has already occurred (Denzin and Lincoln, 1994), seeking to clarify how the meaning of creativity is embodied in the language and social relationships of Western culture. The principal concerns should be epistemological and ontological rather than methodological (Denzin and Lincoln, 1994).

Following a prescription of post-positivist science, this study will be a Postmodern socio/cultural deconstruction of the research and scientific conclusions regarding creativity and creative individuals. It will follow the chain of ideas that form current creativity theories of originality, novelty, genius, personality, cognition, environment, and process in order to illuminate the nature of the theories' social construction - being ever cognizant of Lyotard's admonition that all assertions of truth are but socially produced metanarratives (Spretnak, 1991).

The deconstruction of creativity theory will facilitate examination of relationships of power and oppression that have affected the production and validity of knowledge (Foucault cited in Spretnak,1991) about creativity and creative individuals. As Attridge paraphrased Derrida (as cited in Lye, 1996. P. 1), "the ethical and political are implicated at every step" of deconstruction.

In addition, this study will look at how the parameters of positivist science may have contributed to both the understanding and misunderstanding of creativity and creative people.

At the end of the deconstruction process, creativity theory will likely be de-reified and left lying as scattered pieces of research, no longer assembled into an easily understood cohesion or metanarrative. Many Postmodernists would be satisfied with this de-centered, ambiguous state of non-understanding (Natoli & Hutcheon, (1993). Being a human construction, Postmodernism is also limited in its perspective. Therefore, the final stage of this study will be to re-examine the pieces of creativity research and attempt to present (self-consciously aware of the limits of this author's own context) revisioned theory/ies of creativity which at best can be only enormously suggested (Spretnak, 1991).

The general structure of this paper is as follows. After this chapter, Chapter 2 will review the literature about creativity, enumerating and explaining the primary theories and related research that has developed throughout history, especially during the Twentieth century. Next, Chapter 3 will explain the tenets of Postmodern thought in order to prepare the reader for the Postmodern deconstruction of creativity theory and research that will follow. Chapter 4 will critically analyze five dominant theories about creativity. The critiques will each examine the lineage of knowledge construction, the limitations that empiricism has placed on the understanding of creativity, and the socio-

cultural implications and biases inherent in these dominant theories of creativity. After the many problematic areas of previous studies of creativity have been delineated, Chapter 5 will propose a new theory, one that is more socio-culturally inclusive and that extends beyond the boundaries of previous scientific inquiry. Chapter 6 will be a call to study creativity differently and more inclusively than in the past. The intention is to revitalize interest in and motivate contemporary scientific inquiry into creativity to extend understanding to include a variety of cultures, forms, styles, and purposes. Questions will be raised that, this author hopes, will spark further research and thought.

CHAPTER 2

LITERATURE REVIEW: THEORIES OF CREATIVITY

Creativity is magic, heredity, wish fulfillment, sublimation, unconscious thinking, gestalt, association, a cognitive style, divergence, a personality type, novel product, or process. It results from conditioning, self-actualization, environment, is associated with mental illness, and is a gift from the gods. So say the myriad theories proposed by researchers who have sought to understand the intriguing phenomenon of creativity. Though creativity is probably an umbrella that arches over a variety of interacting factors, it has been studied piecemeal by reductionist scientists who each attempted to identify "the" definitive, essential element of creativity.

2.1 Magic

The desire to understand creative impulses, actions, and results probably dates back to the beginning of humanity when creativity and spirituality were inextricably linked. Cave painters were, according to contemporary belief (Gombrich, 1995, p.42) conjoining with animals' spirits to harness their powers and allow them to be hunted. The creativity of

cave people served to communicate with spiritual power and bring it to earth. Worldwide, indigenous/tribal cultures have engaged in creative acts of visual, musical, and dramatic art in order to access the power of their gods. Native American vision quests and dream interpretation, for example, are not only highly spiritual acts but highly creative ones, as well. Both art historian, Gombrich (1995) and English translations of Native American and African language use the word magic (Leutzinger, 1967) to connote the strong spiritual power which can be evoked through the creation and ritual use of art. Contemporary authors have also related magic to creativity, including Arieti (1976) who titled his book about creativity, The Magic Synthesis. According to many people of diverse cultures and time periods, creativity is considered to be conceived by or to conceive spiritual magic.

Historically, Western culture has linked creativity with spiritual energy by attributing creativity to God or the gods. During the height of the Classical Greek period, Plato wrote "It is not [poets] who utter these precious revelations while their mind is not within them, but that it is god himself who speaks, through them becomes articulate to us" (as cited in Rothenberg, 1976, p. 32). In Greece, God's creative inspiration was believed to be bestowed on poets and artists by "muses." Muses were nine sister goddesses who associated with creative people and fed them ideas, melodies, and images for their art (Webster, 1986). According to Plato, "each [poet] is able to do well only that

to which the Muse has impelled him" (as cited in Rothenberg, 1976, 32). Therefore, when a creative individual experienced a dry period in which inspiration had stopped, he[1] would call on the muses for ideas. Likewise, when the individual created a great work, it was the muses whom he credited for the idea. The concept of muses continued throughout history into this century. Elizabethan, Renaissance, and Modern creators have spoken concretely or metaphorically about muses.

When speaking about his own creativity, fugal horn player, Chuck Mangione, referred, not specifically to muses, but to a sense that his inspiration was given to him from power outside himself. He described feeling that he was only a vehicle through which music could be presented to the world. Songwriter, Eric Gnezda (In Gnezda-Smith, 1994) described his experience with creative inspiration as a mountain that is presented to him by a "higher authority." Half way up the mountain, the higher authority abandons him, leaving him to finish the creative act through laborious, human work. Psychologist, Rollo May, also considers God to be an essential part of creativity, although to him creativity causes a conflict with the gods. "Authentic creativity takes so much courage [because it is] an active battle with the gods" (1975, p. 19). He refers to a letter by George Bernard Shaw that cautions violinist Heifitz that no one can play with

[1] "He" is used consciously due to its acceptance during Pre-modern and Modern eras as a reference to both genders and due to focus on males in traditional histories of creative accomplishments

such perfection without provoking the jealousy of the gods (Cited in R. May, 1975, p. 19). English professor, Robert Grudin (1990), while maintaining a clearly modern perspective on issues of creativity, prefers an ancient definition of creative inspiration specifically because it carries religious overtones. The term, inspiration originally connoted a breath of divinity or a transfusion of the soul received from the gods (1990, p. 10). Grudin prefers this thought to a modern, scientific definition of inspiration because he believes it better describes the psychological phenomenon of inspiration. To be inspired is to surrender one's mind to a new force, heedless and powerful. Experiencing inspiration is like leaving the world of effort and abandoning oneself to an irresistible flow (1990, p. 10). Though much scientific research about creativity has occurred in the last century or so, contemporary thinkers - like their non-western and historic brethren - seem to be intrigued by, if not, believers in the concept of creativity as a gift from the gods.

2.2. Heredity

Since the middle 19th century, scientific method has been applied to the study of creativity. In 1869, Francis Galton attempted to explain creative genius in Darwinian terms. His research suggested that genius was hereditary. Galton believed that people were like dogs or horses who could be carefully bred to have a particular talent. He

thought it possible to produce a highly gifted race of men by judicious marriages during several consecutive generations (1869). His research, which assumed that high reputation was equated with high creative ability, was archival, following the lineage of highly eminent men of English history, literature, science, law, art, music, and scholarship. His results indicated a "large total" (1869, p. 46) of cases of genius which occurred within families and which he assumed were hereditarily determined. His premises and conclusions were clearly based on the biased ideology of Social Darwinism.

2.3 Wish Fulfillment and Sublimation

At the beginning of the 20th century, psychologist, Sigmund Freud applied his theorizing to the issue of creativity. Believing that all human behavior was motivated by either ambition or sexual drive, he postulated that creativity was merely a form of sublimation and wish fulfillment (1908.). He linked creativity to childhood fantasizing and play, which when engaged in by children help fulfill their wishes to grow into adulthood. However, adults who fantasize, according to Freud, are unsatisfied people who should be ashamed of their fantasies. Freud made allowances for creative adults (writers), however. Their fantasies were acceptable because they were not idle, but were fulfilled through creative work (1908). Creativity, according to Freud, is a substitution

for inappropriate sexual and aggressive drives via playful fantasizing that finds its fulfillment in appropriate work

2.4 The Unconscious

Freud's protege, Carl Jung applied his theories of depth psychology to the phenomenon of creativity. He postulated that unconscious thought produces creative insight. He believed that an unconscious region of the psyche becomes active and begins making associations, thereby attracting psychic energy away from conscious thought. When the unconscious associations reach a point of significance, what Jung called "threshold intensity" (Cited in Campbell, 1976, p. 274), they break through into the conscious, and the individual becomes aware of them (1923, p. 120). Jung suggested that highly creative people had more permeable boundaries between the conscious and unconscious, making them more adept at creativity. This threshold experience resembles the illumination stage of creativity (Wallas, 1926) and is called inspiration in the vernacular. Because energy is drawn away from consciousness during the idea-search stage of creativity, the creating individual appears to be apathetic or lazy in his/her outward life. Self-reports by geniuses often describe low arousal states, such as during walks (Ghiselin, 1952) or fallow periods (Gnezda-Smith, 1994) which were followed by sudden, energized leaps of insight when ideas seemed to present themselves to their

surprised creators. These leaps of insight seem to correspond to Jung's concept of threshold value. Poincare clearly described his process of solving a major mathematical problem. It started with a long period of conscious work. Only after he deemed his conscious work fruitless and went for a quiet walk did the solution suddenly and forcefully occur to him (Gheiselin, 1952). Tchaikovsky reported that "the germ for a future composition comes suddenly and unexpectedly...it takes root with extra-ordinary force" (1924, p. 274). Sessions, also a composer, discussed inspiration as an "envisioned impulse towards a certain goal...a flash of recognition that this was exactly what he wanted to do" (cited in Ghiselin, 1952, p. 37).

Interviews with highly creative contemporary individuals conducted by this author (1994) also suggest experiences of sudden insight in which ideas seem to occur spontaneously and autonomously. Jenny spoke of ideas that "come to me" and "bring an answer when you least expect it." Steve discussed the times when ideas "blind-side" him. Eric said that after a fallow period his inspirations come "somehow out of thin air."

These highly creative individuals experienced an initial, mentally quiet, unconscious period that was likely an unconscious scan for information followed by the surprise of a coagulated, whole idea of which the creator suddenly became aware. Classical psychologists term these sudden, holistic presentations of ideas "gestalt" experiences (Arieti, 1976). The gestalt experience seems to be sudden and highly

charged - cathartic in the therapeutic process and motivating in the creative process. In his research, Martindale (1978) found evidence of variation of brain energy levels that correspond to the emotional experiences noted by creative people as they progress in the creative process from idea search to gestalt. His studies suggested that highly creative individuals, unlike less creative individuals, had levels of mental arousal (cortical energy) which tended to decrease as they participated in the idea-making phase of their creative activities. This was especially true for non-verbal tasks during which right hemisphere alpha (low arousal) waves were strong. Later in the process when, in what Martindale called the "elaboration" phase, highly creative individuals exhibited a spike in /heightened levels of cortical activity (1978). Perhaps, Martindale has documented the neurological changes that underlie the creative process as described by Jung and others: the progress from low energy, fallow, unconscious idea-search to sudden, high energy, exhilarating gestalt.

Psychologists Roe, Arieti, May, and Kris based their work on Jung's theories of the unconscious. Roe cited Jung's psychoanalytic theory when she attributed the "inventive phase" of creativity to primary process thinking, another term for unconscious thinking (1976). Primary process thinking is described as non-logical. It condenses, displaces, and symbolizes ideas and images in ways that occur during dreaming and childhood fantasizing. The highly creative person, Roe postulated, is one who easily

permits him/herself indulgence in this "primitive" thinking style (1976, p. 173). Arieti (1976, p. 184) similarly stated that creative people are especially adept at accessing the imagery, metaphors, and empathy which are related to the primary process. Kris (1952), an art historian and psychoanalyst, described the creative mind's submersion into unconscious thought as purposeful regression to a more primitive thought process, the primary process. His theory is known as "regression in service of the ego" (1952, p. 135).

Applying late twentieth century scientific knowledge of brain function to Jung's and Kris's theories of creativity and the unconscious, art educator Michael Day, explained how he believed the brain achieves unconscious thinking (1992). He considered the unconscious to be a metaphor for the right cortical hemisphere of the brain, which functions non-verbally, is more responsive than to left to sensory imagery, and is adept at analogical/associative thinking. He believed, therefore, that what Jung called the conscious is in actuality the left hemisphere, because it specializes in thoughts and responses that are language-based and more easily acknowledged by the thinker . The research of Bogen and Bogen (1972) seems to corroborate Day's theory (1972).

According to a variety of scientists and researchers, unconscious thought processes seem to be highly related to the metaphorical, imagistic, and gestalt thinking of creativity.

2.5 Association

Assuming the validity of theories of the unconscious, many researchers sought to explain exactly what the unconscious does during creative work. In an essay regarding regression to primitive thought processes (i.e. the unconscious), Kubie used the following words to describe creativity: "unexpected connections, new relationships, metaphor, overlapping meanings, vague similarities, establishing links to something which in other respects may be quite different" (1958, p, 147). The linking together of seemingly disparate elements is known in creativity literature as "association." The unconscious of the creative thinker is theorized to seek out relationships between ideas, assimilate disconnected information, recognize and arrange patterns, and match possible solutions to problems. (Gnezda-Smith). Thought by many to be the basic mental operation that produces creative thought, association has been studied by a diverse group of researchers, including Koestler, Arieti, Rothenberg, Vaughn, Mednick, Martindale, and Mendelsohn.

Koestler (1964) is well known for his discussions of "bisociation." He hypothesized that the synthesis of two incompatible frames of reference was the essential work of the unconscious during times of creative incubation (1964, p.110). Arieti echoed Koestler's beliefs by entitling his book, Creativity, The Magic Synthesis (1976). He discussed thinking that reaches in two or many directions at once to forge "unusual networks of neurons" (p. 394).

Embracing similar thought, Rothenberg (1971) coined the term, "Janusian thinking," after the Roman god, Janus, who could see opposite ways at once because he had faces on both sides of his head. Rothenberg also used the term, "homospatial thinking," suggesting that two separate thoughts occupying the same mental space will create a new identity (1971, p. 311). Like Rothenberg, Vaughn believed the major characteristic of creativity is the reconciling or balancing of opposites. Vaughn's balancing act included not just the synthesis of differing ideas, but the balancing of conscious and unconscious processes (1985).

Mednick (1962) developed a popular creativity test called "The Remote Associations Test." Each question on the test was a list of three seemingly unrelated words. The respondent was asked to add a fourth word that would illuminate the association between the first three. For instance, if the words were "rat," "blue," and "cottage" the expected answer would be "cheese" (Glover, 1989). Mednick believed that fluency of association combined with the ability to select appropriate associations were the crucial characteristics of creative people. Furthermore, he believed that highly creative people have a "low associative hierarchy," meaning that they would not fix their attention on one or two obvious associations, but let the attention wander so that they may experience many and remote associations. This seems to be forethought of what was later to become Martindale's work on cerebral energy levels.

Mendelsohn elaborated on Mednick's ideas by suggesting co-existing streams of mental activity, rather than of simple ideas. To test out Mednick's views on the relationship between creativity and wandering attention, Mendelsohn (1975) conducted experiments to test differences in attentional capacity between less creative and highly creative individuals. He found that highly creative people seemed to have greater and broader attentional capacities for internal and external stimuli than did less creative people (1975). In addition, Mendelsohn discovered that highly creative people retrieved more information from the environment, increasing the amount and accessibility of such information for possible simultaneous mental processing. He postulated that this difference accounted for the ability of highly creative people to achieve more combinations of thought.

This study was a basis for Martindale's studies of mental arousal and creativity. The implication of Martindale's and Mendelsohn's studies is that creativity may depend on low levels of mental arousal which diffuse a person's attention so that it may spread itself amongst a variety of thoughts or streams of thought at one time. The result may be adeptness at ideational associations, perhaps the essential task of creative thinking.

2.6 Cognitive Style

Martindale's studies documented a neurological difference between "high creative" and "low-creative" people (1974, p. 317), suggesting that the potential for creativity, is stronger among some people than others. This belief is implicit in culturally held concepts of talent and genius and explicit in the work of Jung, Mendelsohn, Torrance, Guilford, Mednick, Hermann, Gardner, Amabile, Khatena, MacKinnon, and others. According to these researchers, highly creative people have specific mental abilities or facility with certain mental tasks.

A major voice in the study of the relationship between cognitive abilities and creativity was Guilford (1967), who developed a system of factor analysis to describe the multiplicity of cognitive functions he believed are related to high levels of creativity. He described a schema for all thought processes which he called the "Structure of the Intellect Model." Most pertinent to the understanding of creativity are his concepts of convergent and divergent thinking, two of the five basic mental operations he proposed. The term, convergent thinking, describes mental work that uses information to arrive at one, specific, correct answer. Divergent thinking is mental work that generates a number and variety of responses to a situation, thus producing uncommon responses. Guilford believed that divergent thinking is the most necessary element of creativity. Expanding

upon his theory, he specified abilities that were important to divergent thought: fluency, flexibility, elaboration, and originality. A person who could generate an especially large quantity of responses to a single stimulus was considered to be fluent. One who was able to shift easily from one class of mental associations to another, thereby, generating many types of responses had flexibility. Responses that were statistically infrequent or unique were original. The ability to extend an idea beyond the initial thought, to add to, adapt, or in other ways be expansive in idea development was elaboration. Guilford set the stage for the development of instruments supposed to be effective in identifying creatively gifted people. The Torrance Tests of Creative Thought (TTCT) are composed of a figural and a verbal segment used to assess fluency, flexibility, and originality. Kerr (1991) raises questions as to the validity of these tests, believing that, though the TTCT have high inter-rater reliability, they do not necessarily correlate with real-world creative production. Nevertheless, the TTCT are commonly used in public schools to help in the search for creative giftedness among young people.

Late twentieth century neuro-science is frequently sited to help explain of the divergent aspects of creative thinking. Day, for instance, identified the unconscious as the right cerebral hemisphere of the brain (1992), to which Restak (1984) attributed work with associations, patterns, metaphorical thinking, non-linear ideating, and visualization. All of these cognitive tasks are highly correlated with creativity. Hermann (1993)

identified four categories of cognitive style that he associated with different cerebral, limbic, and hemispheric divisions of the brain. Mental tasks that produce creative invention and insight were related to right hemispheric cerebral function. When strong affective involvement results in the application of imagination and insight to interpersonal situations, Hermann believed the right hemisphere limbic system was also involved. Hermann's theories tended to reinforce Day's (1992), Bogen's and Bogen's (1972) and others' beliefs that creativity is highly correlated with the right hemisphere of the brain.

According to the literature, it would seem that the mental factors most closely related to creative talent are 1) alternating phases of low then exhilarating high levels of brain arousal as described by Martindale and 2) strong right hemisphere ability which produces imaginative, associative, and divergent thoughts.

2.7 Personality

Another approach to investigating creative talent has been the study of personality, led by the research of MacKinnon, Myers and Briggs, Roe, Jung, and others. Roe studied scientists (1976), MacKinnon conducted separate studies of scientists and architects, Myers and Briggs set up an entire institute to study personality types of a variety of professions, and Jung established the underlying theory. Lists of

characteristics of more highly creative people were developed through this myriad research about personality. Many personality traits were included, though some were redundant and others contradictory. Table 1 presents a list of the most common characteristics of creative personalities and some of the researchers who identified them. Most research about creative personality was open-ended and generated long lists of characteristics. The research of Myers and Briggs simplified study of personality by seeking to classify personalities according to the four predetermined categories originally proposed by Jung (Campbell, 1971, Hillman, 1971). Within each of the four main categories were two opposite personality traits, arranged in continuum-like fashion. These traits were labeled Introversion-Extroversion, Sensing-Intuition, Thinking-Feeling, and Judging-Perceiving.

