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Personality and the Creative Impulse

Abstract

The psychologist C. G. Jung postulated the creative impulse as a compulsive instinct similar to the animal instincts hunger, sex, aggression and flight from danger. Jungian philosopher James Hillman later considered interactions of this creative impulse, which originates outside the psyche, with various psychic components and archetypes, obtaining six plausible and very different notions of creativity. Here we consider interaction of the creative impulse with the conscious ego, the domain of Jung’s theory of personality types, and then with each of the eight cognitive modes of Jung. This generates eight modes of creativity, of which, according to Jungian theory, about two would be favored by any given person. There are implications for both existing creativity theory and the construction of problem-solving teams.

Introduction

Creativity is an impulse originating outside the psyche like the instincts hunger, sex, fear and flight, according to Jung. But unlike the instincts, creativity is spontaneous rather than automatic. “Like instinct, (creativity) is compulsive, but it is not common, and it is not a fixed and invariably inherited organization” he said.
Contemporary archetypal psychologist James Hillman, himself a follower of Jung, notes that creativity takes many forms (p. 29), more than a hundred according to Taylor. Some of these forms are perhaps difficult to accept as being in any way creative. Hillman explains this potential paradox by emphasizing Jung’s point that the creative impulse originates outside the psyche. Before this impulse becomes manifest in behavior, it must interact with an individual psyche. Different psyches would therefore be expected to produce the varied forms of creativity noted by Taylor and other creativity researchers.

There remain two important questions. What element of “creativity”, being common to all these different forms, characterizes the original creative impulse? And how can the various forms of creativity be classified and related in a compact structure?

Jung himself did not define in detail what he meant by “creativity”, although he did caution against confusing it with artistic talent. Hillman said (p. 45), “The creative is perceived by the ego as inventive problem-solving, anything instrumental to the extension or enhancement of consciousness.” Defining Jung’s creativity in this way as the impulse to solve problems makes it a unifying concept subsuming the many forms of creativity observed. Henceforth Jung’s version will be known as the “creative impulse” to distinguish it from the vaguer term “creativity”. The creative impulse may be regarded as the next higher level of abstraction for the various forms of creativity.

The second question -- how to classify the various forms of creativity -- has been partly addressed by Hillman. By having the creative impulse interact with each of six components of the psyche, he obtains six different forms of creativity (p. 45). His most dramatic result is the destructive form obtained by the creative impulse’s reaction with the repressed Shadow side of the psyche. This urge to clear away the old may seem anti-creative until it is viewed as sometimes needed to make room for the new.

With no claim of completeness, Hillman also examines five other psychic interactions of the creative instinct: with the Ego, the Persona and with three Jungian archetypes -- Father, Puer (child) and Great Mother. The present article only studies eight forms generated by the Ego, or Personality, interaction. It takes advantage of another of Jung’s contributions, his Personality Theory (1990).

Jung characterized the varieties of human personality in terms of eight “cognitive modes” (Singer and Loomis, Spoto, pp. 183-9) or “function-attitudes” (Thompson) generated as combinations of a pair of psychological attitudes (introversion and extraversion), and two pairs of psychological functions, one pair for perceiving information coming in

http://designer.mech.yzu.edu.tw/
(stimulus); the other, for making action decisions based on the information obtained (response). Most individuals favor only two modes out of the eight, the choices to a large extent determining their personalities and associated behavior. It is of interest then to examine the interactions of the creative impulse with each of the eight cognitive modes, for this will generate eight forms of creativity to be known here collectively as the “creative modes”, or, in Levesque’s terminology, the “creative talents”. Individuals may then recognize which two creative modes seem to be generated by their own personalities. They may also learn to perceive and appreciate creative behavior previously overlooked among friends, students and colleagues. Indeed, significant attention has been placed on valuing and directing attention to various types of creativity. This work may further improve the ability to enhance group understanding and the valuation of the various underrepresented modes in a pragmatic setting. It also may explain the superior performance of Stanford’s engineering design teams composed by the first author according to these principles (Wilde).