Introversion means a preference for introspective thought. Introverted people are believed to be energized by inwardly-directed mental work. Extraversion, on the other hand, is a preference for thought that is directed outwardly toward environment or social interactions. According to studies conducted at the Institute for Personality Assessment and Research (I.P.A.R.), the majority of creative artists, architects, writers, scientists, and mathematicians were more likely to be introverted than extraverted (Myers & McCaulley, 1985). Those characterized as highly creative were much more likely to be introverted.

TRAIT	RESEARCHER
Independent, autonomous, radical, non-conforming, unconventional	Roe Barron & Harrington MacKinnon Torrance Catell
Introverted, withdrawn, bashful	Roe Cattell MacKinnon Myers & Briggs
Emotionally sensitive, mood disorders, unstable, eccentric, open to emotions and primary process, open to experience, easy access to the unconscious	Roe Cattell Sandblom Jung Barron & Harrington Fitzgerald
Intuitive	MacKinnon Barron & Harrington Jung Myers & Briggs
Tolerant of ambiguity and disorder, can reconcile opposites, prefer the disordered or irregular	Roe Barron & Harrington Vaughan Torrance
Aesthetic	Barron & Harrington Roe
Persevering, striving	Roe MacKinnon
Fault-finding, sensitivity to problems	Torrance Getzels
Men more feminine, women more masculine than average on personality scales	Roe MacKinnon

Table 1: Personality Traits of Creative Individuals

Exceptions included highly creative photographers and designers whose jobs required them to interact with their external environment. Also classified as extraverted were actors, musicians, and dancers for whom public performance is a professional necessity.

Another personality type characteristic identified in Myers-Briggs (M.B.T.I.) research as being closely related to creativity is intuition. Intuition, as used by Myers and Briggs, indicates an ability to easily derive information, metaphors, symbols, and insight from the unconscious and/or mental realm (Myers, 1980). Strongly intuitive people are often thought of as visionaries. Sensing, its opposite, indicates a reliance on and trust of the concrete, realistic, and observable world (Myers, 1980). Strongly sensing people are often thought of as pragmatists.

In the previously mentioned studies of creative architects, writers, research scientists, and mathematicians, the correlation between intuition and creativity was extremely high. Nearly all (103 out of 107) were classified as intuitive (Myers, McCaulley, 1985).

A third category of Myers-Briggs personality typing is judging/perceiving. This category addresses issues such as lifestyle and decision-making. Judging types need orderliness of possessions and organized systems of doing things as well as planned schedules, clear authority, routine, decisiveness, and early closure (Myers, 1980). Perceiving types, conversely, tend to chafe under the constraints of too much order. They

prefer the spontaneity of new experience to well pre-planned activity. They delay decision-making in order to allow time to receive all possible information about a situation. They recognize the possibility of multiple standards of behavior and multiple criteria for decision-making. They are comfortable handling the unknown and unexpected (Myers, 1980). The term, perceiving, seems to be describing what Roe and others referred to as the ability to tolerate ambiguity and disorder (Roe, 1976).

I.P.A.R. studies confirmed a relationship between perceiving types and high levels of creativity in some fields (Myers & McCaulley, 1985). Highly creative fine artists, mathematicians and performing artists were likely to be perceiving types. Musicians, writers, and scientists were neither decisively perceiving nor judging and highly creative scientists were most often the judging type. While most forms of creative work need vision, playfulness, and flexibility of form, the rigid requirements of the scientific method may, instead, demand a highly structured judging personality. Also a possibility is that the rigors of the scientific method had caused highly creative scientists who may have originally been perceiving to make such adaptations in their natural styles that they scored high on the M.B.T.I. scale for judging types.

The fourth factor of the Myers-Briggs personality type theory, thinking/feeling, seemed to be less related to creativity than the others, probably because thinking-type and feeling-type seem to describe the content of one's mind and not the style of using it. That

is, one can focus attention on logic, criticism, or legalism and be considered a thinking-type or on human needs or emotions and be considered a feeling-type. Neither focus precludes one from or predisposes one to creativity.

Many researchers not included in the Myers-Briggs genre have also linked specific personality traits to high levels of creativity. Tolerance of ambiguity, emotional sensitivity (Roe), intuition, introversion, self-motivation (Roe, Amabile), non-conformity (Catel, Roe), autonomy, and spontaneity are commonly cited. Rogers, for instance, (1954) delineated three core characteristics of the creative individual. First, he believed a person must have an "openness to experience," a lack of defensiveness that makes all stimulus available to one's awareness and delays premature closure. This characteristic seems to echo Myers-Briggs trait of perceiving and Jung's views about openness (1971).

Second, Rogers cited an "internal locus of evaluation" (1954, p. 300) that occurs when an individual prefers to make judgments about his/her work according to internalized standards, desires, and emotional results rather than according to the external judgment of others. Rogers correlates internal locus of evaluation with highly creative people. Psychologist, Teresa Amabile (1987) has conducted studies that corroborate Rogers' view. Her studies compared the creative output of those who were offered attractive extrinsic rewards for their work to those who worked without imposed incentives. She found that extrinsic incentives tended to motivate only less creative

people to think creatively, to have no effect on the quality of the creative work, and to discourage creativity in highly creative individuals. It seems, therefore, that, as Rogers postulated, high creativity exists in people who possess and rely on internalized motivation and evaluation.

Third, Rogers believed that creativity is related to personalities that 'toy with elements and concepts.' This implies a lack of rigidity and a willingness to be spontaneous, to juxtapose, to hypothesize, to find the problematic, to be ridiculous, and to move ideas freely from one form to another. These mental activities are similar to Rogers' own concept of openness and to others' ideas regarding association and intuition.

2.8 Environment

In order for an individual to grow into a creative personality and/or self-actualizing person, it is believed that he/she needs to be raised in an environment that fosters creativity. Lowenfeld (1975) believed this to be an environment with minimal adult interference, because the interjection of adult ideas and critiques serves primarily to inhibit a child's creative growth. According to Lowenfeld, the best educational environments - and likely home environments - are ones that offer freedom to the thinking child. This would include flexibility in structure, time for unconscious work (which may seem like day dreaming), open-ended questioning techniques which allow

young people to explore their own ideas, and especially student-directed creative activities.

A 1973 study by Martindale suggests that creativity is inhibited by highly stimulating environments that produce high states of arousal. Therefore, loud noise, criticism, fear, and excess environmental activity interfere with a person's ability to engage in high levels of creativity.

Roger's list of traits of highly creative people implies that the best environment for creativity would be one that itself is open to experience, that encourages young people to self- assess and develop their own internal loci of evaluation, and that offers time and freedom to toy with ideas and materials. Rogers also emphasized psychological safety in which ridicule, punishment, and negative consequences of risk-taking are minimized. He accentuated the need for adults to be empathetic and to have an acceptance of the young person's unconditional worth (1954).

That personality, in general, is related to environment and upbringing is common wisdom. It was also the belief of scientist B. F. Skinner (1972), who believed that all human behavior is the result of operant conditioning. Creativity, according to Skinner, occurs because of a history of positive reinforcement directed toward someone who has been creative before. The implication is and that all people are equally capable of generating creative ideas but the difference lies in the fact that some are reinforced more

than others. "It is not some prior [creative] purpose, intention, or act of will which accounts for novel behavior; it is the 'contingencies of reinforcement'" (1972, p. 271).

However, recent research about separated identical twins suggests that personality may also be highly biological (Newman et al., 1965), initially determined by the brain's innate combinations of strengths and weakness. Therefore, a creative personality may be the external manifestation of a brain organized to specialize at holistic, divergent, imagistic thought patterns as its dominant right hemisphere interacts with other neurological areas of strength. Requisite environmental influences would enable the talented brain and its externalized personality to be actualized in the course of a lifetime. In other words, a combination of a particular type of brain and a particular type of environment may work together to produce what is commonly known as "creative talent."

2.9 Self-Actualization

Not all theorists see creativity as a function of specific talent. Humanist psychologist, Maslow (1968), identified creativity as an integral function of mentally healthy and well-developed personalities, of "positively healthy, highly evolved, and matured" people (Maslow, 1968, p. 86). Maslow called such individuals "self-actualizing." Contrary to popular beliefs at the time, Maslow questioned a previously

held belief in the correlation between mental health, genius, creativity, and productivity. He realized that mentally healthy, self-actualizing people can be quite creative in life choices but never produce highly significant creative products. By the same token, highly talented producers of art or other creative products, people such as Van Gogh and Wagner, are often far from mentally healthy. Maslow began to separate his thinking about creativity from dependence on product, also from the stereotypical fields of the arts, invention, and theory. Instead, he studied creativity in 'the ordinary affairs of life" (1968, p. 87). Maslow also realized that working successfully in one of the fields commonly stereotyped as creative, did not necessarily insure that an individual was creative. MacKinnon (Myers and McCaulley, 1985) shared this belief, as he compared 'less-creative' and 'highly-creative" people within such fields as art and architecture.

As a result of these new insights, Maslow coined the term "self-actualizing creativeness" to describe the creativity of self-actualizing people, differentiating it from "special talent creativeness" which must result in highly unique products. He spoke of self-actualizing creativity as a means to personal integration, because self-actualizing people are those most able to resolve dichotomies, live with ambiguity, tolerate disorder, and facilitate fusion between disparate possibilities- in other words to think associatively. In addition he saw creative, self-actualizing people as those who were less controlled and lacked fear of their own impulses, emotions, and thoughts (1968), characteristics which

echo Jung's theory of a permeable boundary to the unconscious mind. Maslow configured creativity as a human quality that results in a creative life, creative attitude, and creative person. The products of creativity were only 'epiphenomena' (1968, p. 91) emitted by the creativity personality and, therefore, not of primary concern. The self-actualizing, creative person, according to Maslow, is one who radiates creativity into all aspects of life.

2.10 Mental Illness

Unlike Maslow, Freud believed that mentally healthy adult humans usually do not "toy" with thoughts and engage in imaginative play; he thought the mental actions of creative individuals are much like those of the mentally unstable. That many renowned creative individuals have melodramatic histories of mental illness seems to reinforce his belief. Such historical figures as Van Gogh, Sylvia Plath, and Ernest Hemingway are among the most legendary of simultaneously mentally ill and creative people. As a result of a cultural mythology that associates high levels of creativity with mental illness, empirical study and intellectual theorizing have explored the possible association.

Two main tenets have been considered. One is that creative ideating is the manifestation of mental illness. The other is that suffering may predispose an individual to seek relief through creativity.

At the end of the 19th century, Lombrosco (1895) delineated a series of abnormalities, or "degenerations," which he believed to be common among both the highly creative and the insane. They included physical characteristics such as rickets and short stature as well as characteristics of the psyche. Precocity, for instance was considered a precursor of madness, according to a proverb Lombrosco quoted (1895, p. 83): "A man who has genius at five is mad at fifteen." More specific traits he linked to creativity and insanity were "unconsciousness and instinctiveness," somnambulism (subconscious or primary process state of mind), inspiration, paraesthesia (an exaggerated ability to concentrate), originality, and fondness for special words (1895, pp. 83, 84). While Lombrosco's thoughts seem naive to contemporary thinkers, belief in the basic association between mental illness and creativity continues to this day, though it is mediated by a sense that diversity of thought processes is not necessarily a sign of deviance nor pathology. In 1960, Otto Rank wrote that genius "in its endeavor to differentiate itself from the average has probably dramatized its pathological features" (1960). In his book, Creativity and Disease, Sandblom stated that, "neuroses and psychosomatic disorders are of special interest to us as they strongly influence or may even constitute the foundation of artistic creation" (1992, p. 61). He also remarked that artists have "sensitive dispositions" (1992, p. 61).

When creativity is associated with mental illness, the most common disturbances are mood disorders (depressive and bipolar disorders). Prentky (1989) compiled a table of eminent writers, artists, composers, and scientists who are "presumed" to have had mental disorders. Of the 121 names, 61 (50%) were thought to have affective disorders while only 37 (30%) were presumed to be schizophrenic, and 23 (19%) to have personality disorders. Andreasen studied 60 writers from the Writer's Workshop (1971, as cited in Glover, p.249) and found mood disorders among 80% of them. A study by Jamison (as cited in Prentky, 1988).) identified 38% of writers and artists included in his sample had sought treatment for mood disorders. These statistics are striking in that the rates in the general population at the time of the study were 1% for bipolar and 5% for unipolar disorders (Prentky. 1989).

Aside from these small studies, most of the literature about creativity and madness has been of the anecdotal variety. Intriguing stories proliferate, such as those of Van Gogh's rages, Schumann's delusions, Shelley's hallucinations, T.S. Eliot's nervous breakdown, Plath's and Hemingway's suicides, Munch's depression, and Proust's reclusiveness.

Though it seems that there may be a relationship between mental illness and creativity, there is no clear evidence of a cause and effect relationship. Sandblom sees mental illness not as a cause of creativity but merely as an antecedent condition, like

physical illness or family tragedy, that would encourage someone to use creativity as a coping mechanism. According to Sandblom (1992, p.25), composer, Mahler, believed that "the ultimate goal in art always is relief from suffering and the rising above it." Schopenauer saw a "positive value in pain because of the intensity of the sensation" (as cited in Sandblom, 1992 p. 25) and Kierkegaard described the poet as "an unhappy being whose heart is torn by secret sufferings, but whose lips are so strangely formed that when the sighs and the cries escape them, they sound like beautiful music" (Sandblom, 1992, p. 24).

Psychiatry and psychology are but a century old and have metamorphosed through many perspectives on mental illness. As of yet, only a few concrete physiological facts have been ascertained about the origin of mental illness. If, as current science tells us, mood disorders and schizophrenia are the result of imbalances in neurotransmitters and these imbalances can be triggered by traumatic life events, then what is the relationship between neuro-transmitters, trauma, and creativity? And what is the explanation for the hundreds of eminent creators who did not show evidence of mental illness, as well as those thousands of people suffering from a variety of mental instabilities who do not exhibit more than the average amount of creativity? Perhaps Barron's (1969b, p. 197 perspective will shed some light. He stated that creative individuals

> appear to be both sicker and healthier psychologically than people in general. Or, to put it another way, they are much more troubled psychologically, but they also have far greater resources with which to deal with their troubles. This jibes rather well with their social behavior, as a matter of fact. They are clearly effective people who handle themselves with pride and distinctiveness, but the face they turn to the world is sometimes one of pain, often of protest, sometimes of distance and withdrawal; and certainly they are emotional.

2.11 Novel Production

Maslow's theory that creativity is a state of the self-actualized mind and Sandblom and others who see it as a state of the unhealthy mind sit in contrast to those researchers who recognize creativity only in terms of novel products. Scientist Herbert Fox stated that the meaning of creativity exists only "in it's relation to the creative product" (1963, p. 140). Rogers believed an observable product is a necessity (1954, p. 296) as did Guilford who saw creativity as that which results in something novel (statistically infrequent) and useful (1950); he did, however, consider ideas to be products. May defined creativity as "bringing something new into being" (1975, p. 32). Jackson and Mednick asserted that "novelty was the primary criterion for creativity, and that the conjoining of creativity and novelty is ... deeply ingrained in our thinking" (1967, p.4). Gardner's discussions of creativity focused on those insights that cause major changes in whole domains of knowledge (1993). Gowan recognized (cultural)

creativity as that which "produces major discoveries and ideas that significantly add to and inevitably change the future of humankind" (198).

Recognizing creativity solely as the production of significant and highly original objects or theories, both Amabile and Gardner suggested that creativity is domain specific, signifying that creative talent in one area is not correlated with creativity in any other area nor in a generalized style of living. Because most individuals make culturally significant creative contributions in only one field, as Mozart was great only in music and Wright only in architecture, the implied conclusion is, according to Amabile and Gardner, that their creative talent existed only within the domains in which they succeeded.

If creativity is a manifestation of brain organization, then theories of domain-specificity would postulate that creative activity occurs only in specific parts of the brain, such the music part of the brain, or the language part of the brain, as Gardner's Frames of Mind and Creating Minds illustrated. His and Amabile's theories did not deal with creativity that produces less than dramatic and popular results. They, therefore, failed to recognize the roles of opportunity and excellence in production that are side-kicks of creativity and that lead to large-scale domain changes and paradigm shifts. In addition, their theories did not discuss "Renaissance men" who succeed in multiple domains, such as Da Vinci who excelled in painting and engineering or McCloskey who excelled in

both illustration and literature. Nor do Amabile's and Gardner's theories take into account pre-mastery level students who are engaged in profound decision making about which of their fields of interest and talent they will pursue. This author has worked with many young people torn between their multiple potentialities. Unfortunately these young people are required by contemporary life to choose only one field to pursue. They will most likely be able to gain mastery in only that one field and, therefore, to exhibit high levels of their creative talent in only that one field. Gardner and Amabile, looking retrospectively at these careers, would recognize only the successful creative endeavors in their final, chosen fields of expertise, not their previously budding creativity in many domains.

2.12 Process

Theories that emphasize product, tend to miss another important area of study: the creative process. Described eloquently by many renowned creators and scientifically by Wallas and others, the process seems to follow a rather consistent sequence of events. According to Wallas (1926), there are four stages. First, a person will engage in "preparation," which could be research and/or conscious attempts at problem solving. These attempts prove to be fruitless, as a creative solution can not be imposed consciously upon a problem. Next is the "incubation" stage. After much overt work to

create, an individual lets go, seemingly quitting the work at hand. During a walk, vacation, sleep, or what Eric Gnezda (1993 in Gnezda-Smith) calls a "fallow period," the brain unconsciously ponders the creative problem, making associations, patterns, and trial solutions. Wallas titles this stage, "incubation." When the problem is solved (or the idea conceived) the solution is presented to the conscious mind - crosses a threshold, as Jung termed it ñ in a way that causes a sense of sudden insight. This stage is labeled "illumination' and often called "inspiration." The final stage, also a conscious one, is that of verification. Fleshing out an idea, scientific testing, critically analyzing, or proof-reading and editing occur during the verification stage.

Many highly acclaimed creative people have discussed their own experiences with the creative process. The preparation stage was described by Poincare as the "preliminary conscious work" in his mathematical theorizing (as cited in Ghiselin, 1952, p. 41). He stated that "we think we have done no good because we have moved these elements a thousand different ways in seeking to assemble them and have found no satisfactory aggregate..."

Poincare continued, describing the second, incubation, stage of the process, "...but, after this shaking up imposed upon them by our will, these [elements] do not return to their primitive rest. They freely continue their dance" (as cited in Ghiselin, 1952, p. 41). Dorothy Canfield alluded to an incubation stage when she wrote, that she

was "swallowed in the usual, thousand home activities. But underneath all that, quite steadily my mind continued to work on the story..." Amy Lowell asserted that before poems "touch consciousness" they have already gone "a considerable distance along the road of evolution" (as cited in Ghiselin, 1952, p. 109). In addition she states that "no power will induce [a poem] if the subconscious is not ready; hence the sterile periods known to all poets" (as cited in Ghiselin, 1952, p. 109).

The third stage of the creative process, illumination, was described by Tchaikovsky as "a moment of ardor" (1924. P. 311) Sessions called it "intense," a "clearly envisioned impulse toward a certain goal," and a "flash of recognition that this was exactly what he wanted to do" (as cited in Ghiselin, 1952, p. 47). Canfield exclaimed, this "particular phase of the construction of the story came and went between two heart-beats" (as cited in Ghiselin, 1952, p. 170). Henri Moore experienced "unexplainable jumps in the process of thought..." (as cited in Ghiselin, 1952, p.77). Poincare said that ideas came to him with "brevity, suddenness, and immediate certainty" (as cited in Ghiselin, 1952, p. 37).

Stage four of the creative process is verification, another period of conscious work. Cocteau postulated a "moment when consciousness must take precedence over the unconscious and that it becomes necessary to find the means which permit the unformed work to take form" (as cited in Ghiselin, 1952, p.82). Canfield stated that after the story

has begun, it "begins to move more or less under my conscious control" (as cited in Ghiselin, 1952, p.169). For Tchaikovsky, the verification stage occurs when the music is "critically examined, improved, extended, or condensed" (1924, p. 311). Songwriter, Eric Gnezda (as cited in Gnezda-Smith, 1994), speaks metaphorically of a creative mountain that is presented to him by a "higher authority" and that he begins to climb enthusiastically. This seems to be the illumination stage of creativity. Then, he notices that the "higher authority," or God, seems to have deserted him. The rest of the trip up the mountain is difficult and frustrating. He describes this as the "human" work that it takes to finish. Scientists conduct experiments to verify their insights, authors rewrite their manuscripts, and artists engage in self-critiques, then rework their masterpieces. This, according to Wallas is the verification stage of creativity.

Wallas' preliminary approaches to the creative process have been revised and modified since their inception in 1926. Vinacke, for instance, (1952) proposed multiple incubations and illuminations, which would make considerable sense in the case of long-term projects. Rossman (1931) and Osborn (1953) pproposed a seven step processes. Ariete proposed a precurser stage, which he called "the endocept" (1976). It is a vague, unverbalized, emotional experience, which is the effect of repressed experience and occurs amorphously to the mind. In her interview with this author, Eve (Gnezda-Smith, 1994. P. 140) described her initial impulse to create as a "feeling [that] I need to sit down

and write." Canfield stated that the genesis of all her stories was a "generally intensified emotional sensibility" (as cited in Ghiselin, 1952, p.169).

Weisberg contradicted all theories of the creative process by denying that the creative process existed. He based his book, Creativity: Genius And Other Myths (1986) on a small study of people who attempted to solve a problem of arranging matchbooks, candles, and nails. The goal was to problem-solve by "thinking outside the box," and arrive at the discovery" Weisberg had predetermined would be correct. Weisberg then delineated the process of thought he perceived was occurring, one that did not seem to involve any unconscious work or sudden insights, only plodding, logical effort. However, since the objective of the observed behavior was not to generate a new work of art, theory, or science, nor to expand one's thought processes beyond established conceptions, one could argue that Weisberg had not presented his subjects with a creative task at all. He had asked them to do convergent, non-creative thinking that was focused toward a pre-planned end. Therefore, his conclusions are questionable.

Whether or not the creative process is linear and involves a finite number of stages, first-hand accounts by a variety of eminent creative people do describe similar experiences of fallowness and sudden revelation preceded and followed by periods of conscious effort. These personal accounts suggest a rather consistent combination of mental events that may be called the creative process.

2.13 Flow

As quoted earlier in this paper, Robert Grudin said that engagement in the creative process feels like "abandoning oneself to an irresistible flow" (1990, p.10). Six years later, Csikzsentmihalyi (1996) published a landmark book about creativity in which the main thesis proposed a state of mind he called, "flow." Mozart discussed "occasions when my ideas flow best" (as cited in Ghiselin, 1952, p. 44). "Flow" is a frequently used term to describe the mental-emotional state in the middle of the creative process when one's ideas seem to come effortlessly. Descriptions of the feelings associated with the state of flow are abundant in the literature and include such words as ecstasy and enthusiasm (Gnezda-Smith, 1993), exhilaration, excitement (Csikzsentmihalyi, 1996), (Ghiselin, 1952), fun, joy (Csikzsentmihalyi, 1996), thrill (as cited in Ghiselin, 1952), trance, altered state of consciousness (Gnezda-Smith, 1994, Glover, 1989), delight (Mozart, as cited in Ghiselin, 1952), intensity (Sessions as cited in Ghiselin, 1952), pleasure (Arieti, 1976), and enrapture (Csikzsenmihalyi, 1996).

According to Csikszentmahalyi, flow is a state of deep concentration and full engagement in an activity; it is accompanied by feelings of pleasure. Those "in flow" tend to experience a sense of being unconscious of their actions at the time they are creating. Ghiselin said that during creativity people transcend consciousness. He, like

Grudin (1990), told how, in the midst of creativity, people subordinate or surrender self to the creative energy at hand. Even the term somnambulism, has been applied to the flow experience of creativity (Glover, 1989), as meaning that creativity often occurs in "an almost dream-like state" (Glover, p. 217). In describing her creative process, Lowell referred to concentration that is "in the nature of a trance" (as cited in Ghiselin, 1952, p. 111). Ghiselin also used the term trance (1952). Csikszentmahalyi expanded the definition to include a merging of action and awareness in focused concentration. During the flow experience, he suggested, individuals are relieved of fear of failure, depression, and anxiety. They lose awareness of time, their environment, body sensations such as hunger, and a sense of the normal boundaries of the ego (Csikszentmahalyi, 1996). In addition, the work of recording or developing one's creative insight progresses at a smooth, flowing, quickened pace that makes the work seem easy. Picasso described the phenomenon as "mobility of thought" (as cited in Ghiselin, 1052 p. 57). Canfield (as cited in Ghiselin, 1952, p. 170), described one of her flow experiences:

> I came home sinfully blind and deaf to the beauty that had so moved me an hour ago. I was too busy now to notice anything outside the rapid activity going on inside my head. My mind was working with a swiftness and a coolness which I am somewhat ashamed to mention, and my emotions were calmed, relaxed, let down from the tension of the last few days and last few moments.

The affect of the flow experience is one of pleasure. Arieti equated it with Maslow's concept of peak experience, stating that the creative individual feels "almost as if he has touched the universal" (1976, p.186). Csikszentmahalyi (1996) used the word, autotelic, to indicate that flow experiences are so pleasurable they become the reason for work; even the consequence of a completed project or extrinsic reward at the end of the creative process is less motivating. He suggested further that some humans "must have developed a nervous system in which discovery stimulates the pleasure center in the brain" (Csikszentmahalyi, 1996, p.109).

The type of pleasure that accompanies the flow stages of the creative process is an aesthetic one. That artists, dancers, actors, and writers experience aesthetic pleasure may be easy to accept. However, the literature frequently refers to aesthetic pleasure in mathematics and science. Csikszentmahalyi referred to scientific and mathematical work that is "mesmerizingly beautiful" and that produces exhilaration in the pursuit of truth and beauty (Csikszentmahalyi, 1996, pp. 122, 125). May discussed the "elegance" in scientific theory (1975, p. 138). Poincare saw aesthetics, a harmony of numbers, and beauty in mathematics (as cited in Ghiselin, 1952, p. 40).

Profound engagement in creative work in both the arts and sciences results in a motivating and rewarding aesthetic pleasure. Arieti stated that "the experience of aesthetic insight – that is of creating an aesthetic unity – is a strong emotional experience" (1976, p.186). An artist included in this author's 1994 study said that "when something [creative} goes right...ooo, yeah...my heart starts to flutter" (Gnezda-Smith, 1994, p. 141).

2.14 Chain of Knowledge

The study of creativity and, in fact, the concept of creativity, itself, are phenomena unique to Western culture. Ancient and tribal people concerned themselves with the spiritual and utilitarian aspects of their creations, accepting as natural the ability to create or attributing it to their gods. Western culture, however, has been on a path away from tribal existence and toward positivist science, a path that severed observable knowledge from affective and spiritual experience. Creativity has been repeatedly explored and interpreted throughout the history of Western culture. Earliest European discourse about creativity explained it by attributing it to muses. It was the sacred breath of God – inspiration – that gave ideas to the ancient Greek creators. Later, during the Enlightenment, science was established as the true path to knowledge so that by the nineteenth century, science was being applied to the discourse about creativity. Scientific

inquiry found creativity in heredity, then psychology. The unconscious replaced muses as the source of inspiration. Some individuals were more adept at creative inspiration than others and labeled talented and geniuses. Scientists also found correlations between creativity and mental illness as well as between creativity and highly developed mental health. Late twentieth century neuro-scientists began to search for evidence of creativity in brain function, conceiving of creativity as a cognitive act. European-American society valued creativity because it brought about scientific discoveries and innovations of new, marketable products. As a result, creativity was found, no longer in God or the human psyche, but in the products of creativity. Study was also conducted regarding the creative process, in order to describe it in a concise, repeatable order. As well, scholars have sought to examine the human experience of creativity, collecting first-hand accounts of the feelings commonly associated with creativity and coining terms for the experience. Enthusiasm, exhilaration, illumination, flow lead us back to the beginning. Creativity happens, and whether through cognition, affect, specific process, or natural personal development, it still feels like the breath of God. It is still a "Magic Synthesis" (Arieti, 1976).

CHAPTER 3

POSTMODERNISM

To one growing up in The United States in the 1950's, knowledge was a static set of factually substantiated beliefs. It was scientific and/or historical, was determined by experts, and was true. Knowledge was arrived at by scientific experimentation and historic or artistic discovery. New knowledge was available and, if derived by acceptable means, could replace older, disproven knowledge.

After the political upheaval and social restructuring of the 1960's, a change of consciousness has developed in scholarly realms and a questioning of beliefs has occurred in the general population. These new beliefs and perspectives on knowledge have been termed "Post Modernism." Post Modernism may be a brand new cultural era or just the last gasps of dying Modernism. Either way, few scholars and philosophers deny that change has occurred (Natoli and Hutcheon, p.1).

Post Modernism is difficult to define, as it is based on doubting any generalized definition or belief. It calls into question all attempts at coronating a belief or valuing an author as more correct or more valid than another. As a result, it sees itself as indefinite,

forever self-scrutinizing, and, as Natoli and Hutcheon say, "shape shifting" (p. vii). Nevertheless, Postmodernism does seem to have some rather clear tenets that can be explored.

First and foremost it is a reaction to Modernism, "operating at the limits of Modernism" (Sherman, date, p. 1) and "in the ruins [of Modernism's] once secure cultural monuments (Taylor, p.27). So, in this paper the first step in understanding Postmodernism, will be to develop an understanding of Modernism and it's cultural monuments.

Modernism harkened back to the Enlightenment, a period of Western culture that established secularized reason as the means of valid thought. Primary philosophies of the Enlightenment (Macropeadia, vol. 18, p. 755 – 7) that had major influence on Twentieth Century thought included

- **Science** - methodologies for developing rational thought and testing the validity of knowledge, (Descartes, Bacon)
- **Progress** - a linear view of history, based on the belief that humanity is developing toward perfection (Bacon)
- **Mind-body split** - a severing of science from theology, mind from body, reason from intuition (Descartes)
- **Individuality and democracy** - the belief that human beings can self-govern and, therefore, have the right to do so (Locke).

Clearly, the thinkers of the Enlightenment and those of subsequent Modern society valued rationality, science, progress, and individuality.

As the twentieth century approached and developed, these beliefs became entrenched in the consciousness of Western culture. Rationality was the basic value, ennobling logical, linear, sequential thought. Empirical science was the most respected authority for establishing knowledge. According to Silverman (p.4), Modernists believed that one could reshape and control the world through science.

Statistics was the ultimate validation of ideas. What could be quantified could be proven to be true. Standardized tests flooded the schools and pollsters took over politics. Written language (Natoli and Hutcheon, p.4) was the trusted communicator. History was true because experts had written and published it in scholarly books. Oral histories and personal stories, especially those of the disenfranchised and illiterate, were considered to be only hearsay.

Underlying the Modernist mode of knowing was the unquestioned belief that truth existed and was waiting to be discovered. In art, science, and industry discovery was, according to the paradigm, accomplished by geniuses - individuals endowed with special, cognitive gifts. Such people were born geniuses and had lives that developed in specific ways to get them to their extraordinary, creative moments. The magnitude of their genius was determined by the novelty/originality of their discoveries/inventions/art and the

amount of progress their ideas initiated (Ludwig, 101-125). Progress was believed to be an autonomous force for good, bringing civilization from its immature, primitive past into a superior, technologically advanced future. Geniuses were the leaders.

As with other disciplines, the value of art was determined by its progressiveness. The highest level of art was the avant-guard, which "pushed society forward and was ahead of and separate from the masses" (NAEA National Conference, 1999). Art was positioned separately from its cultural context and judged according to a set of formalist criteria and from one cultural aesthetic. Hierarchies of art were established. There was "high art," that which was found in galleries and that only educated, "cultured" people could access and appreciate. There was also "camp," "kitsch," folk (unschooled) art, and the "quaint" art of historic Americana and Native Americans. These types were lower forms of art, associated with people of lower education, lower socio-economic level, non-white ethnicity, and less refined taste. Needlework, and other traditionally female art forms were relegated to a position of craft which was considered to be not exactly art.

Modern society appeared to be rather homogenous in its cultural make-up and system of beliefs. Members of society were provided with a unifying sense of direction (NAEA National Conference, 1999) by the "grand narratives" of genius, progress and evolutionarily determined cultural superiority. Also named "metanarratives" by philosopher Lyotard (Natoli and Hutcheson, p. x), they were supposedly universal and

eternal principles of human nature (Natoli and Hutcheon, p. x) and were applied to all who participated in society regardless of personal or cultural context.

The voice of these grand narratives was white and male. People of color and Native Americans, whose modes of knowing and relating information were often different than the rational, statistical modes and sophisticated English of the dominant white males, were stereotyped or ignored. Women were usually non-represented as well. Minority peoples were expected to assimilate into the dominant culture and to assume the styles, values, and roles ascribed to them by mainstream society. As a result, knowledge and truth was what the dominant culture believed them to be.

Because Modernity was guided by a clear schema for producing and validating knowledge/beliefs, it produced a dualistic view of the world: Knowledge was either true or false; science proved ideas correct or incorrect; art was original or it was not good art; one participated in the American dream or he did not.

As in most cultures, the generalized belief system around which Modern society functioned was assumed and not openly scrutinized or critiqued. It was simply believed. Therefore, Modernist truth had 'closure, unity, order, the absolute, and the rational" (Natolit and Hutcheon, p. ix).

During the late 1960's and early 1970's, the Civil Rights movement, American Indian movement, Women's Liberation movement, and Gay Rights movement became

prominent. As a result, American vision began to include the perspectives of a multiplicity of peoples. Live television broadcasts of international events and images of the earth from outer space caused a globalization of consciousness. Society was no longer seeing a white, male world or one that made sense in the traditional ways. This "discovery of the world, 'the other,' is what has created Postmodernism" (Sahasrabudhe, 1999).

First European, then American scholars began to realize that their cultural truths, the foundational belief systems by which their societies had lived for a century or more, were invalid. "Words and things had come unstuck" (O'Neill p.76). Life appeared to be "beyond belief as we had known it" (Anderson p.26).

Derrida called this philosophical "event" a "rupture" (1970, pp. 224, 225). To him it was the end of structure and the decentering of thought. He called for an expose of literature that would take apart language (deconstruct it) to illuminate the "lag" he thought inherent in all verbal expressions. This lag always existed between the signifier (word) and that which is signified (the ideas or thing). Language and experience are never synonomous; there is always a gap between word and meaning, according to Derrida (Spretnak, p. 234). Nor did he believe that meaning and consciousness are autonomous and waiting to be discovered. They are created by language and all language is affected by its socio-cultural context. Therefore, he believed, language is

indeterminant and meaning is only temporary and relative. According to Derrida, there is no universal meaning that can apply to all people in all situations. There is no right meaning. There is no overarching philosophy around which all people can seek to pattern their lives. Derrida's new form of reading destroyed the potential of language to express absolutes, because language does not accurately express external knowledge, it always creates knowledge. "Language invaded the universal problematic" (1970, p. 225) and "everything became discourse" (1970, p.225).

Lyotard also recognized the Postmodern, socio-philosophical event/rupture, calling it a "crisis of narratives" (1979, p. 71). He discussed scientific and narrative knowledge, describing scientific knowledge as a system of arguments and proofs that is focused on self-legitimation. Narrative knowledge, he said, is the primary form of popular knowledge and recounts heroes' undertakings in order to legitimate social institutions, to define criteria of competence, and to evaluate people and their performances within the social expectations. Narratives give a culture standard meanings. (Science often slips into narratives as it presents itself to the public and generalizes its knowledge beyond the specificity of its experimental context). The validity of one form of knowledge can not be judged in terms of the other. Therefore, "all we can do is gaze in wonderment at the diversity of discursive species" (1979, p. 83). The result of the multiplicity of discursive species, or knowledges, that abound in the world, is a loss of central meaning.

Lyotard was suspicious of metanarratives, "since all assertions of truth...are merely socially produced" (Spretnak, p. 235). He also distrusted science, which demeans narrative knowledge and sets up a system of homologia, or concensus, resulting in "cultural imperialism" (Spretnak, p. 235). The result of realizing that all knowledge is social discourse with no essential, autonomous truth/meaning inside it, is a crisis in the "condition of knowledge" (1979, p.71).

Foucault, the third major voice at the beginning of Postmodernism, distrusted all "truths" because he believed that all interactions are expressions of power relationships (Spretnak, p. 236). Power in institutions is a manifestation of the power that is always active in human inter-relations, " a complex strategical situation in a ...society" (1976, p. 335). Therefore, all knowledge must be dealt with via discourse about the power relationships that engendered the belief systems.

As Postmodern theory crossed the Atlantic and began to permeate American scholarly culture – and appear in its raw form in popular culture – all beliefs, especially those of Modernism, were up for grabs. During the discourse that has ensued/is ensuing, many new views accumulated. These include:

- All humans live in a pluralistic civilization that they must recognize and participate in it. There is no choice (Freedman, et al, 1999).

- Therefore, there is a multiplicity of voices and truths that can exist simultaneously. Previously marginalized and excluded peoples are now included. All races, ethnicities, genders, sexual orientations, classes, cultures, societies, and sub-cultures are included in the discourse. Modes of knowing other than scientific/logical are given credibility as valid reflections of valid experience. Examples are oral histories and personal stories.

- History is a social construction that can never be accurately re-collected or re-membered (Taylor, p. 15). Historical knowledge always contains issues of power relationships.

- Language is a social construction. It does not record experience, it shapes and creates it (Freedman, et al, 1999). Words (as well as images and music) are metaphors for reality. Focus is on interpretation and negotiation of meaning (Sahasrabudhe, 1999). Symbols have the potential to create the illusion of meaning where nothing really exists, to be "free-floating ... and rooted in nothing: (Anderson, p. 165).

- Meaning in language/literature/art, is a joint construction by artist/writer and reader/viewer. There is no meaning waiting to be figured out. Meanings are instead always shifting and ambiguous (Sahasrabudhe, 1999).

- The reader/viewers and language/art-makers are not individuals but members of a community and, as such, construct reality consistent with predispositions inherent in that community (Fish as cited in Anderson, 1990). Examples of predispositions are values, understandings, and norms.

- Everything exists within its context and can not be understood outside of its context. All ideas and things are contingent (Bauman, 1969).

- Individuals are interactions of language, culture, and the "unconscious" (Sahasrabudhe, 1999. p. 8). There are no individuals and no authors. There can be no creativity because creativity requires an autonomous, individual creator (perhaps a genius) from whom something new originates.

- Literary and artistic ideas are contingent, not original and are the result of cultural influences, collaborative work, and the interaction of multiplicities of ideas.

- Artists are but collagists who find and arrange "fragments of meaning" (R. Clark, 1998, p. 9). As such, they are "bricoleurs" (Derrida, 1970. p. 231). Accumulations of ready-made objects, naturally made objects, and/or popular images (Polaroids, body substances, and images by the "masters," for example) are common elements of Postmodern art.

- When nothing is original, then everything is secondary and something is always missing. There is a sense that everything is lacking (Taylor, 1990).

- This sense of loss results in irony. Seeing through older realities and around the edges of what used to be truth, causes Postmodernists to see humor in older, Modern standards/images/styles/beliefs.

- Because everything has been de-legitimized, there has been a loss of innocence (Jencks, 1986).

In this atmosphere of "disbelief in belief" (Anderson p. 253), the guiding Modernist philosophies of 1) the superiority of science, 2) progress as benevolent and unstoppable, 3) mind/body separation, 4)rugged individualism, and 5) creativity as genius and originality seem transparent and wobbling. As Nietszche had spoken of self-overcoming (In Scott, 1990), Postmodernists began to see the society's world-view merely as a limited, modernist hegemony. They have seen the boundaries of Western

belief and, though they are not sure what lies outside of those boundaries, they can no longer pretend that the boundaries do not exist. Modernism, it turns out, was no more than one cultural belief system in a world of belief systems.