**Human Personality**

At the highest level of abstraction, Jung’s model describes the human personality in terms of the standard stimulus-response biological model. Viewed as an organism, the human receives external or internal stimuli to which it responds according to its individual character. A given personality therefore is seen as having two parts, a “perceptual” portion (Jung’s term was “irrational”) taking in stimuli and a “responsive” (also called “judging”, or by Jung, “rational”) one deciding what to do given the new information. Thus half of the cognitive, and therefore creative, modes are perceptual and the other half responsive. In Jung’s view, most people favor exactly one perceptual and one responsive cognitive (creative) mode.

Both of these mode classes can be partitioned into two mode pairs according to how they are used and where they get their energy. One mode pair, the “psychological attitudes”, concerns the source of psychic energy for the mode. Energy coming from outside the subject’s psyche is said to be “extraverted”. Conversely, energy originating inside the subject’s psyche is known as “introverted”. Jung noted that the perceptual attitude may, and usually does, differ from the responsive one.

The other mode pairs, the “psychological functions”, are based on how the mode is used. The perceptual function pair has two diametrically opposed functions, as does the responsive pair. But the perceptual functions are in no way opposed to the responsive functions; they are merely different from them. There are thus four psychological functions arranged in
two opposing pairs. The two pairs of psychological attitudes and functions produce four perceptual and four responsive modes, eight in all.

**Perceptual Creative Modes.** The two perceptual functions represent oppositely extreme ways of receiving stimulus information. One “factual” (Jung would say “sensing”) way is to pay literal attention to the perceived messages of the five senses. The opposite “conceptual” (Jung: “intuitive”) way is to filter the sensual information through the psyche, conscious or unconscious, to receive edited messages involving possibilities and patterns behind the bare facts. Note that since these conceptual interpretations are imaginary, they may or may not be correct. There are thus two perceptive modes, one factual and the other conceptual. To obtain Jung’s four fully differentiated perceptual modes, there must also be a differentiation according to attitude.

Consider first the two attitudes applicable to the conceptual functions. The extraverted perceptual attitude draws its perceptions and psychic energy from the outside world. The extroverted conceptual mode resulting thus involves rearranging various elements into new configurations, a process known in chemistry, engineering and architecture as “synthesis”. The interaction of the creative instinct with this cognitive mode is thus called “synthesizing creativity”. The work of Harold Gough, who correlated Myers-Briggs scores with an experimental creativity checklist, indicates that this synthesizing creative mode is the one most identified with “creativity” in the popular mind. But the reader will probably agree that the introverted version of conceptual creativity is also creative, although less detectable through casual contact because of its quieter manner.

The introverted conceptual attitude quietly takes its impressions and psychic energy from within, from fantasies, musings and dreams. It can see external objects as entirely transformed into legendary or imaginary things. This “transforming creativity” is indeed the favorite mode of many fiction-writers, speculative inventors and futurists. Easily overlooked by outsiders in a study like Gough’s, transforming creativity is perfectly detectable by an individual from within, or by a questionnaire dealing with introverted aspects of the personality. In Stanford’s Engineering Design program conceptual creativity appears introverted in about as many students as it is extraverted.

Now consider the two attitudinal manifestations of factual creativity. The extraverted mode involves going out and directly experiencing the world realistically in the here-and-now, responding quickly to changes while fitting in easily with the actual situation. Since one gathers factual information by direct experience and experimentation, this mode is
here called “experiential creativity”. This mode is displayed by experimental researchers, X-gamers, improvisational actors, dancers, acrobats and test pilots, often in spectacular and daring ways. This creative mode is very much valued in Stanford’s Engineering Design program, but in the education setting it appears to the authors that it is in such short supply naturally that much instruction should be aimed at generating it in the more synthetically creative student body.

The introverted version of factual creativity comes largely from memories, education and past experience, supplemented with archival know-how and knowledge from handbooks, libraries and the Internet. Since this “knowledge-based” mode is exactly opposite to the extraverted conceptual or synthesizing creativity popularly viewed as “creativity”, some discussion is needed to justify it as creative at all. Consider the cynical aphorism “Good actors copy; great actors STEAL”. For “actors” has often been substituted “architects”, “writers” or members of any creative profession. It simply means that one need not be totally original in creative endeavors, for something good from another source may well be worth reusing or reshaping to solve the problem at hand. Since the creative impulse is the drive to solve problems, there’s nothing wrong with finding at least some elements of the best solution in a catalog, handbook, or old class notes.