CHAPTER 4

A POST-MODERN CRITIQUE OF CREATIVITY THEORY

A careful exploration/expose of the literature and theories of creativity is in order. Postmodernists would expect such a deconstruction to reveal biases, omissions, generalizations, and stereotypes, those characteristics found in all metanarratives. Are such difficulties inherent in the literature and theories of creativity, as well? To answer this question,the following chapter will undertake a deconstruction of creativity theory and literature. The primary tenets of creativity theory that will be explored here include:

- product, novelty, originality
- talent, genius, greatness
- divergence
- cognitive style, personality type
- the creative process.

Each of these tenets will be analyzed with reference to three modernist structures of thought: constructivism, empiricism, and ethno/gender-centrism. Thus, a postmodern critique of creativity theory will develop.

4.1 Product, Novelty, Originality

To modern society, the term creativity usually signified the making of new things or discoveries. The proof of creativity was witnessed in the product. Highly creative products were those that were the most original and novel and, that contributed the most to society's forward progress. Gardner used the terms "break-through," which implies novelty, and "domain-changing," which implies progress (1993). Jackson and Messick (1967) and others cautioned that too much novelty was not consistent with creativity. The implication here was that ideas that strayed too far away from the mainstream were odd or peculiar and did nothing to advance society. Martindale stated, "to be counted as creative, it is not enough that an idea be original... [it] must be useful or appropriate for the situation in which it occurs, and it must actually be put to some use" (in Glover, p. 11). Realizing that many creative ideas are not appreciated during the creators' lifetimes, Gardner dealt with the problem of usefulness by stating that, "no time limit is assumed here; a product may be recognized as creative immediately - or not for a century or even for a millennium." The implications of this statement are that to be creative, a product must at least eventually have social value and contribute to progress, even though society may not recognize that it does at the time it is created and, conversely, products that are never accepted by society have very little creativity. A conclusion (knowledge

construction) which results from envisioning creativity as a novel product is that, somehow, each original product owns the creativity and carries it around until the specific time that society catches up with and appreciates its creative value. Though it is common wisdom as well as scientific theory to equate creativity with novel/original products, there are many problems with this concept.

4.1.1 Analysis of Knowledge Construction

From a constructivist perspective, defining creativity as the making of novel products presents problems with validity, omissions of groups of people, stereotypes, and the reification of insights into universal "truths."

First, the concept of novelty is internally invalid because novelty can never really be determined. It is not an objective characteristic unaffected by an observer's biases. Instead, it is always contingent and exists only in comparison to the history of an individual's personal and society's collective experiences. An object or idea seems new when it does not belong to a set of previously considered images or knowledge. What may seem novel to an individual in one culture or milieu may be ordinary and common to people in other cultures and milieus. The wider a person's range of experience, the less likely he/she might be to find something novel. Therefore, novelty is only an illusion based on each observer's individual and cultural experiences.

"Originality," is used synonymously with "novelty." Originality is based on the word "origin," which could suggest significant reference to the place, person, or process from which creativity emanated. However, "origin" in "originality" is commonly used to signify 'the first one," i.e. the novel product. Therefore, originality, too, is an invalid concept.

A second problem arises when creativity is called novelty and is used to validate only those objects and discoveries that serve public desires and stereotypes (are appropriate and useful). The objects/ideas are elevated and honored while the people and the human experiences of creativity tend to be stereotyped or ignored. The human beings who make the objects and discoveries tend, themselves, to be seen as novelties - objects of public curiosity - rather than human beings engaged in complex intellectual, emotional, and social interactions. They either become heroes or are pushed to the fringe of society. For instance, Albert Einstein is commonly viewed as an intellectual hero and has become a common pop image on posters and greeting cards. Andy Warhol has become a cult hero revered primarily for his "freak-show" appeal, perpetuating the stereotype of artist as deviant. The unschooled, unknown, or socially unacceptable creators who because of race, economic status, gender, or lack of self-promotion have not achieved social acclaim or monetary compensation for their creative work have (until

very recently) simply been omitted from the social and scientific dialogue about creativity.

When the novelty and social viability (usefulness) of a product are the primary determiners of creativity, then the existence of creativity (of even those individuals who are successful) becomes contingent upon continued creation of novel and useful results. One is not free to continue redundant work even if it brings aesthetic and scientific pleasure, but to constantly push the limits and 'discover" new and more cutting edge insights. By definition, then, when one stops producing novel objects (or starts producing socially unacceptable ones such as the elderly Picasso making erotic sketches), he/she also stops being creative.

A third problem exists in the concept of creativity as novel product. Placing high value on the novelty of concepts, technologies, styles, and objects encourages society to reify them, to make them into institutions. The act of reification establishes concepts, discoveries, styles, and objects as "true" and "good." Truth and goodness, as the postmodernists have pointed out, are only illusions. Nonetheless, society tends to honor new and reject previous (or culturally diverse) knowledge or styles as invalid, old fashioned, or primitive. In the dualistic Euro-American society, choices are always being made as to which concept is the best or most correct. As a result, being "cutting edge" or "avant-guard" becomes the standard to which all creativity is directed. Being "passe" is

the kiss of death. Creative production that occurs for reasons other than the development of new ideas and forms or that conforms to styles and beliefs of the past may not be considered creativity at all.

4.1.2 Analysis of Empiricism

The primary paradigms of creativity theory in contemporary society have been determined through empirical science. A vast array of experiments has been conducted in order to "discover" what creativity is and how creativity occurs. However, there are many limitations to empirical science that affect the validity of science's understanding of creativity.

By its own requirements, empirical science must limit variables in an experiment. Therefore, creativity has been studied in order to find a single, central factor that is responsible for novel products. For instance, Mednick tested for and identified mental association as the intellectual act most responsible for creativity. The structure of empirical science did not allow him, and others, to search for interactions of multiple factors – intellectual, affective, psychological, social, cultural – which may combine to invoke the creation of novel products. Postmodernists would argue against the positivist science approach believing that there can be no central, primary, or generalized

explanation of anything, including creativity; human acts are always the result of interactions of multiple influences.

Empirical science also assumes cause and effect relationships. Once certain factors were identified as important to creativity, assumptions were made that they were the cause of creativity. Divergent thinking was one such factor. In his structure of the intellect model, Guilford posited that of all intellectual acts, divergent thinking was the one necessary to the creation of original products. Based on this idea, one might assume that all people who are divergent thinkers (cause) are highly creative and make novel discoveries or objects (effect), while all people who are convergent thinkers are uncreative and do not make novel discoveries and objects. Neither of these generalizations seem to be evidenced in real life creativity.

A third weakness of empirical science's attempts at explaining creativity is that experiments are most frequently conducted in unnatural settings: laboratories or schools. Creators of new ideas and objects usually work in private or with teams of other creative producers, as well as in stimulating environments such as art studios, or during unrelated activities such as when Poincare took a walk. Laboratory environments and situations are artificial and may, therefore, affect the validity of the research. For example, creativity testing of children in school classrooms, as is often practiced, can produce inaccurate

results simply because of some students' (often the divergent thinkers!) negative attitudes toward school.

Creativity, as manifested in highly original discoveries, ideas, and art objects occurs over lengthy periods of time within a variety of settings, and throughout a complex interaction of activities. A tightly structured, short-term experiment in a scientific or group setting may not be at all able to reconstruct an environment consistent with true creative production.

Also of concern is the fact that much empirical research about creativity used originality (novelty) as both the antecedent and the result. Because the culture assumes that production of original products is the defining characteristic of creativity, researchers selected subjects who had histories of original production. Is it surprising, then, that the results described creative people as independent and non-conforming, characteristics of original lifestyles? In other words, people with histories of being original were found to be original. In MacKinnon's IPAR studies he recruited subjects who were deemed highly creative by their professional peers. Though MacKinnon, himself, did not blatantly state that those recommended for his study must be producers of novel products, it can be assumed that the peer groups who selected the subjects were themselves operating under the cultural belief system that equates creativity with novel production. Instead of

revealing essential information about creativity, such studies, perhaps, tell only that people who make original products live original lives.

Research on creativity has omitted from consideration many groups of people. Since subjects for creativity studies were usually selected from professional and college groups, the subjects tended to be only those who had already been successful in their fields and as participants in mainstream culture. Therefore, creativity researchers were really studying people who "played the game" well enough to operate within normal professional channels and yet made products that were unusual enough to seem rare or unique without being too unusual. Not included in studies were potentially high-creative members of marginalized populations who may have held different definitions of creativity and/or were not participating in mainstream educational and professional fields. Therefore, studies of creativity based on novelty/originality might have been invalid due to too limited a research population.

Another problem with empiricism's attempts to explain creativity lies in the misunderstanding by some scientists of the nature of creative/novel responses. Both Mednick and Weisberg committed this error. In his Remote Association Test, Mednick specified which answers were acceptable. Asked to make an association between three seemingly unrelated words, subjects were expected to think of the same association that Mednick had, himself, already devised. Other responses, original but either more

divergent or more personalized than Mednick's, were scored as incorrect, i.e. not creative. In his study, Weisberg also prescribed specific answers that he expected his subjects to produce via "creative" problem solving. Neither he nor Mednick recognized that they were asking subjects not for divergent and creative ideas, but convergent ideas that grew toward one, definitive answer.

Another concern regarding scientific research about creativity relates to the fact that much of the theory about creativity was developed from case studies of eminent creators of the past. These case studies are rich with stimulating descriptions of emotions and actions that accompanied the development of "great" theories, inventions, and art. Within scientific realms, however, self-reports are considered to be unreliable. Creativity theorists have embraced them, however, while attempting to back them up with experimental data. An additional problem with case studies exists. The descriptions offered in these self-reports often touched on non-scientific metaphorical, mystical, spiritual, or cosmological. The experience of creativity, even though it results in concrete products, is ladened with feelings and intangible phenomena. Though many scientists seem willing to grant at least partial acceptance to self-reports, positivist science remains unequipped to explain, recognize, or accept the metaphysical descriptions that fill self-reports of creativity.

While empirical science is convincing in its ability to predict certain cause and effect relationships within limited environments and under limited situations, it is, perhaps, an inappropriate means of coming to an understanding of creativity. Because creativity may be significantly affected by environment, may involve metaphysical phenomena, and may be occurring in populations that are excluded from study, science has presented only a limited, and insufficient view of creativity.

4.1.3 Analysis Of Socio-Cultual Factors

The concept of creativity as the making of novel, socially useful products is deeply tainted by ethnocentric bias. It is clearly a social construction by a culture that is commerce-driven and hierarchical. When creativity is identified and quantified by how successful, useful, or progressive its products are, society validates only those "creators" who have risen to a recognizable position of status within the society. In other words, only those socially acceptable individuals whose creations are deemed new and marketable will be publicly recognized and compensated. Business values novelty but eliminates from considerations novel ideas for which the marketplace is not ready. Literary publishers select only what is marketable and what they have the capability to print. Science and medicine value new knowledge that advances progress or produces new products for sale. The fine arts are scrutinized by curators who regularly look for

avant-guard works that will attract attention and bring audiences to their galleries/concert halls.

In addition to controls by the marketplace, creativity, as defined by original products, is controlled by professional, elite judges called critics, editors, scholars, dealers, historians, and experts. In the process of deciding which creative objects or ideas are either artistic or "true," these experts assure a place for themselves in their professions and participate in a system that establishes hierarchical value to creative works. The more novel and "cutting edge" the more difficult to understand, therefore, only those people with sophisticated knowledge of science, language, and art are able to appreciate them. A caste system of high art, science, and invention is established. Individuals with less capacity to understand complex language and science, with faith in folk medicines, and/or with differing aesthetic tastes are considered less intellectual, less "cultured," and lower class. This elitism has its economic advantages. When art, science, and invention are valued according to elitist standards, then the quantity of acceptable creative products is limited. Scarcity is created. The desire to be "upscale" or "high brow" in one's tastes and possessions creates demand for unique, socially elevated products and drives up prices. It is advantageous to the marketplace to value only those creations that are highly original and, therefore, rare. The definition of creativity as novel

production is clearly an Euro-American concept that serves the needs and values of traditional, Westernized, capitalistic societies.

The influence of cultural, gender, ethnic, and racial bias in current creativity theory should be of major concern. The Western perspective viewed creative production as free-standing and isolated from the context of its creation. Researchers, then, generalized a view of creativity to all cultural contexts/people, and they were blind to creativity that may have manifested differently than the white-male norm. The assumption was made that all peoples in the world are or should be pushing boundaries and seeking originality in their creations. They were also expected to assimilate their aesthetics, their focus, and the objects of their creativity into the taste and needs of the Euro-American mainstream. In Western culture, good art was found in galleries and museums, good music was classical and performed in elegant, classy auditoriums and halls, great scientific discoveries were made by men from well-reputed universities or successful industries, knowledge was true if published in refereed journals or by well-known publishers.

Other works, assumed less creative, were accomplished in homes, institutions, reservations, back alleys, and garages. Because they were not made by people who had proven themselves in socially esteemed settings, they were excluded from public value and the study of creativity.

Members of and indigenous and pre-imperialistic societies were excluded from creativity studies. Such peoples often did not seek novelty in their art and technology. Art forms such as masks, figures, and pottery, for example, were produced according to traditional stylistic codes. Generation after generation produced like images. This redundant style of imagery served to communicate to and unify the people of a society. The uniqueness of the objects was not considered important. Euro-American culture that identifies only continually original and progressive styles as creative has trouble recognizing creativity that may manifest differently in other cultures. Scholar and creativity expert, Andrea Shlindler (1996) exemplified this problem when she described some non-western cultures as "less creative cultures." Her comment is based strictly on the concept of creativity as novelty and, unfortunately, smacks of a sense of ethnocentric superiority.

Women in art and science were equally omitted from recognition. Throughout history women have created complex and aesthetic household objects such as lace, quilts, pottery, and fabrics. While production of these items in many cases required profound creative engagement, they were not considered to be art. Until the 1970's only a few female artists' names were included in art history books. As female artists were not taken seriously because of their gender and the female-oriented subject matter and style of their work, neither were female scientists and inventors. Women were creators of a variety of

inventions, inventions later attributed to male innovators. Women collaborated on many discoveries but were not permitted to receive credit. (Vare & Ptacek, 1988).

Why were women's creative contributions systematically omitted from the history of creativity in Western culture? A combination of factors existed. For one, the leaders in the creative fields were men. Men worked at universities, in science laboratories, in industry. Men were bosses, chair*men*, and critics. Men's tastes, needs, camaraderie, and competitive urges set the standards for social usefulness, novelty, greatness, and, therefore, creativity.

A second reason that women's creativity was omitted from the cultural perspective was that until well into the Twentieth Century, American women were prohibited by law from having their names on legal documents other than birth, death, and marriage certificates. The law made it impossible for women to claim official credit, authorship, or patents for their creative work (Vare & Ptacek, 1988).

Another reason women's creativity had been so long devalued is that the cultural definition of success – individuation – is a characteristic of the male maturation process (Gilligan, 1982). To individuate is to progress professionally and personally in ways that establish oneself as a unique human being. "Rugged individualism," raising oneself "by one's bootstraps," and "the strong and silent type" were all admired characteristics of successful men and are descriptions of individuation. Women, however, developed

differently. According the Gilligan (1982), women matured by developing relationships. They collaborated with friends, maintained marriages, raised children, and cared for the elderly. Their professional work, too, was collaborative and relational: teaching, nursing, homemaking, and secretarial work are supportive and affiliative types of work. In order to fit into society and to meet care-giving responsibilities, woman were usually disinterested in or unable to devote the enormous time and attention necessary for "domain-changing" creativity or to fight the male-dominated system.

Creative works by non-white, poor, and other marginalized individuals in the United States were ignored or demeaned by the dominant culture, as well. In order to have one's work recognized and valued by society, one needed to be participants in his/her educational and professional fields of interest. People of color (as well as) were excluded from colleges and high level jobs. It was difficult if not impossible for them to join the fields of study, to establish the professional relationships, and gain the status necessary to have their innovations appreciated. Overt discrimination was common in modern society.

Covert discrimination was also a deleterious factor. Highly developed skills such as refined writing, elite scientific research methodology, coded/jargon-specific language, and esoteric aesthetic tastes were necessary to success in any field. That poor, less-educated people, and people of color were unable to participate in these fields meant that

their creative works were ignored and, as Shindler might argue, considered less creative. The fact that works by non-mainstream creators appeared in unorthodox or "low class" settings, also made them invisible to the dominant culture. Graffiti, folk medicine, and storytelling, for instance, thrived in poor, black neighborhoods and Indian reservations. Instead of being valued as forms of art, science, and history, these creative products were considered vandalism, ignorance, and hearsay by the dominant culture.

Creativity was ignored in other non-traditional settings, as well. For instance, art-making was and is a common activity in schools, prisons, and mental hospitals. Yet, the creativity of these works were rarely exhibited or the aesthetics studied by curators and scholars.

The modernist assertion that creativity must involve a creative product caused other omissions. Because creativity was associated primarily with the arts, science, and invention – fields that produce concrete, marketable objects – many researchers did not focus on creativity that occured for purposes other than production. Creativity used for healing (physical or psychological therapies), spiritual enlightenment, ritual practice, personal communications, and storytelling are examples. Most likely because these forms of creativity do not result in commodities like art, medicines, and books, society has failed to pay attention to them. As a result, researchers have also failed to pay

attention, instead directing their focus to the concrete results of the creativity, the novel product.

4.1.4 Summary

When experts based their theories of creativity on the concept of original production, they engaged in socio-cultural ethnocentrism, omitted many creative styles/objects/ideas from consideration, and perpetuated belief in a concept of novelty that can not exist. The metanarrative that creativity is "bringing something new into being" (May) it turns out, is simply a Modernist belief that is rendered invalid by its own biases and omissions. Consequences of such a metanarrative are that 1) creativity becomes separated from daily life and common people; 2) expressions of creativity are made less accessible to average people; 3) aesthetic, useful but redundant images, objects, and ideas are devalued; 4) an unsubstantiated leap of logic is made from the novelty of an object to the creativity of its maker; 5) the creative product is removed from its social context and given an isolated, innate value; 6) creativity is used to reinforce socio-economic hierarchies and racial/gender prejudices.

4.2 Talent/Genius/Greatness

In order to understand creativity, much attention has been given to the study of the people who do the creativity. This is important because it moves the locus of creativity from inanimate products to the human being. Both landscapes by nature and paintings made by elephants with brushes placed in their trunks may be aesthetic and even novel but lack an essential element of creativity: *human* intention. Studying the person is important because it helps tell us why creativity happens and from where it comes.

Studies of the creative person are based on a major assumption that significant creative accomplishments are the result of the creator's superior innate capability. Researchers talk of highly creative (Martindale, 1974), talented, and creatively gifted (B. Clark, 1992) individuals. Individuals whose creativity results in a series of major breakthroughs, inventions, or works of art are usually considered to be "geniuses," "masters", and "great." Eminence in a field is often equated with creative genius.

Kant defined genius as "a talent for producing that for which no definite rule can be given; it is not a mere aptitude for what can be learnt by a rule. Hence originality must be its first property" (as cited in Rothenberg, 1952 p. 39). Galton (as cited in Rothenberg, 1869) studied the familial histories of eminence, which he also called "hereditary genius." Pre-modern and modern artists sought mastery in a field (R.Clark,

1998, p. 7), therefore, those with the highest levels of achievement were called "masters." May discussed "great talent" and "great creativity." (1975 p. 17). Grudin entitled his book about creativity, "The Grace of Great things." Genius, greatness, master, and talent are commonly used terms which permeate both common and scholarly discourse about creativity.

Close examination of the myth of genius will show that it, too, is a socially constructed concept that has both developed from and caused inadequate research, and that it is replete with overtones of the socio-cultural interplay of power and oppression.

4.2.1 Analysis of Knowledge Construction

Beginning in Europe in the late 13th century, the concept of creative genius developed in Euro-American society. Giotto is considered to have been the first great master (Gombrich, 1995). Professional recognition was valued and often well-compensated. As the society continued, standards for eliteness were established in the fields of art, science, scholarship, and invention, as well as in other fields of work. The Enlightenment in the 1700's severed spiritual from cognitive concerns. As a result, extraordinary works were no longer considered the inspiration of God made real by the hands of men. Inspiration for creative acts, it was now believed, derived from within the individual. Great works, therefore, came from great people. Until the end of the

Twentieth Century, geniuses and great masters were assumed to exist and to be responsible for their own greatness.