The left columns of Table 1 recapitulate these four perceptual modes of creativity in a structure exhibiting the two-by-two partition that generated them. The right half of the table anticipates the upcoming development of the four responsive modes. The only new elements in the table are people’s names associated with each mode, which will be discussed now for the perceptual modes.

Each name represents someone widely accepted as creative who exemplifies the mode. Thus Buckminster Fuller, the architect of the Geodesic Dome and other counterintuitive structural advances, is a recent example of synthesizing creativity -- extraverted conceptualizing. L. Frank Baum, the creator of “The Wizard of Oz” and many sequels, exemplifies the fantastic imaginative magic of transforming creativity -- introverted conceptualizing. Wilbur Wright, of the famous brothers who first flew a powered airplane successfully, symbolizes experiential creativity. Although only the second to fly at Kitty Hawk (he lost the coin toss), his superior reflexes and daring enabled him to fly four times as far as his imaginative but less practical brother Orville. Finally the inventor Thomas Edison is made the icon of knowledge-based creativity because of his remark about invention being 10% inspiration and 90% perspiration. Since much of his knowledge was generated by his many experiments, he could join Wilbur Wright as an exemplar of experiential creativity.
The opposite “subjective” (Jung: “feeling”) way is to consider quickly the overall situation in terms of human factors and values in order to separate the good from the bad. There are thus two responsive modes, one objective creativity and the other subjective creativity.

There are two responsive attitudes: extraverted and introverted. Since the extraverted response involves careful planning to steer through and guide anticipated external events, it is called informally the “control” attitude. On the other hand, the introverted response is known as the “appraisal” attitude because it takes things as they come, forming opinions about them after they happen rather than trying to influence them in advance.

These two pairs of distinctions combine to produce four different modes. Extraverted objectivity entails impersonal logical arrangement of external things, here called “organizing”, as in the Old Testament “Creation” of order out of chaos. The chemist Mendelejev did this by organizing diverse chemical knowledge into the Periodic Table of the

TABLE 1. THE EIGHT CREATIVE MODES WITH EXEMPLARS

Responsive Creative Modes. The two responsive functions in the two right-hand columns of Table 1 represent oppositely extreme ways of making decisions about information once it has been perceived. One “objective” (Jung: “thinking”) way is to ponder the input information logically and impersonally, considering all factors, screening out inconsistencies, and noting what seems missing, using principles to distinguish correct from incorrect. The opposite “subjective” (Jung: “feeling”) way is to consider quickly the overall situation in terms of human factors and values in order to separate the good from the bad. There are thus two responsive modes, one objective creativity and the other subjective creativity.

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Elements. The exemplar in Table 1 is Henry Ford, whose organization of the production line revolutionized the manufacture of automobiles and other complicated machines.

The introverted objective mode, here called “analyzing”, involves internal reflective reasoning on relations among data and theories. French philosopher and mathematician Rene Descartes’ statement, “Cogito, ergo sum” (I think, therefore I am) makes a good motto for this creative mode. Much scientific theory is created in this way.

Extraverted subjectivity, since it concerns control of or by external human emotional factors, is referred to here as the “teamwork” mode. An example of this mode is the legendary football coach Knute Rockne, who made his “Fighting Irish” team greater than the sum of its parts. His creation? The team itself. Politicians and generals at their best also make use of this mode.

On the other hand, introverted subjectivity is governed by a person’s own values -- aesthetic, ethical, moral and spiritual. Called here the “evaluating” mode, it entails comparing perceived information and potential actions against an internal value system distinguishing good from bad. In leading the independence struggle of the Indian subcontinent, the Mahatma Mohandas K. Gandhi reacted to events in this moralistic creative mode. The civil rights reformer Martin Luther King is another example. Since Levesque characterizes this mode as “poetic”, she would prefer poets to politicians as examples. This completes the enumeration of the eight creative modes associated with the ego.

**Individual Personality**

The preceding eight creative modes encompass the conscious ones available to all humanity according to Jung’s personality model. Although an individual could in principle apply any mode to a given problem, no one would expect easy access to all of them. In practice, most people prefer two of the eight, one perceptual to take in information, the other responsive to decide what to do about it. The reader may find it instructive now to pick out two such personal favorites from among Jung’s pair of foursomes.