Problems exist with the concept of creative greatness and genius. First of all, it was based on a culturally specific and invalid definition of creativity, that of novel/original production. In addition, it relied on an assumption that eminence in the arts, invention, or science is the same thing as creativity, even though some "great" products may be less unique than others of little eminence. Galton, Gardner, Arieti, and others made this assumption. Gardner, for instance, based the thesis of his book, "Creating Minds" on case studies of six eminent leaders of the twentieth century: Einstein, Picasso, Stravinsky, T.S. Eliot, Martha Graham, and Mahatma Ghandi. He subtitled his book, "An Anatomy of Creativity." It is clear that Gardner equated creativity with eminence, discussing only that creativity which results in domain-changing breakthroughs. Though protégé, Andrea Shindler classified creativity three ways: ordinary creativity, personal creativity, and creativity which changes a society or a domain, emphasis of her presentation was solely on the domain-changing variety.

By emphasizing those individuals who produced ground-breaking, highly original, renowned, and socially esteemed creative works, researchers and theorists have omitted from the inquiry many important acts of creativity. Private and non-recognized creative works, works by minority peoples, religious ritual objects with redundant

imagery, and process-oriented forms of creativity such as lifestyle were ignored and left unlegitimated.

Creative greatness has usually been legitimated according to standards set by the dominant culture, occurred via opportunities available mostly to members of the dominant culture, and were achieved through systems set up by the dominant culture. In other words, the label of creative greatness was afforded by members of the dominant culture to other members of the dominant culture. The creativity of non-white, non-male, low-income, unschooled, and other excluded peoples was covertly suppressed by a society that neither recognized nor valued non-elite types and styles of creative work.

Problematic corollaries have developed from the association of creativity with genius. One is the belief that creativity is a domain specific characteristic (Amabile, 1983, Gardner, 1992). In order to create the kind of professional "splash" necessary to become eminent, a person must spend years of study perfecting his/her domain-specific skills and accumulating domain-specific knowledge. While energy and resources are devoted to the pursuit of excellence in one field, other fields of interest and talent must by necessity be neglected. Of course one can not become eminent in a multitude of disciplines. As a young poet said in an interview, when describing her choice to major in poetry rather than art, " I had to decide which I could live without." Contrary to the theses of Gardner, Amabile, and others, mastery in an intellectual/professional field

should not imply that one's creative cognition, personality, and idea process do not manifest in other areas of her/his life.

Theorists of domain specificity also did not consider the instances of "Renaissance men" who were able to succeed in multiple domains, people such as Da Vinci who excelled in painting and engineering or McCloskey who excelled in both illustration and literature. Nor do Amabile's and Gardner's theories take into account pre-mastery level students who are engaged in profound decision making about which of their fields of interest and talent they will pursue. This author has worked with many young people torn between their multiple potentialities. Unfortunately these young people are required by contemporary life to choose only one field to pursue. They will most likely be able to gain mastery in only that one field and, therefore, to exhibit high levels of their creative talent in only that one field. Looking retrospectively at these careers, Gardner and Amabile would recognize only the successful creative endeavors in their final, chosen fields of expertise, not their previously budding creativity in many domains.

A second troublesome corollary to the concept of creative genius is the belief that greatness is an innate attribute of the creator. There is no doubt that an eminent creator studies, works in her/his field and (most likely) accomplishes the product for which s/he earned credit. Yet, is it superior creative ability that earned the greatness? The

accomplishment may belong to the creator, but, in actuality, the *greatness* is an honor bestowed on the creator by society. There exists no direct path from creative innovation to social admiration. Only those creators who are in the privileged position to work in association with the "right people," at the right time in history, and with the right promotional skills are eligible for the kind of public recognition that may get them titled "genius" and "great." Though Van Gogh is now considered a great master, he was a dismal failure in his lifetime. The current admiration for him and his art may have more to do with the contemporary public's receptivity, critics' accolades, and the marketplace's valuation than it does with the quantity of his genius. After all, one would assume that he possessed the same talent during his lifetime that this society now believes he had. Yet, in his lifetime, he was considered a talentless man. According to Guilford, etc, great novelty is only creative when it exists within the boundaries of what is useful to society. Though the title "great" is retroactively applied to him, Van Gogh only became a genius when he became popular, not when he was born with his talent nor when he was making his highly original art.

The conjoining of creativity with greatness and genius is contingent upon and mediated by the existence of public recognition. While, in most cases, superior talent may be necessary to create work that will qualify for the endowment of greatness, it is society's gaze upon one's work that determines one's greatness. In reality, creativity has

been defined not by what is innately extraordinary in an individual, but according to what pleases the empowered members of a society. In Modern Western culture, intellectual complexity, artistic obscurity, and technical sophistication have been idolized. Low-tech, non-academic, and "uncivilized" work has been demeaned. Unlauded creativity, no matter how excellent, has been omitted from the cultural and scientific discourse about creativity.

A third corollary to the association of creativity with genius and greatness is the assumption that all great and original works are accomplished by individuals, thus the concept of authorship. Da Vinci is credited with "masterpieces" and is mythologized as an individual artist who, on his own, created some of the greatest paintings of all times. However, the era in which he painted was one of collaborative efforts between masters and apprentices. While he, as an individual, may have been hired to create a painting, it was, in reality, accomplished through combined work with a team of "lesser" apprentices who did not receive credit for their work. Myth has it that his students painted the more ordinary parts of the pictures and he later added the faces and other "strokes of genius" to the works. True? Da Vinci is not here to tell us. However, in contemporary society there are many examples of similar teamwork. The contemporary glass artist, Chihuly, exhibits artwork under his own, singular name. With his art is displayed a video depicting the team of workers engaged in the production of his ideas. Of all the parts of

the creative process, that for which he is responsible is but the initial idea and the supervision of assistants. John Lennon's sculptures have also been listed for sale at auction as his original works. Nevertheless, he contributed only the preliminary drawings and ideas. The neon sculptures, themselves, were executed in industrial settings by craftspeople who probably never even met Lennon during his lifetime.

The concept of creativity as individual genius is problematic because it presumes that greatness is of an individual "author" and denies the contributions of many workers, collaborators, and colleagues. It also presumes the uniqueness of each image, phrase, and structure, even though all thinking alludes to thoughts, images, and phrases of previous creators and develops through interaction with environmental influences.

Unlike Classicists and Modernists, Postmodernists recognize that all expressions of self - be they language, ideas, inventions, or art - are the manifestations of the complex interaction of one's sub-conscious, history, personal relationships, social position, and cultural identity. The Modernist claim that creativity is the result of individual genius is a myth predicated upon elitism, omission, and myth. Postmodernists question the existence of self, authorship, and a non-contextualized and autonomous concept of talent; they would, therefore, distrust the concept of individual genius.

4.2.2 Analysis Of Empiricism

Belief in the concept of individual creative genius/talent has had major influence on the scientific study of creativity. It has caused researchers to identify as creative those people who produce large quantities of novel ideas (Guilford, 1967) and those who became famous for their innovative contributions to their fields. Case studies of famous creative people looked to self-reports and reconstructed histories of artists, scientists, inventors, and in Gardner's case, of a political leader and psychologist. Researchers sought traits and historical information that reappeared in multiple people's stories, thereby making generalizations about what might contribute to the potential for creative greatness. While these self-reports are intriguing, sometimes beautiful, in their presentation, they do not provide a consistent, reproducible prescription for the development of creative talent.

Case studies of highly recognized creative people are problematic. For one reason, such studies presuppose that individuals whose creative talent produced great innovations are "discovered" because of their greatness. Few studies recognize the ancillary talents necessary to become known in this society: ambition; knowing the right people; desire, ability and resources for self-promotion; understanding one's time; and the ability to deal with criticism. Gardner does discuss the importance of activity in a field of

colleagues as well as self-promotion (1992), but sees them as characteristics of creativity rather than the co-contributing tasks and talents necessary to achieve eminence.

The case studies approach to the genius theory of creativity is also problematic in that it omits another important factor from consideration. It deals ineffectively with the issue of sacrifices and trade-offs that individual creators may make to become "great" and the correlated issue of individuals who do not make the requisite sacrifices and remain unknown.

Gardner discusses the trade-off of mental stability and satisfying personal relationships, calling it a "Faustian bargain" (p.44). He hypothesizes this bargain to "involve masochism and unbecoming behavior towards others" (1993, p. 362). It is believed to be a sacrifice of "all, especially the possibility of a rounded personal existence." He suggests that esteemed creative individuals trade away quality interpersonal relationships for the success of their life's work. Most disturbing about his theory is the concept of "bargain," which implies a conscious choice made by creative individuals to disengage from satisfying intimate relationships. Granted, delayed marriage, celibacy, divorce, childlessness, etc. may come about as choices made after careful consideration of one's life. However, there is another possibility. Perhaps, only those highly creative people who were inadequate in personal relations, suffered extreme personal losses early in life, or possessed extreme needs for recognition were the ones

who became eminent and were, therefore, included in historical, case study research such as Gardner's. The Faustian agreement may be a predisposition and not an agreement at all.

There is much scientific literature about a statistical correlation between creativity and psychological disorders. Interpretations of these correlations often accept mental illness as an ingredient of creativity for at least some people, thereby furthering the stereotype that highly creative people are eccentric and deviant. Perhaps the problem lies not in the statistics, however, but in the interpretations of those statistics.

For instance, what are the possible orders of the cause and effect? Does mental instability predispose one to becoming creative, as seems to be accepted in the literature, or does living "on the cutting edge" and valuing success above other needs predispose one to mental illness? Might persons with psychological disorders be more likely than others to choose to act on their creative talent, become pre-occupied with it, and pursue it relentlessly until it is realized, recognized, and eventually studied?

Another question arises. Though there is a statistical correlation between creativity and mental illness, is there not also a statistical correlation between creativity and mental health? A study by Jamison (1988) found that thirty eight percent of a sample of prominent artists and writers in England had sought treatment for mood disorders. This may be a higher than average incidence of mental illness, but the statistic also

suggests that a majority of the creative subjects, sixty two percent, had not experienced mood disorders at all. Rogers, too, associates creativity with mental health in his theory of self-actualization.

Some professionals might look to an individual's history of relationships to help gauge their mental health. In the biographical literature about "great" creative individuals, there is evidence that these individuals may be less successful at maintaining life-long intimate relationships and engage less frequently than average in child-rearing. Margaret Mead, for instance, selected her husbands according to her professional needs at the time and delayed parenting until after the majority of her significant work had been completed (Robinson, 1989). Georgia O'Keefe, married to Alfred Stieglitz for years, is believed to have engaged in multiple pre-marital and extra-marital encounters with men and women and never had children (Robinson, 1989). She stayed single after Steiglitz' death and did the largest quantity of her most highly respected work during this period. Picasso was known as a womanizer par excellence (Mailer, 1992) and an outrageous exploiter of people (Gardner, 1993). Freud chose a celibate, ascetic lifestyle (Gardner, 1993). Stravinsky (Gardner 1993) and Frank Lloyd Wright were well known for their uncompromising attitudes and Stravinsky's "constantly combative relationships with others" (Gardner p.44). Einstein was divorced from his wife shortly after his major creative breakthrough and expressed dissatisfaction with his "distance from others. "My

passionate interest in social justice and social responsibility has always stood in curious contrast to a marked lack of desire for direct association with men and women. I am a horse for single harness, not cut out for tandem or team work" (Gardner, 1993). It is common in the popular media to hear of successful visual and performing artists who have series' of romances, spouses, divorces, and children by multiple partners whom fathers do not stick around to raise. [Such a history is often blamed on the demands of Hollywood, the nature of rock music, or being "avant-guard"]. Especially when one considers the suggested high incidence of mental illness and mood disorders among highly successful creative people, it only follows that their mental difficulties would also pre-dispose them to relationship difficulties. After several unsuccessful attempts at relationships (and perhaps as therapy for their damaged feelings and self-esteem) many people "throw themselves into their work." Lacking commitments to others, these individuals will give all time and energy to their creative work, causing a thrust toward fame and eminence.

Is it not, however, conceivable that there exist many creative people (perhaps geniuses) who maintain highly stable, satisfying relationships and families but who never made the sacrifices necessary to become famous for their creativity? Might not highly creative individuals with stable emotions and family relationships be less likely to engage in an ambitious, risky career in a creative field because it might compromise their already

satisfying lives? Because of their balanced, mentally healthy lives, they may not need to pursue their creativity with the gusto necessary to achieve greatness and eminence.

Perhaps, the so-called "Faustian Bargain" referred to by Gardner is not so much a conscious sacrifice made by creatively gifted individuals, but rather a natural path taken by those creative people who feel they have "nothing left to lose" in their personal realms. Do not many individuals eminent for non-creative accomplishments also make "Faustian bargains" in order to achieve success in their fields?

Case study and historical research about creativity that focussed on eminent Euro-American creators has been flawed in several ways:

- by its exclusive scope of subjects, selected according to the invalid concepts of novelty and domain-changing innovation while omitting creators from other cultures.
- by basing selection of subjects on the false assumption that great public acceptance is a major indicator of great individual talent, omitting from research creatively talented though less eminent people who have been less driven in their careers.
- by making cause-and-effect conclusions about creative people that are based on questionable interpretations of the historical data.

Further and open-minded research needs to re-examine the possible link between creativity and genius, including a wider population of creative people and creative activities.

4.2.3 Analysis Of Socio-Cultural Factors

Research about successful/great, creative individuals has presented interesting fodder for thought and a basis for understanding some aspects of creativity. It contributed a list of characteristics and antecedent life experiences that seemed to be common to the development of highly creative individuals. While statistical analysis suggested that these may be the very characteristics that cause a person to be highly creative, it must be remembered that these characteristics are the prescription for creativity *in this culture.*

Members of traditional, non-Westernized, cultures accepted standards for greatness that were vastly different and they demonstrated much of their creativity through activities that did not result in commodities or domain-changing discoveries. To apply the Euro-American standards of high innovation and avant-guard style to the redundant but eloquent images of tribal art is unfair. To demean a culture's creativity simply because the culture does not produce unrelenting novelty in the arts, science, and technology is discriminatory. To fail to look for creativity in domains other than the definitive Euro-American domains of art, science, and invention is neglectful. Creative greatness is a culturally determined phenomenon; the experts in Western culture need be wary of applying their assumptions and theories to the members and styles of non-western cultures.

Creativity may have developed in non-western societies through very different channels than in the West and it served different functions. Instead of advancing society to ever new frontiers via unique, boundary-pushing products as in Euro-American culture, creativity was used to maintain traditions through repetition of symbols and techniques. In addition, creativity was employed in the spiritual and historical domains, both of which are expected by Western culture to be objective and unevolving. In traditional Native American cultures, for instance, a propensity for visionary acts and a flair for storytelling were highly esteemed talents that could be characterized as creative. They both required metaphorical and imagistic thinking, and generated products (narratives) which enabled their people to structure their lives. These talents derived not from childhood trauma, mood disorders, divergent/anti-social behaviors, or flexible classroom environments. They were passed down from generation to generation through solid family relationships. Though individuals from non-Western societies did not produce domain-changing original products and did not distinguish themselves with anti-social behaviors, were they not still creative? Even Gardner himself recognizes the ethno-centric dilemma of current creativity theory, but does not adequately deal with it. "The fact that Ghandi was the only creator [in his book] who was not raised in the West complicates my analysis and comparison" (Gardner, 1993, p. 5) He ends the paragraph here.

Even within the Western culture, many people are excluded from greatness and the study of greatness because of their ethnicity, race, religion, socio-economic status, and gender. Prior to Postmodernism, the voice of genius was primarily a white, male voice. Exceptions occurred on occasion, especially for women such as Martha Graham and Agnes De Mille who whose field of dance was a predominantly female field. O'Keeffe was an early female creative achiever at least partly due to her relationship with modern art promoter Alfred Stieglitz. Although small references to her work were included in the art history books, she did not really reach prominence and greatness until after her death at 99 years of age in the postmodern era. Many other highly creative women were eliminated from public success by their famous male spouses and lovers. Rumor has it that Einstein's wife, also a physicist, was integrally involved in the early work which led to Einstein's "discovery' of the theory of relativity. He never cited her nor recognized her work when he received his honors and acclaim. Camille Claudel, girlfriend of the sculptor Rodin, was also an accomplished sculptor, but her success was actively suppressed by Rodin until she disintegrated emotionally and ended up a permanent resident of a mental health facility.

Another hurdle for women creators was their social role. Because their purpose and duty in society was primarily home-making and care-giving, most women could not find the time, role models, or support to actively pursue their creative talents.

Not only were members of marginalized populations ignored or destroyed by the dominant culture, their styles, arenas, materials, and creative purposes were also disqualified. Works of art, science, and invention that were either not meant to be commodities or were unable to be marketed simply did not count. Worse yet, they were often denigrated by the educated, white, male leaders of the society, being labeled "primitive," "crafts," or, as in the case of graffiti, "crime."

A pregnant, indigent and ignorant young woman assembled magazine cut-outs into scrapbooks, creating picture books for her baby-to-be (Personal conversation with Winter, 1993). A low-income, African-American youth, living in an inhumane urban neighborhood, expressed his life force by painting graphic images on subways and brick walls. A barber spent his unscheduled time decorating his crudely hand-carved religious figures with gaudy colors and glitter (Elijah Pierce). A mother embroidered a tablecloth while anxiously awaiting news of her son, a soldier in battle on D-Day (article). A patient in a mental hospital arranged tiles onto a small wooden board, an organized pattern of colors unlike the chaotic design of her previous mozaic. These are examples of creativity that emanated naturally from the minds and lives of marginalized people, people who had not the opportunity nor perhaps the desire to enter into the rat-race of the modern American marketplace. Nor did their artistic tastes conform to the standards of the educated, "cultured," upper echelon of society. Was the creativity of these people

invalid? Was their talent less original than that of more famous individuals? Did they derive less aesthetic pleasure from their creative experiences? When modern Euro-America society expected creativity to meet the elitist standard of useful (marketable) and domain changing originality, then called it genius, they set up a hierarchy of people, a hierarchy that selects out all but the strongest members of the dominant culture. High art is regarded as better/more aesthetic than crafts and kitsch, innovative styles are more creative than traditional styles, electronic technology is more important than mechanical/manual technology, empirical science is superior to folk and narrative study of the natural world. The creativity that has been honored by society and studied by researchers is primarily that which derived from an elitist, racist, sexist, socio-economically prejudiced society.

Immersed in the culture, creativity researchers have remained unaware of the bias in their theories and have failed to illuminate the roles played by factors such as lack of opportunity, discrimination, oppression, poor self-promotion, position outside the field, demands on time, lack of economic resources, low self-esteem, exclusive market, low ambition, and low self-expectations. As a result, these same researchers have adhered to the beliefs that 1) successful creators were geniuses who achieved because of their own innate greatness and 2) the converse implication that those who did not achieve were insufficiently talented. Nearly all theorizing about creativity has been based upon the

underlying assumption that "the cream rises to the top," a concept also known as Social Darwinism.

4.2.4 Summary

The consequences of a belief in greatness are burdensome. Such a belief builds an image of creative people as necessarily different from the norm. Those who reach greatness are treated as better, gifted, elite. Those whose novelty is not accepted by society may suffer social rejection and economic hardship. Those who are unable to practice and succeed at their talent for reasons of societal discrimination or survival needs are considered untalented or at least unworthy of study. Thus, the concept of greatness and genius serves to ennoble the societally successful creator and demean the less fortunate and/or socially excluded creator.

The concepts of greatness and genius also impede successful creative individuals by forcing them into ruts, thereby restricting the very novelty that they espouse. Ironically, the individual who becomes famous/great because of the novelty of his/her work is expected by society to stay stuck in the style or area of inquiry for which he/she became known. The artist, Lichtenstein, for example, became recognized for the Pop Art he helped invent. An exhibit of his work several years ago in Columbus, Ohio – the home of his sculpture, "Brushstrokes in Flight" – consisted of dozens of similar Pop Art

sculptures. Included were a vast array of "Brushstrokes in flight." Whether Lichtenstein went on to invent new styles of art later on in his life is not known. The society that built his reputation and established his greatness required him to remain to the public forever a pop artist, denying him the opportunity (or need) to pursue further novelty later on.

Another consequence of the definition of creativity as genius/greatness is that it identifies creativity with the makers of commodities such as art, inventions, and scientific advances, the esteemed products of white, capitalistic society. Creativity-as-genius theory excludes creative work by groups and individuals who work outside specific professional fields. Such peoples may have more difficult access to the creative fields in which they wish to work and more covert rejection of their aesthetics, styles, and products. As a result, creativity-as-genius theory perpetuates a hierarchical society and contributes to the frustration of all creative people who are not "discovered" or who do not "make it" in society.

The concept of creative genius is fraught with elitism and exclusion. It well perpetuates the myths of Euro-American progress and superiority and re-enforces a propensity for commercializing what, in pre-Renaissance Europe and non-western regions, would have been considered sacred.

4.3 Divergence

The term "divergent" in its common usage has three related meanings: radiating or spreading out from a central focus toward a variety of directions; deviating from the norm or being deviant; and reaching toward an infinite numbers of responses (Webster, p. 662). Guilford's Structure of the Intellect Model identified divergent thinking as the primary requirement for creative ideating, although other types of thinking come into play during the production stage of idea implementation. He defined divergent thinking as that which generates a quantity and variety of information, which is consistent with Webster in that it refers to the production of many dissimilar thoughts. It differs from Webster in its further requirement that the "alternative ideas need to be brought together with ease" (Glover, 1989, p. 16). Guilford's definition is also consistent with Webster's in its expectation of a quantity of responses. Guilford suggested that a "large" number of responses as well as a large number of categories of response are necessary for divergent thinking. He believed that novelty of ideas is essential to creativity and that it comes from divergent thinking ability. Though Guilford did not specifically discuss deviance as part of creativity, society in general seems to have made a connection. Highly creative people are expected by contemporary Euro-American society to be different, to dress more expressively or less restrictively, for instance, to be predisposed to mental illness, or to be more amoral or morally open-minded than others. Much attention has been given to

Picasso's misogynous behavior and O'Keeffe's history of a variety of heterosexual and homosexual alliances (Robinson, 1989), for example. Einstein sported a disheveled hairdo and reinforced the assumed conflict between mainstream society and creative deviance when he said that, "great spirits have always encountered violent opposition from mediocre minds" (from a poster). The belief in divergence, especially when viewed in the extreme, is built from an Euro-American myth that needs to be examined.

4.3.1 Analysis Of Knowledge Construction

Many ideologies result from the premise that highly creative people think and act differently than "average" people and exist on the fringe/edge of society's mores. Many artists and innovators strive for anti-social dress, personality, and life-style. Deviant styles are promoted, exaggerated, and glorified by the media, creating a sub-culture of the weird. Society, then, expects artists, creative scientists, and prolific inventors to be eccentric, idiosyncratic, socially inept, and /or irreverent.

Psychologist May defines creativity as a destroyer of order. He suggests that it is an " active battle with the gods" (p.19), that creativity "threatens the status quo," and requires "the most important kind of courage of all" (p.13). Highly creative individuals are both elevated because of their abilities and scorned because they are believed to be

inherently resistant to society's norms. A case in point is a promotion by Apple Computer, Inc. (2000), which says,

> Here's to the crazy ones. The misfits. The rebels. The troublemakers. The round pegs in the square holes. The ones who see things differently. They're not fond of rules. And they have no respect for the status quo. You can praise them, disagree with them, quote them, disbelieve them, glorify or vilify them. About the only thing you can't do is ignore them. Because they change things. They invent. They imagine. They heal. They explore. They create. They inspire. They push the human race forward. Maybe they have to be crazy. How else can you stare at an empty canvas and see a work of art? Or sit in silence and hear a song that's never been written? Or gaze at a red planet and see a laboratory on wheels? While some see them as the crazy ones, we see genius. Because the people who are crazy enough to think they can change the world, are the ones who do.

This stereotype effects both the socially deviant and the socially conformist, alike. It establishes a quasi-requirement that to be taken seriously as a creative person, one must look and act the part. Creative people with particular styles of personality, character, and dress are attracted to others like themselves and create peer groups of divergent/deviant individuals who may become leaders in their creative fields. These divergent groups inhabit specific geographic areas, establishing arts centers such as SoHo or creative technology centers such as Silicon Valley. The stereotype that equates original thinking with extremes of style becomes a self-fulfilling prophecy, enabling only those who fit in to be included in the field.

Stereotyping highly creative individuals as divergent also tends to exclude from the ranks of creative (and sometimes even from the opportunity to create) those people who may have highly creative ideas but who do not choose to become deviant, flaunt their individuality in external ways, or locate in the "hip" areas of the world. Such people may not believe in their own creative potential because they do not appear creative on the outside. They may cease trying to create or at least to muster the energy necessary to have their work recognized. Those who do wish to vigorously pursue their gifts may be forced to sacrifice their personal values, styles, and relationships in order to achieve success in socially exclusive fields. They may, in other words, be forced into making "Faustian agreements."

Artists, creative scientists, and inventors who work outside the system and who produce works that are not/can not be successfully marketed are marginalized financially, as well. Rather than providing them support by subsidizing their creative efforts, society tends, instead, to both dishonor them (expecting them to "get a real job") and deal a double whammy by idolizing those who successfully sacrifice all worldly reward for the sake of their creativity. The myth of the "starving artist" is perpetuated.

Another aspect of the premise that creative greatness comes from a specific and divergent cognitive/personality style is that society attributes success by creative individuals who "hit it big" in the marketplace to an extraordinary quantity of creative

talent. They are believed to "achieve greatness" or "be discovered" on the merit of their innate creative gifts. Yet, as Gardner suggests (1993), creative achievements usually involve extra-ordinary devotion of time and energy to work in a specific domain, professional activity in a field of professionals, and perhaps Faustian agreements. Instead of the attributes particular to creativity, researchers may have really been studying willingness to sacrifice, ability to endure a harsh socio-economic lifestyle, tolerance of social rejection, ability to conform to non-conformist life-styles, and unmitigated dedication to one's work. As an addendum to his theories of creativity, Guilford, concurred, suggesting that motivational and temperamental traits determine whether or not one's creativity results in creative behavior and production (Glover, p. 13). By selecting populations for study based on their record of novel production - especially that which causes great changes within domains - researchers have forced creativity into strict parameters and omitted from study the many individuals who generate prolific quantities of artistic, scientific, and technological insights and objects but who have gone unacknowledged.

An additional difficulty with the theory of creative divergence lies in the expectation that creativity is "cutting edge." Because progress has been considered a virtue, creativity, the believed source of continual change and implied evolution, is honored by Western culture. Society tolerates the destructive aspects of creativity

identified by May because it believes that only by pushing its boundaries and breaking its solidarity is it eventually improved. The creatively gifted individual, then, is considered by Western society as both deviant and visionary, both madman and savior. S/he is feared and rejected because of the order which s/he has breaks but also highly valued for the progress s/he eventually generates.

The dichotomy in which creative individuals are forced to exist may be a contributor to their unbalanced emotional lives, if indeed they tend to have unbalancd emotional lives.` Having to be a deviant destroyer of society and at the same time a potential savior of society must be a difficult balancing act. It may be the opposite pulls of these two forces which tends to push highly creative people over the emotional edge into mental illness. However, it should be remembered that the creative individuals studied were those who exhibited extremes of divergent behavior and novel production, those who may have already made Faustian agreements or existed on the edge of society.

Another possibility exists, however. Because Western society tends to be emotionally restrained, some would say repressed, those people who have more easy and open access to their feelings, who may have more passionate feelings, and portray their feelings for all to see may only appear to be mentally ill. The majority of highly creative people included in case study research were but a generation away (or less) from the extremely repressed Victorian Era. They also lived in the advent of psychology, at a time

when the field was newly conceived and the practices undeveloped. Perhaps the exaggerated and outwardly expressed emotional natures of creative people were misinterpreted as mental instability, causing theorists such as May to believe "genius and psychosis are so close to each other" (1975, p. 20).

The belief that highly creative individuals are divergent, deviant, avant-guard, and often mentally ill is at least partly the product of a competitive and capitalistic society in which success is attributed to talent and superiority. In such a society, less divergent/deviant people may be generators of high quantities of art, theory, or invention but may not market their work for many reasons - including its highly personal nature, the creator's lack of access to the marketplace, or a non-commercial purpose for its creation. Their work may be less novel, too novel to be "useful," may not exist within domains considered to be creative, or may not have been created in the midst of esteemed colleagues; it is, therefore, generally considered to be not significantly creative.

Capitalism functions according to Darwin's theory of the survival of the fittest. Individuals whose creations succeed in the competitive marketplace of commodities and ideas are the survivors and their survival is attributed to innate creative ability. Creators who do not achieve recognition or status in mainstream society, ie. who do not excel in the marketplace, are then considered "less fit" and, therefore, must be less creative. These creators have been excluded from the knowledge constructed to explain creativity.

A strict reading of Guilford's theory of divergent thinking may seem more valid than the generalized stereotypes made by society at large. Guilford's definition of divergent thinking focussed on thinking that advanced in multiple directions at once. He believed that this was the explanation for mental association, metaphors, and the transfer of thought from one category to another, all essential tasks of creative thinking.

Recent research seems to have supported Guilford's concept. Brain laterality studies suggest that there are both linear and multi-directional thinking styles that are generated by different brain hemispheres. Being language-based, the left hemisphere produces logical, step-by-step explanations of thought, according to the theory. The right hemisphere, however, is credited with producing metaphorical, holistic, multi-faceted conceptualizations of thought. These differences are consistent with the differences between convergent and divergent thinking, as Guilford describes them. Over-simplifying, many pseudo-scientists have even declared that the left side of the brain is logical and the right side is creative.

Martindale's and Mendelsohn's studies of low brain arousal added further corroboration to Guilford's theory. In the Martindale and Mendolsohn studies, highly creative individuals maintained low brain arousal for an extended period of time. Less creative people did not. During this state of low arousal, Martindale's study suggested,

thinking was scattered and closure was delayed. As a result, the brain was unfocussed, skipping around from thought to thought, allowing for exploration of a large quantity and wider range of responses as well as the making of connections between disparate ideas. The creative brain, therefore, seemed to engage in fluency, flexibility, and association, the hypothesized essential elements of creativity according to Guilford, Koestler, and others.

Theories that define creativity as divergence have limitations. Guilford's concept of divergence as a thinking style tends to be useful and is backed up by recent research. Divergence used to signify a deviant/anti-social life-style is possibly invalid. It fosters discrimination between people, alienation of some and idolatry of others, perpetuates the myth of the starving artist, and associates creativity with craziness. It also fails to address the biases inherent in capitalism, social stereotyping, and exclusive research populations.

4.3.2 Analysis of Empirical Science

Though the concept of divergent thinking has been established as a mainstay of creativity theory, it suffers from many of the weaknesses of other theories of creativity. One weakness is that it adheres to the belief that novelty and original production are the definitive characteristics of creativity, a concept that has already been shown to be internally invalid, culturally ethnocentric, object-oriented rather than human-oriented,

and omits from consideration a variety of forms and creators. In addition, making novelty is in itself a divergent, non-conformist action. It requires the inclination and courage to "buck" the traditional system of beliefs and behaviors. It is the manifestation of divergence. Therefore, novelty and divergence are mutually reinforcing concepts. That creativity can exist outside of novelty is conceivable and supported by evidence in non-western cultures and minority peoples. These examples of creativity have not been included in the research because novelty was always the definitive characteristic used to select populations and to judge results.

Having set up a competitive system of "survival of the fittest," Capitalism in western society indirectly set up a self-fulfilling prophecy that encouraged people who worked in supposedly creative fields to act more divergently and those who are more socially conforming to see themselves as not creative. As a result, it may be difficult for researchers, as members of this society, to distinguish individuals with extremes of behavior that appear creative from individuals who are actually creative. The line between real creativity and deviance is blurred, creating only the appearance of a correlation and omitting less divergent/deviant people and production from being researched.

Another difficulty with the research regarding divergence and creativity is that Guilford seems to have constructed the Structure of the Intellect Model that includes

divergent and convergent thinking first, and then began searching for evidence to document it (Brown, in Glover, 1989), an inductive and non-positivist approach to science. Another difficulty with Guilford's theories is that little correlation exists between high scores on divergent thinking measures and real-world creativity. (Brown as cited in Glover, 1989). Guilford, it seems, developed a full-blown theory of creativity that has been widely embraced by experts in many fields but which is of questionable validity.

Yet, some research does seem to offer support for Guilford's theory of divergent thinking. Mendolsohn's and Martindale's empirical studies of brain arousal and Sperry's, Springer's, and others' studies of brain laterality present biological evidence of what may be divergent thinking.

4.3.3 Analysis of Socio-Cultural Factors

Creativity as divergence is a socio-culturally tainted concept. It was defined by the white, male, affluent, dominant culture of pre-modern and modern Euro-American society. In the west, creativity was valued if it was done by those who participated in the dominant culture. Even those on the edge of social expectations, so-called non-conformists, were still classified as such by the hegemony of affluent, white, male society. Divergence and non-conformity existed only in comparison to the dominant

culture and for those whose differences were closely aligned with the dominant culture. Their divergence/deviance was in comparison to previously established styles and beliefs but still within parameters of what pleased and was eventually accepted by the dominant culture.

Creators who were not members of the dominant culture were encouraged to change their styles and methods of work, to assimilate into the dominant standards of valid creativity and to conform to the stereotype of the divergent. deviant white man. Black artist, William Hawkins, for instance had to leave his African-American home to study painting in Europe. It was only after he had achieved some success painting Impressionistic portraits and landscapes that he made the decision to change his subject matter and style to more closely match the lifestyle of his own people. Nevertheless, his name rarely, if ever, appeared in art history texts.

Though white artists appropriated characteristics of non-western art into their own work, true African, Native American, and Asian artists were not invited into the mainstream art arenas. Often, their works were viewed as artifacts of natural history, showing up in historical museums as curiosities and displayed beside partially unwrapped mummies. Native American music and dance never left the reservation. African-American inventors, such as George Washington Carver, were viewed as quaint side stories of history, and African American artists, despite the fact that they created whole

genres of music, excellent poetry and visual art, were rarely included in the mainstream of criticism, promotion, and the marketplace. Venues for performance and display of art forms by African American's had to be created inside the excluded black communities. As a result, when researchers such as Gardner, Ghiselin, and others sought out great creative minds to study, they not once included a black, Native American, or Asian creator. Apparently, non-white creators were just too divergent to fit Guilford's requirement that besides divergent, creativity must also be useful and appropriate.

Creative work by women was even less recognized. Most of it was created out of the necessities of home-making or the leisure of affluence. The myriad home-crafts and inventions developed by women were seen as functional objects, cute, or the business of women and children: therefore, not to be taken seriously. That women's creativity often occurred through affiliative activities such as quilting bees, mid-wifery, and child-rearing, was in diametric opposition to the concept of divergence and individuation. Differentiating self from the masses, ambition, success in the marketplace, subsequent fame and fortune were the prescription for male maturation and success. Women's roles of community building and family caring did not allow for the self-styled, individualized, and non-conformist appearances that have been associated with high levels of creativity. However, there were some creative women whose names did make it into the history books. Madame Curie, Georgia Okeeffe, Mary Cassatt, for example, worked in male-

dominated fields and built reputations as highly creative, independent women. They also worked side-by-side with successful men who may have facilitated their success. These were women who had the innate ability to create outstanding works, but who also were in intimate relationships with members of the dominant culture, men who could neutralize the effects of gender bias.

4.3.4 Summary

The concept of divergence and its relationship to creativity is of mixed influence. Guilford used the term to describe a specific style of thinking which seems to be an essential element of creative ideating. Society as a whole, however, has tended to stereotype creative individuals as divergent, often deviant, members of society. Both meanings of divergent are based on an ethno-centric, white, male paradigm that excluded many races and genders of creative people from serious validation and participation in research and subsequent knowledge construction. Therefore, the theory of divergence – whether it be of thinking style or lifestyle – is valid only in its relation to the previously criticized belief that creativity is novelty.

4.4 Cognition/Personality

A major thrust of creativity study has been to seek descriptions of highly creative people in order to shed light on the nature of creativity, itself. Early studies assessed qualities of personality and styles of thinking. These studies were based on observation of behavior and self-reports of mental processes.

In the latter part of the 20th century, science was able to begin honing in on the source of thinking by studying the function of the brain itself. Active brains were examined with brain-mapping techniques, CT and PET scans, brain wave analyses, and brain energy evaluations. Brain studies have suggested that hemispheric differences may explain the imagistic, metaphoric and visionary thinking, many of the manual tasks, and the spatial decisions that occur during the creation process. Martindale and Mendolsohn have conducted studies that indicate brain energy levels of highly creative people tend to be different from those of less creative people. The IPAR studies by MacKinnon and others enumerated a serious of personality characteristics of highly creative people that seem to be consistent with the information coming forth from the brain studies. Guilford's theories of divergent and convergent thinking also tend to make sense when viewed according to the new information on brain function. Yet, as with other studies,

creativity studies of cognition, personality, and brain function also rested on an underlying belief that novelty is the primary definer of creativity.

An exploration of the efficacy of the cognition/personality/brain approach to creativity studies is in order. What are the foundations and methodologies of cognition/personality/brain studies? Is the information provided by these studies useful to the discourse or invalid? What are the socio-cultural implications of cognition/personality/brain studies of creativity?

4.4.1 Analysis of Knowledge Construction

Underlying most studies of cognition and personality are two assumptions: that creativity is attributable to sole individuals and that these individuals possess potentials for creativity that exceed that of ordinary individuals. The first assumption is exemplified by a quote from John Steinbeck who states, "Our species...has only one creative instrument, the individual mind...Once the miracle of creation has taken place, the group can build and extend it, but the group never invents anything. The preciousness lies in the lonely mind of man" (Think, 1962, p. 32).

American myth is loaded with examples of "great men" who supposedly because of their own individual and innate ability discovered, invented, or created remarkable works. Their stories helped build the American ethic of "rugged individualism," a trait

Americans proudly accept as the backbone to western expansion and technological "superiority." The lives of such American heroes are examples of the "American dream," the cultural belief that anyone can raise him/herself from a low socio-economic standard to a successful one through rigorous individual effort. This accomplishment is sometimes known as "pulling oneself up by one's bootstraps" and re-enforces the belief that success is something a person earns by him/herself through talent and hard work. As a result of the ethos of these American myths, creativity has been viewed as the result of talent and solitary effort. Great creativity, of course, is viewed as the result of great talent and solitary effort.

Therefore, studies have turned to the artist, author, inventor, scientist, or other creator as the source of creativity and regarded him/her as the sole party responsible for the creative work. It is but a small step to reach the underlying assumption that creativity is a human trait or combination of traits that appear in greater amounts in more highly creative individuals.

The search for the definitive creativity trait has followed many paths, each of which was determined by researchers' core beliefs regarding the essence of creativity. Believing that creativity was purposeful primary process thinking, Jung, for instance, attributed creative talent to a permeable boundary between the conscious and the unconscious. Believing association to be the essential task, Mednick attributed creative

talent to low mental arousal which produced a flat associative hierarchy. Following Mednick's theory, Mendolsohn identified de-focused attention as the essential ingredient of creative talent. Guilford divided up the intellect to find fluent, flexible, and especially divergent thought processes to which he could credit creativity. Believing that all behaviors were the result of other, re-enforcing behaviors, Skinner was able to recognize no creativity trait at all.

Yet belief in creative talent persists, and current researchers are looking into the biological functions of the brain to identify essential traits or operations that produce creativity.

Correlations between specific personality styles and creativity have been asserted by researchers, and though one would expect creative personality to be highly related to creative cognition, little has been done to seek such a connection. Most studies of creative personality have resulted in lists of traits thatcorrespond or contribute to social divergence. Examples include openness to experience, non-conformity, intuitiveness (non-logical knowing), preferences for irregular and asymmetrical imagery, comfort with ambiguity and chaos, dislike of the status quo, assertive self-esteem, and a likelihood of mental illness. It is not surprising that the characteristics of creative personality as identified in the literature to date are those of rebellious, anti-social, and somewhat mal-adaptive individuals. After all, the highly creative people studied were selected

specifically because of their tendency toward divergent, deviant activities that broke down existing structures in order to create new ones. The concept of a creative personality style is, like nearly all creativity research, based on, and perhaps tainted by, the underlying assumption that creativity is novel, original production.

4.4.2 Analysis of Empiricism

There are advantages and disadvantages to the cognitive/personality approach to creativity research. Though some studies have been small and results generalized beyond the scope of the studies, empirical science has been highly capable of identifying cogent lists of cognitive actions and personality traits specific to highly creative individuals. By studying such cognitive activities as conscious/unconscious thinking or the making of mental associations, researchers have begun to refine their notions of creativity. Adding the new methodologies of brain science, researchers are beginning to identify neurological functions that are active during creativity. The enumeration of personality traits particular to highly creative people is also helpful. Because personality is at least partly a manifestation of cognitive style, scientists could seek to correlate certain personality traits with brain laterality, neurological chemistry, arousal levels, energy variations and cerebral and limbic activities.

Interesting additional discourse about creativity can ensue from studying cognition and personality. Issues of nature and nurture as related to creativity can be explored, as well as issues of the environments, teaching styles, and parenting styles which may foster or hinder the development of creativity. Brain studies might encourage looks into roles of sleep, drugs, meditation, climate, stimulation, and a vast range of other factors that may or may not have influence on creative activity.

Focus on cognition and personality has an additional advantage. It moves the locus of creativity from that of novel and useful products to human function. It offers the potential in the future to identify highly creative people of a variety of cultural, gender, socio-economic, and motivational situations according to how they think and act instead of what they make and how successful they are.

Though studies of the brain functions, cognitive acts, and personality characteristics that relate to creativity expand the focus of research and the understanding of creativity, they are potentially biased. They are dependent on the culturally specific underlying belief that creativity is synonomous with novelty and originality, a concept that this author has already stated is internally questionable if not invalid.

4.4.3 Analysis of Socio-Cultural Factors

A consequence of associating creativity with rugged individualism and a specific cognitive/personality style is that creative people have been viewed as a special entities, different and superior/inferior to the more average members of society. They are sometimes revered, as is Einstein, for their supposedly superior intelligence and because of the major contribution(s) they have made to society's progress. Other times, they are rejected by society, as was the young Van Gogh when he was expelled from ministerial studies for deigning to interact personally with working-class congregation. Many highly creative contemporary public school students are socially marginalized by peers and sometimes penalized by teachers because of their non-conformist styles and behaviors.

Though non-conformity (divergence) is commonly listed as a characteristic of creative personalities, its origins can be questioned. Does it come from the natural tendency of creative people to develop their own ways of doing things or does it result from socio-cultural expectations that highly creative people will dress and act in ways that diverge form the norm, thus creating a self-fulfilling prophecy? In very contemporary society, the media projects a social standard which ennobles anti-social behavior and dress, thereby expecting young people to conform to non-conformity and young people in creative fields to deviate even more from the mainstream styles and structures of society.

At times, society may be fooled to believe that the high originality produced from the illusions, hullucinations, or visual aberations of mental illness - such as those in works by Dali, Colleridge, and Van Gogh - are soley attributable to creative genius. The true relationship between individual differences that relate to creativity and those that are socially produced is blurred, at best.

Nevertheless, through neuro-science, researchers are beginning to identify characteristics of brain function that seem to correlate with creative activity, and the promise of such studies is far-reaching. By defining creativity according to individuals' cognitive patterns, researchers could seek out more diverse populations to study. Non-Western and marginalized peoples could be studied, as well as those who may not even recognize themselves as creative. Longitudinal studies could ensue, following a young person's cognitive potential for creativity throughout life; this may produce a very different understanding of creativity than the current hermeneutic, retro-active approach of case-study research. A neuro-cognitive approach to creativity research could more clearly describe how an individual's creativity may or may not extend across domains. By looking within an individual for consistent patterns of cognitive function throughout a variety of domains, researchers may begin to recognize a broader type of creativity than just that which produces socially useful novelty. By attributing creativity to patterns of brain function rather than the production of novel products, researchers may also be able

to study creativity in domains heretofore unrecognized as creative, domains such as healing, psycho-therapy, spiritualism, ritual, sport, play, education, law, child-rearing, and family life.

4.4.4 Summary

The study of creativity in terms of individual differences in cognition can be a basis for developing a more culturally-neutral understanding of creativity. However, even this approach has its inherent contradiction: it has begun with the study of populations selected according to the traditional and culturally exclusive criterion of novel production.

4.5 Creative Process

Since the works of Wallas in 1926, creativity experts have embraced the idea of a sequential creative process, believing that all individuals progress through a similar series of mental actions in order to conceive of and implement creative ideas. While some researchers have attempted to modify the process to include more stages or a repetitive sequence of stages, only Weisberg has attempted to disprove it. However, his refutation of the linear creative process was weak, as discussed in Chapter 2.

The creative process, it is commonly believed, begins at the point when one desires to create or solve a problem. Arieti described a pre-ideation stage during which an individual feels an amorphous urge to create but with no clear images or understanding of the urge. This he labeled an "endocept." However, according to Wallas' more popular view, the first stage of the creative process is "preparation." The process then progresses through an unconscious stage of "incubation," presents a solution/idea to the conscious mind with exhilarating suddenness, called "illumination," and continues through "verification," which is research or object-making and which brings the end of the process.

Wallas' concept of the creative process is simple, clear-cut, repeatable, teachable, and based on interpretations of self-reports by eminent creative figures of the past. Though it has been suggested that minor modifications to add more stages or to envision the process as spiraled rather than purely linear would be more accurate, Wallas' linear theory has been widely accepted.

Because Wallas laid out a format that may be examined, researchers have been motivated to study not only creative products and creative people but also the combination of mental operations that seem to create insight, innovation, and art. Does the "stages" approach to creativity facilitate an accurate understanding of creativity? Upon what structure did the theory develop? How is it limited by socio-cultural

paradigms or limited to exclusive groups of people? The following analyses will help to answer these questions.

4.5.1 Analysis of Knowledge Construction

To formulate his theory of the linear creative process, Wallas interpreted the writings of mathematician Poincare, physicist Helmholtz, and others who discussed both cognitive and affective experiences during their creative processes. Wallas gleaned an alternating pattern of conscious and unconscious work, identified a specific order for that conscious and unconscious work, and labeled the various parts with poetic names. In so doing, he re-enforced the mystique of creativity as a nearly magical, spiritual act, one in which even the creator experiences periods of seemingly uncontrolled and spontaneous ideation. But he also made logical and scientific a process that had previously been obscure. While pre-modern, tribal, and spiritualist thinkers would be expected to embrace the magical aspects of the creative process as presented by Wallas, modern, positivist scientists would not. Nevertheless, science has accepted Wallas' theory, likely because of the logical, step-by-step appearance he has given to the creative process.

A positive contribution of the theory of a sequential creative process is that it is humanizing. It applies a perspective to creativity that describes the human work creativity entails and the human experience creativity elicits. It counteracts the

concreteness of emphasis on product by dealing with less tangible aspects of creating such as inspiration, imagination, and exhilaration. In so doing, it allows room for subsequent discussions of significant affective aspects of creativity such as Csikszentmihalyi's concept of flow, Arieti's concept of endocepts, Amabile's studies of intrinsic motivation, and Csikszentmihalyi et al's (1993) discussions of intrinsic reward.

Once creativity was viewed as a series of cognitive actions rather than a gift of the muses or a natural emanation of specific and elite talent, it became accessible to the masses. All people could be believed to possess the ability for (at least) some level of creativity. Rogers (1954) identified creativity as a naturally occurring activity of fully mature, self-actualizing individuals. Lowenfeld saw the potential for creativity in all children but believed that it was being systematically oppressed by restrictive styles of adult-child interaction in schools and homes. Subsequent studies sought criteria for the optimal classroom, workplace, and family environments in which the creative process could thrive.

As a result of Wallas' positing of a step-by-step creative process, creativity became more visible and understandable. It was no longer only the domain of geniuses, it was hypothesized to exist naturally in all people. As well as geniuses, children and psychologically developed, self-actualizing adults were believed to have higher levels of it.

4.5.2 Analysis of Empiricism

Wallas' concept of a linearly sequenced process that is standard for all creative endeavors is helpful, but has its limitations. It was derived from and further supported by analyses of the self-reports by many eminent creators. Because these self-reports were by professionals in a range of fields, including math, science, and the arts, Wallas and other process-based theorists made generalizations about the creative process across fields. In 1994, this author solicited self-reports about creative process from talented but less-eminent creative individuals and believed she had corroborated Wallas' theory.

While nearly all self-reports about creativity seem to have included descriptions of what Wallas called "preparation, incubation, illumination, and verification," the creators used instead a variety of other words – both metaphorical and concrete – to describe their experiences. They also discussed experiences other than Wallas' four stages. An endocept-like urge to create and intrinsic drive to create are examples. In addition, the creators seem to be less concerned with the order of the events of the creative process than with the emotional impact of the events. The self-reports are compelling because of the emotionally laden content they express. But are they conclusive evidence of a linear, staged-based creative process?

It seems that many creative individuals experienced similar affects and engage in similar mental operations in order to conceive of and produce their creative works. However, for Wallas and others to generalize about the creative processes was risky. Human beings have a natural need to understand phenomena, even though the phenomena might be but random or unrelated facts. Humans label, categorize, organize, compare, generalize, order cause-and-effect relationships, interpret, and make meaning out of the stimuli of their lives. These tasks are important to survival, they make life manageable and meaningful, but sometimes they are in error. Because early modernism was based on a devotion to scientific knowledge and a faith in the potential for making generalizations from observations of the particular, Wallas was within the boundaries of valid science to assimilate the information from self-reports into a cohesive theory. However, in this post-positivist era, when science is scrutinized and it's generalizations often viewed as socially produced "grand narratives," one could question the concise, linear, and sterilized nature of Wallas' theory of a single, consistent, and sequential creative process.

The self-reports of the creative processes of successful creative individuals do have value, however. Postmodernists place emphasis on the importance of narratives. Oral histories, interviews, life stories are considered to be significant data. That meaning

is inherent in the retelling of one's experience is a basic tenet of much postmodern/post-positivist research.

Wallas' (and others') assertion that there is a definable, linear, and consistent creative process was helpful in that it ellucidated the mental operations that seemed to occur regularly during individuals' processes of creating. The science behind the theory, however, was limited by the needs of positivist science to pull together individualized data into a seemingly cohesive whole. As a result, the creative process has been believed to be restricted to four separate mental operations that occur in a specific linear sequence.

4.5.3 Analysis Of Socio-Cultural Factors

A linear creative process fits the schema of Western culture. In the West, time is linear, therefore, any process that occurs during a period of time must seem linear - to have a beginning, a middle, and an end. In addition, validatable knowledge in Western culture is dependent on logic, which is, itself, a linear, sequential process. As Wallas was reading the descriptions by eminent creators of their creative processes, he likely interpreted their experiences into a step-by-step progression. That the creators were relating their experiences via language, necessitated linear, sequential explanations for their experiences, as well. Language was the vehicle for both conveying the original data (self-reports) and for construing it into a cohesive theory. Yet, as Grigg stated,

"Language is linear; it wants to dismantle and stretch into sequence experiences that are inherently whole and simultaneous, that are gestalt" (1988, p. v). Therefore, The schema for creativity that Wallas and others presented was constructed by language.

Language, logic, and linear thinking are the requirements of valid Western thought as well as a clear way to convey to another what one has experienced. However, the experiences of creativity tend to be – at least during certain parts of the process – simultaneous, unconscious, intuitive, multi-directional, gestalt and occur to the creator spontaneously, imagistically, during multi-tasking, or as an interaction with multiple streams of thought and concurrent actions. Creativity seems not to be very linear, logical, or language-based at all.

Vinacke (1952) seemed to concur when he suggested that creativity might proceed repetitiously rather than linearly. He believed that creators experience multiple incubations and illuminations. "Steve," in this author's 1994 study also described repeated incubations, insights, and problem-solving acts during the creation of each of his ceramic works.

Social-cultural psychologists including Vygotsky would heartily disagree with the concept of a clear-cut, step-by-step, linear process. They theorized that higher mental function is an interplay of the interpersonal and intra-personal. They believed that through physical or semiotic mediation one becomes self-reflective and internalizes

information. Therefore, individuals transfer unconscious thought into "behavioral and cognitive manifestation[s] that have social form and meaning" (Kozulin, 1990, 44). In this way, creativity would occur during an interaction of experience, self-reflection, and use of mediational tools, an interaction that is simultaneous and interdependent, not linear and sequential. Creativity, according to the socio-culturalists, would not be a step-by-step progression from desire to unconscious thought to conscious idea to product but an interaction between internalized thinking, imaging, writing/drawing/constructing, and dialoguing with images, tools, and other people..

Wallas' concept of creativity as being a linear process has additional difficulties. The self-reports that were the foundation for his theory were those of successful, white, Euro-American men. Several self-reports by women writers exist in the literature and relate descriptions of creative processes similar to those of men. However, no study has been conducted to seek descriptions of creative processes of non-white, especially of non-Western creators. Nor have studies been conducted of those whose work falls outside of the standard creative fields of math-science, innovation, and the arts.

4.5.4 Summary

Wallas and others who explained the creative process opened the door to studying the mental operations and activities of creative ideation, also to the possibility that all

human have at least some potential for creativity. Yet, their theories were limited by cultural bias toward a linear concept of time, the need to generalize from a small sample to multiple populations, manipulation of narrative information into a clear-cut schema, and a culturally limited population of subjects. As a result they posited a meta-narrative regarding creativity when, according to postmodernists, no meta-narrative can ever be valid.

4.6 Conclusion

Recognizing the socio-cultural, constructivist, and empirical weaknesses in the theories of creativity as well as the inability of any universalizing theory to maintain its integrity, postmodernists would reject the concept of creativity. They would recognize the irony of a definition of creativity that requires originality when at the same time it expects all creators to conform to a standard of novelty and to work within a structure of pre-established domains. Postmoderists would seek inclusion of "a plurality of voices" (Natoli and Hutcheson, p. x), placing emphasis on the variety of works by "local and particular" individuals (p. xi). They would criticize as illusion the concept of major domain changes that push forward the progress of a society of people seen (falsely) as united. They would rejoice in making public the underlying collaboration by many individuals in the production of works attributed to one genius, author, artist, or inventor.

They would search out the many sources of thought and image that are appropriated and alluded to by each creator as he/she is supposedly developing a unique work. They would recognize the multi-factored mental operations that interact in repetitive and simultaneous fashion with verbal, physical, and semiotic tools to internalize knowledge and make products. They would eliminate the hierarchical valuation that deems "high" art and culture, "hard science," and wealth-producing invention as highly creative and degrades other styles of art, science, and technology. And they would state an imperative to respond not just to a work as a feat by a singular creator, but also to the interaction of many participants in the process of creating, promoting, publishing, publicizing, reading, interpreting, valuing, and otherwise interacting with the work and its cultural context.

Postmodernists would negate the possibility of novel production, individual genius, and linear process as only social constructions developed through language. In other words, they would deny the definitions and, therefore, the existence of creativity because, according to Derrida, "There is nothing outside the text" (1976).

CHAPTER 5

ADVANCING AN ALTERNATE THEORY OF CREATIVITY

In attempting to see beyond the stereotypes and omissions needed to construct the modernist theory of creativity, postmodernist thought denies the existence of creativity. A postmodern perspective is nihilistic, negating the concepts of genius, originality, authorship, and linear process. It recognizes that creativity is an Euro-American construction based on the cultural values of competition, capitalism, and white-male supremacy. Even in the arts, creativity is perceived as an invalid concept. Clark et al suggested that art educators "reconsider the concept of originality" (1998, p. 8), and late Twentieth Century art educators "questioned fundamental assertions of the creative self-expressive approach" (Day et. al, 1987, p. 131).

By de-validating/negating creativity, Postmodernism commits one of the very crimes it condemns: dualism (Natoli & Hutcheson, 1993). It treats creativity with an either/or orientation: either the modernist definitions of creativity are true or there is no creativity at all.

Yet, even after taking into account the biases and omissions of modernist creativity theories, there still seem to be remnants of a concept of creativity left to reassemble. Creativity is not dead. It thrives in common usage among the general

population. Business ennobles it as the source of novel, marketable products. Teachers and parents see creativity in children's "cute" manipulations of art materials and rhyming words. That many school projects are but students' execution of teacher or textbook ideas is lost on the adult who views creativity as evident in nearly anything that is handmade. Lack of student involvement with the specific mental operations inherent in creativity is irrelevant as long as the product is intriguing to the (often limited) vision of the adult. A similar attitude exists in response to many handmade products constructed by adults. Crafts shops market hundreds of pre-designed kits and supplies that require only hand-skills to decorate such items as baskets, embroider pictures, or glue together birdhouses, for instance. Such activities are advertised with a generous seasoning of the word, "creative." In the vernacular, "creative" is quite common but unfortunately is so diluted that it seems to have little if any meaning at all.

So what is the status of creativity in the Twenty-First Century? Individuals do explore the universe, make art, music, dances, and books, and "tag" on buildings and trains. They talk in rhyme, have visions, enact ceremonial dances, and invoke spiritual power through the arts. They heal with herbs and chemicals, art and conversation. They raise children with continual discoveries about who their children are and how to infuse them with life. They respond aesthetically to natural phenomena and human-made objects. Creativity still occurs on a regular basis.

It is, therefore, irresponsible to throw creativity out of contemporary discourse, as Postmodernism would have us do. However, it can no longer be understood as the making of novel, projects nor as a "privilege of the elite" (according to a high school principal) or of the ingenious, or of the members of a "field" of professionals. Creativity appears in all societies, peoples, domains, socio-economic groups, and lifestyles. It is time to re-envision creativity with an open consideration for the multiplicity of forms, arenas, and roles it encompasses. In so doing, one must be constantly aware of the human tendency to generalize, to create meta-naratives. As a result, this author recognizes that in positing a new theory of creativity, she needs to proceed carefully and present only ideas that allow much room for individual and cultural variations and interpretations.

5.1 Advancing a Theory

Creativity can and often does result in original/novel products that advance a society However, it also encompasses a much larger range of human endeavor. A broader understanding of creativity can develop from looking first at the core catalyst for creative activity: encounters with life experiences. According to May, "creativity occurs in an act of encounter and is to be understood with this encounter as its center" (1976, p. 78). Common knowledge would concur: art, medicine, scientific inquiry, invention

always occur in response to human experiences with the human and natural world. These experiences could be spiritual (a vision), scientific (a question), technological (a need), artistic (an aesthetic reaction), personal (an emotion). Creativity occurs when individuals react to their experiences by acting upon the objects, ideas, and interactions in their lives, thus making conscious their sensory and emotional experiences. The result is a transformation – sometimes of product but always of consciousness.

According to socio-cultural psychologists, higher level thinking is an interaction of interpersonal and intra-personal activities and is the end result of behavior that was originally non-self-reflective (Kozulin, 1990). After phenomena are experienced by an individual during social interaction or interaction with the environment, an individual pulls the ideas inside where they are mentally restructured and become part of his/her cognitive repertoire, which is the process of internalization (Kozulin, 1990).

In Reality Isn't What It Used to Be, W. Truett Anderson wrote of two types of occurrences: exoteric and esoteric. Exoteric experiences are based on outside objects, doctrines, symbols, rules, and organizations. Esoteric experiences, however, are inward and are based on the transformation of personal consciousness (Anderson, 1990). Creativity is esoteric, though it can manifest itself as a concrete product, which is exoteric.

A product could be the result of a significant esoteric experience, but when outside forces such as the public, society, critics, dealers, politicians, religious leaders, or academics strip the exoteric from the esoteric, the product is deified in absence of an understanding of the transforming creative experience of the creator. Thus, creative products become commodities for investment, profit, prestige, convenience, or survival rather than appreciated for their meaning and transformative properties. The viewer or audience does, however, have the potential to bring to the stripped, exoteric product a conscious response that recreates meaning. Therefore, an esoteric, newly creative experience can occur in the viewer.

Vygotsky wrote of the transformation of human feelings into aesthetic reactions and believed that to become thought, unconsciousness must be filtered through a mediational process (Kozulin, p. 43). Mediational devices include tools, signs, symbols, and language. By employing these devices, an individual becomes aware of her/his unconscious interaction with environmental stimulus and forms a conscious reaction to it. In other words, creativity is what human beings do to pay attention, to experience their experiences.

By being creative - paying attention to experience – one may enliven, endure, recreate, explain, envision, and/or preserve experiences through action. Tribal fertility dances and masks, for instance, **enliven** the spirits by bringing them into human beings;

Navaho sandpaintings **enliven** the spirits to heal the sick; knitting baby clothes **enlivens** one's image of the unborn; writing a love poem **enlivens** one's memory of a feeling. Journaling, therapeutic art, grief work in art, and many inventions help individuals to explain their physical expereinces and **endure** their psychological ones. Experience is **recreated** when abstracted in art or poetry, restated in stories and oral histories, and translated into form through art, dance, music, and literature. Experience is **explained** through art, scientific experimentation, mathematical equations, historical writing, literature, tribal art, storytelling. It is **envisioned** with imagery, metaphors, the imagination and through visions, questions, and dream interpretations. And experience is **preserved** when recorded in concrete forms such as portraits, narratives, and sculptures made by "He who keeps alive" - the ancient Egyptian term for "sculptor" (Gombrich, 1995, 58). The product of creativity is not necessarily a commodity or a novel object. The real product of creativity is constructed meaning.

By converting simple experience into constructed consciousness, the creative process transforms the creating individual. One's awareness, understanding, emotional make-up, and history have been changed.

Russian psychologist, Vasilyuk proposed a theory of "living through a crisis" in which an individual engages in "inner work" to reintegrate the self damaged by psychological crisis. (Kozulin, 1990). The term, crisis, can be expanded beyond its

usual meaning as psychological trauma to include any break in the progress of one's normal mode of mental operation, as Lyotard used "crisis of narratives" (1979, p. 71) to describe "a rupture" or "disruption" (Derrida, 1970, 225) in the continuity of a belief system. By enlarging the meaning of crisis to include breaks in intellectualization and knowledge construction, one can begin to view creativity as a process of living through a highly charged aesthetic, emotional, or intellectual crisis by integrating discordant experiences into a world view. For example, Richard Feynman was able to solve the riddle of the space shuttle explosion in 1986 not by pursuing the standard trains of thought of his colleagues, but by focussing instead on the gaps and missing pieces of theory – the disruptions that agitated him (1988).

Vasilyuk goes on to say that the integrative work necessary to live through crisis is "truly creative because the problem facing the individual at the critical point is not in 'recognizing the hidden...existent meaning, but in creating a meaning, in bringing meaning into existence or constructing it" (Kozulin, p. 264). Vygotsky wrote of the transformation of human feeling into aesthetic reaction and believed that to become thought, unconsciousness must be filtered through a mediational process (Kozulin, p. 43). Mediational devices include tools, signs, symbols, and language. By employing these devices, an individual becomes aware of her/his unconscious interaction with environmental stimulus and forms a conscious reaction to it. Because this internal

integration requires mediation via tools, semiotics, symbolism, or language, the result is art, literature, theory, invention, and other creative activity.

People engage in creativity in response to a variety of triggers or breaks in continuity: environmental situations, social or technological problems, strong aesthetic experiences, intellectual discord, and personal trauma. Highly creative people have been shown to be more sensitive to these stimuli/triggers and in some ways better equipped to deal with them. For instance, creative people tend to scan and examine their environments for longer periods of time than less creative people (Getzels & Csikszentmihalyi, 1972), to be astute problem-finders (Glover, 1989), to be highly aesthetic (Barron, 1969a), feel comfortable with ambiguity and delayed closure (Myers & Myers 1990), and to be in touch with emotions (Sandblom, 1992).

With a personal or creative crisis comes tension strong enough to evoke action. Through the resolution of the crisis by constructing meaning, this tension is discharged. The constructing of insight and subsequent release of emotions is known as catharsis. Rogers defined catharsis as that through which an individual finds a situation clarified, develops a changed perception of self, comes to reorient self, and achieves insight (1942, p. 173). Insight, according to Rogers, is a reorganization of the perceptual field. "It consists in seeing new relationships...[and] integrating accumulated experiences (1942, p. 206)." Insight seems to be essentially synonymous with creativity; the only

differences are in the form of the outcome - psychological growth or novel product. Yet, if creativity is a transforming of consciousness through interaction with mediators, then psychological growth, itself, is very much a creative product.

Catharsis is a highly charged emotional experience that evokes powerful affects. According to Vygotsky, there is a "discharge of emotions that build up in a spectator under the influence of a work of art...The cathartic purification...also transforms..." (Kozulin, p. 40). Vygotsky's discussion related primarily to art but can be generalized to catharsis in other domains. In all domains, the emotional strength of catharsis is sufficient to reinforce the significance of a new insight and to motivate one onward to a new way of living or the construction of a creative product.

Catharsis causes a powerfully pleasurable emotional release, "magnificent to experience and impressive to behold" (Seligman in Myers, 1998, 406). It seems to feel much like the emotional experience reported to accompany creativity, especially during illumination/inspiration. When discussing their creative experiences, Eric referred to ecstasy (Gnezda-Smith 1994), Ghiselin to "wholly inexplicable satisfaction or excitement," (1952, pp. 24-25), Canfield to "a strong thrill of intense feeling" (Ghiselin, 1952, 169), Jung to "divine frenzy" (1923, 122), Martindale to "an altered state of consciousness" (as cited in Glover, 1989, p. 216), and a young artist to times when "my heart starts to flutter" (Gnezda-Smith, 1994, 141). In non-western, tribal societies an

extreme emotional high is reported to accompany some creative activities. Navajo healers when engaged in chanting, for instance, reach a state of emotional arousal that causes their hands to tremble, thus their title, "The Handtremblers" (J. Fox, unpublished, 1989). The high emotional state that occurs during creativity sometimes lasts for an extended period of time in what D. G. Myers called an "afterglow" (1999, p. 406) and would be consistent with Csikszentmihalyi's "flow" and Maslow's "peak experiences." In his study of neurological arousal, Martindale may have even documented the neurological energy surge that produces these feelings of pleasure that happen during creativity. The ecstatic affect and pleasurable tension release that gild the creative process may be conceived of as a creative catharsis.

In order for the creative catharsis to occur, specific mental operations come into play. Creative thinking is not ordinary and plodding, but with fantasy and beauty as its guides, it adventures into uncharted waters. The mental operations needed to conduct such a journey and integrate the new-found and discordant information into a cohesive world view include: multi-directional searching, imaging/imagining, aesthetically responding, and synthesizing. Most of these operations are believed to occur in the unconscious during primary process thinking (Jung, 1923, M. Day, 1992, Arieti, 1976).

The concept of multi-directional searching is reflective of Guilford's "divergent thinking," but without the implication of deviance discussed in Chapter 4. It suggests

that the mind sends out mental detectives in many directions at once to search for myriad information and clues that might later be helpful in solving a problem at hand. By so doing, the brain is collecting as much information as possible before attempting to find closure. Delayed closure is a personality trait explained by Myers and Briggs in their discussion of the perceiving personality type (1990). Multi-directional thinking is made possible, according to Mednick and Martindale, by a state of mental low-arousal which scatters thinking and delays closure.

Imaging/imagining are usually visual or auditory and are commonly associated with creativity. According to Day, Arieti, and others, creativity relies heavily on imagery (Gnezda-Smith, 1994). In their self-reports, many eminent creative individuals discussed the role of imagery, as well. Mozart, for instance, talked about the delight of hearing his symphonies "tout ensemble" (1952), all at once, in his mind. Einstein (1952, p. 43).also reported that his ideas came first in images:

> The words or language, as they were written or spoken, do not seem to play any role in my mechanism of thought. The psychical entities which seem to serve as elements in thought are certain signs and more or less clear images...[they] are, in my case, of visual and sometimes muscular type.

Aesthetic response is a main ingredient of artistic work. In making music, visual art, dance, and literature, the creator is continually engaged in a dialogue with his/her work about its aesthetics. Only through the elegance of its form and meaning does a

work of the arts have impact. Even in fields unrelated to the arts, however, aesthetic response is a common characteristic of creative thinking. Poincare, for instance, talked of aesthetics in mathematics when he wrote about "the feeling of mathematical beauty, of the harmony of numbers and forms, of geometric elegance" (Ghiselin, 1952, p. 40). He continued to say that aesthetic sensibility is the sieve that sorts out appropriate responses to the creative inquiry. Buckminster Fuller also saw beauty as the indicator of success in his work. "When I'm working on a problem, I never think about beauty. I think only how to solve the problem. But when I'm finished, if the solution isn't beautiful, I know it's wrong" (Lang, 1998, p. 28).

As the brain engages in a multi-directional search, imagines many ideas and possible results, and participates in silent dialogue about the aesthetics of the ideas being presented, it also attempts to pull together the ideas, trying a variety of combinations until an appropriate and elegant coalescence of thought occurs. This is the process of "synthesis" (Bloom, 1956). Mednick (1962) and Koestler (1964) called it " remote association" and "bisociation." Wertheimer considered it "gestalt (1945). It culminates in an emotionally charged event, the event Wallas (1926) entitled, "illumination," and the Ancient Greeks called "inspiration."

If creativity is the process of mentally reaching out and pulling in thoughts to re-integrate one's world-view in response to environmental stimulus, it is an essential

human act. Does it, then, happen equally amongst all people? The frequency and facility for creativity seems to vary among individuals. It seems that those most adept at creativity possess a set of specific mental abilities that function freely and vigorously. These include both affective and cognitive aspects. Easy access to primary process-style thinking (Jung's concept of a permeable boundary between the conscious and unconscious) allows highly creative people to explore internal, psychic information flexibility and with few inhibitions. Comfort with emotions is a commonly cited trait of highly creative people (Sandblom, 1992). They seem to experience emotions more fully than many others and integrate their emotional information into their work. Perhaps this ability causes them to be more susceptible to mental disorders, especially mood disorders, as many researchers claim. But another theory is possible. Since mood disorders are highly correlated with childhood trauma, perhaps the events of highly creative individuals' personal histories have caused them to become more connected to and make more use of their internal, psychic substance. Perhaps, mental illness and creativity are really parallel effects of childhood experiences rather than the cause and effect relationship many researchers assume, at least in this culture.

Another common characteristic of highly creative people, especially in domains that do not require public performance, is introversion (Myers, & Myers, 1990). That one is energized by internal work and distracted by too much environmental stimulus

(Mendolssohn, 1976), i.e. introverted is consistent with the need for the creative individual to engage in frequent and lengthy pèriods of unconscious, cognitive, and affective work.

The capacity for high levels and high quantities of creative work seems to be dependent on a facility with certain types of mental work and possession of certain personality traits. As a result, the capacity for creativity seems to vary amongst individuals and might be termed a predisposition or even a talent.

The cognitive and affective traits that correlate with high levels of creativity, of course, have been determined according to a Western culture's definition of creativity. Yet, these same characteristics exist in particular members of non-western cultures, as well. For instance, Native American spiritual leaders have traditionally based their insights on visions – uninhibited primary process explorations that result in well-developed imagery and metaphors. Traditional African dancers, as well as Muslim Whirling Dervishes have been known to dance themselves into frenzied mental states described as a trances (a term also used by Ghiselin in his renowned book on creativity in Euro-American culture, 1952). A trance state is seemingly hypnotic or somnambulistic (Ghiselin, 1952) and is much like being submerged in non-verbal, right hemisphere concentration and primary process thinking. In Non-Western cultures many activities which are not oriented toward the production of novelty seem none-the-less to require the

same mental operations and produce similar psychic experiences to creativity as conceptualized in Western culture. Therefore, it seems that the capacity for creativity exists in peoples of all cultures. Within these cultures, it seems that some individuals are more predisposed to creativity than others. The cogent issue of creativity is, therefore, not about novelty in artistic and technological products nor talent for novelty, but is about an individual's propensity for engagement in the mental operations that bring about integration of experience and catharsis.

According to this cognitive-based, experiential definition of creativity, the possibility of creativity occurs during many activities other than art, science, and innovation, including shamanistic medicine, expressive and art therapies, counseling, visionary experiences, oral history, storytelling, ceremonial drumming and dancing, parenting, relationship-building, teaching and learning, grief-work, experimentation with and aesthetic response to nature, home-making, and the choices that determine one's life-style. All commence with environmental stimuli, can lead to internal mental work, require mediation with tools/signs/symbols/language and have the potential for transformation and catharsis. In Euro-American culture, the cognitive and cathartic experiences of creativity have been directed toward and recognized in terms of innovative products. In Non-Western cultures, imminent, cathartic creativity exists/ed but manifests/ed in forms that may be neither product-oriented nor require originality of

style. Creativity clearly exists in a variety of forms but seems to be present in all cultures.

5.2 Summary of Theory

Creativity is paying attention to one's experience via mediational tools, symbols, signs, and language. It occurs in response to discordant or critical stimulus in one's emotional, intellectual, physical, or spiritual life and is similar in result and affect to psychological catharsis. Particular mental operations are employed to produce the integrating, transforming experience of creativity: multi-directional thinking, imaging, aesthetic response, and assimilation. The potential for frequent and high levels of creativity is more likely in individuals with specific cognitive and personality styles and, perhaps, greater access to their emotional lives. Creativity is not limited to the arts, sciences, and technologies, it can occur in all domains, and is not restrictively defined by novel production. It occurs regularly in all cultures, though in many forms and arenas.

Reconceptualizing creativity in this way allows for great diversity in the appearance of creativity. Each individual who is engaged in the mental operations appropriate to creativity and is using mediational devices to experience his/her experience in ways that produce catharsis is being creative. Creativity can now be witnessed in a vast array of forms and a diverse assortment of people. One does not need

to universalize all creative experiences into one form or style, i.e. one metanarrative. Instead, studies of creativity can focus on the particular, as postmodernists advocate (Natoli & Hutcheon, (1993), rather than on the generalized which dismisses cultural, socio-economic, racial, and gender differences as anomalies.

This theory of creativity is, itself, a knowledge construction and is situated in the context of academics and the experience of a white, middle class, female, it seems to be, however, a more open, more inclusive conceptualization of creativity than are the previous, modernist theories. It is grounded in previous research but extends the perspective beyond the constraints of empirical inquiry and the limits of Modern, Euro-American vision. Thus, it is a theory for the Twenty-First Century.

CHAPTER 6

SUMMARY AND RECCOMENDATIONS

6.1 Summary

After the lengthy analysis and subsequent theory building that has occurred throughout this paper, it is necessary to revisit the primary research question: in what ways are the primary theories of creativity sufficient and insufficient in their explanations? Previous theory is sufficient in several ways. Theorists are to be respected for their motivations to explore an intangible, sometimes mystical human experience in a way that might make sense out of it. They, themselves, were reacting to intellectual crisis, integrating their experiences of creativity, and constructing meaning. In the process, they recognized the existence of creativity as an entity. They identified it as a human characteristic. And they defined it as a process. The theories were built upon sound scientific methodologies that were consistent with the expectations of the time. Though the studies were biased by the Modernist belief in cultural assimilation, they did an effective job of describing the cognition and personality of highly creative members of Western societies. As a result, these researchers contributed clear and reliable data about

the nature of novel/original/innovative production – the limited construct of creativity in the Twentieth Century.

The existing theories of creativity were insufficient in other ways, however. They were ethnocentric and exclusive, limited by racial, ethnic, gender, socio-economic, and cultural biases. Not a single self-report in Ghiselin's (1952) acclaimed study of creativity, for instance, was composed by an African-American, Native American, or Asian person.

Modernist theories of creativity were founded, at least partially, on invalid concepts of genius, novelty, and singular authorship. Correlations between creativity and mental illness and creativity and deviance were intriguing and added drama to theory, but were perhaps misinterpreted and misunderstood.

The data and conclusions of creativity research were limited by the constraints of empirical science. Limitations included: restriction to a search for a single variable, artificial laboratory situations, and a need to establish a unifying conclusion.

Twentieth Century theorists presented a linear view of the creative process that was too prescriptive and too restrictive. It did not allow for differing individualized sequences of mental activity, for simultaneity, nor multi-tasking. That it was described as a linear process may actually be the result of a researcher's need to explain rather than of an accurate observation of the process itself.

In addition, the Modernist theories of creativity tended to reinforce current relationships of power and oppression between groups of people. They established and condoned a system of professional elitism that identified as creative only those human beings who were able to navigate the complex social system of intellectual, artistic, and commercial achievement. There was little distinction made between creative talent and professional achievement. They also excluded from the arena of creativity many creative people of color, low socio-economic status, non-avant-guard styles, and who worked in fields that were not traditionally stereotyped and validated as creative.

In responding to the the limitations of Modernist views of creativity, Postmodernism is even more limiting in its interpretation of creativity. Although major Postmodern theorists did not often discuss creativity directly, they did deal with related issues including authorship, knowledge construction, originality, universalizing belief systems, and oppression. Their perspectives on thought left no room for the generalizations and biases inherent in Modernist creativity theory. As a result, it also left little room for a belief in creativity at all. Postmedernism, did, however, make a major contribution to thought about creativity. By bringing into the open disussions of constructivism, positivism, socio-cultural bias, and the need for contextualization of knowledge, Postmodernists have made possible more expansive thought about creativity, including the critques included in this paper.

6.2 Recommendations

Careful analysis of the strengths and weaknesses of the accumulated research and theories of creativity has enabled the development of an alternate theory: an experiential theory of creativity in which a catharsis occurs in response to encounters with life and environmental events. It involves specific types of mental work and results in a transformation of worldview. It is applicable to all peoples, regardless of race, gender, culture, socio-economic status, or degree of public recognition. It locates creativity within the individual and keeps it from being subsumed by a market-based economic and elitist hegemony. It opens up the study of creativity to peoples, situations, fields, and arenas that have heretofore not been included in the research.

To test this more inclusive and wide-reaching theory of creativity, a considerable about of new research needs to be conducted. Included should be a variety of qualitative and quantitative approaches, some of which are

- Interviews and ethnographic study of non-typical creators such as: elderly, traditional tribal artists; young, impoverished, untrained graffiti artists and taggers; street musicians; children; and art therapy patients.

- Interviews and ethnographic study of spiritual leaders and practices in a variety of religious traditions including mystics, tribal leaders, and rituals such as sweat lodges, vision quests, chanting, dancing, and healing ceremonies.

- Interviews and ethnographic study of oral historians and storytellers.

- Interviews and ethnographic study of women, especially homemakers, involved in home-arts such as quilting and other forms of needlework.

- Historical research of saints, visionaries, and religious figures such as Mother Teresa.

- Comparison of the ethnographic studies of diverse populations of the potentially creative individuals mentioned above and the self-reports of eminent creative heroes of the past to determine if any generalizations about creativity may be made across populations.

- Additional neurological studies of creative mental function employing new imaging techniques such as CAT scans, Pet Scans, brain-mapping, etc.

- Comparative studies of psychological catharsis and the "ecstasy" of inspiration/illumination to identify similarities and differences.

- More specific inquiry into the mental operations that are consistently relied upon during creative ideating.

- More in-depth interpretive studies of process, looking for individual variations, simultaneous or linear structure, and consistency in the sequencing and employment of specific stages and/or tasks.

- Open-minded inquiry into connections between mental illness and creativity to determine if there is a correlational, cause and effect, parallel effect, or non-existent relationship.

- After much of this recommended research has been accomplished, additional philosophical inquiry needs to be conducted in order to reconfigure a definition of creativity, one which may have clear, new boundaries or perhaps few boundaries at all.

In recognizing the biases and invalidities of current creativity theory it is natural to feel the discouragement that accompanies deconstruction of cherished belief systems. But it is not a time for death knells. Instead, researchers should re-invigorate interest in

creativity by initiating studies that are more culturally fair, less universal in theory-building, flexible in conclusions, and that foster more open-ended inquiry. It is time to apply the creative process to the study of creativity. The possibilities for new understanding, for intellectual transformation, and for creative catharsis are innumerable.

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