In performing this exercise one might encounter a tie -- two equally preferred modes within one of the quartets. Suppose for example one found no clear preference between introverted (transforming) conceptual creativity and the extraverted (synthesizing) kind. The two modes could then be combined into an integrated form known simply as “conceptual” creativity. Jung for instance saw his own conceptualizing creativity as including both
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synthesizing and transforming, for according to Spoto (p. 55), Jung characterized his personality as “introverted thinking with intuition”.

The other seven pairs of creative modes could combine similarly to generate integrated creative forms. This proliferation of terminology is intended not so much to expand the description of creative forms as it is to provide single appropriate terms for use by an individual, Jung for example, who needs it for compact self-description. Thus the attitudinally integrated perceptual creative mode comparable to “conceptual” creativity would be “factual” creativity combining the experiential (extraverted) with the knowledge-based (introverted) modes, Edison for example. Attitudinal integration would produce either “objective” or “subjective” responsive creativity. Functional combination of perceptual modes would bring extraverted perceptual (“exploring”) or introverted perceptual (“concentrating”) creativity. Responsive modes could combine functionally to generate extraverted (“controlling”) or introverted (“appraising”) combinations.

Combination of modes in this way can lead to having three or even four favored modes. Spoto saw three possible advantages in such an integration, of which the most relevant here is greater creativity. Singer and Loomis also noted the greater creativity of such multimodal personalities. (p. 20f).

Some may not even find these distinctions applicable, in which case they can without hesitation characterize their perceptual (or responsive) creativity without a modifier. Given his well-known facility with all the conceptual and factual modes, Edison might indeed have seen his own perceptual creativity in this integrated light. Herrmann’s studies indicate a relatively high frequency of such people among corporation chief executive officers.

Occasionally not two but only one of the eight modes stands out. Spoto (p. 159) says this situation is most likely to occur in adolescence before a second mode is developed. Hence it is relatively frequent among students, even at the graduate level. As they gain experience, many people develop a second or even a third mode, often in mid-life (Spoto, p. 156). He does not imply that any number of modes is better or worse than any other (p. 161). When guessing the creative modes of another person, one tends to underestimate the number because introverted modes are difficult to detect from outside.

Shadow Modes. Although any of these eight modes may be used by an individual at some time or other, only the most preferred, usually two, are definitely associated with the person’s conscious ego. Beebe has formulated a model including all eight modes, of which four are for most people unconscious shadow modes (Harris, Thompson, pp. 104-9). He gives archetypal names “opposing personality”, “witch”, “trickster” and “daemon” to the shadow
modes, which would be manifestations of the destructive creativity proposed by Hillman, as
noted at the beginning of this article. Enumeration of these dramatic and dangerous forms of
unconscious creativity is, however, beyond the scope of this article. For now it is enough to
ponder the implications of those among the eight creative modes that might become
differentiated in a conscious way for any particular person.

Implications for Creative Style Theory

This paper is significant for the study of creative style as it provides an alternative to
current theories. There is significant opportunity for expansion of the theories found here
including quantitative measurement, assessment and practical application. In addition, there is
the potential for great impact on undergraduate and graduate courses that examine creativity,
innovation and problem solving.

The context. Serious inquiry into traits of the creative person began after J.P. Guilfordís
inaugural speech to the American Psychological Association in 1950. In the years immediately
following, many researchers examined the traits of highly creative individuals. Numerous
tests and measures were developed to assess traits exhibited by these highly creative
people. Although research in this area has continued, (Amibile, 1990) the last 25 years has
seen the metaphorical spotlight shift from study of creativity level, to study of creativity
style.

It is interesting that systemic theories of creative style appear limited in number and
acceptance within the creative studies literature and that much of the academic and pragmatic
work focuses on a few previously established approaches and individuals.

The work of Michael Kirton and corresponding examinations of his theories have been
consistent and regular over the last 20 years (Kirton, 1976,1984, 1989, Hills & Gryskiewicz
“Structure of Intellect” model has also gained significant interest from those interested in
creative style (Guilford 1962, 1975, 1982; Bachelor & Michael, 1997; ) Herrmann’s work on
brain hemisphericity and creativity (1989, 1995) has also gained significant interest.

Emphasis on style over level also has related parallels in recent psychological conceptions
of intelligence, (Guilford, 1962; Gardner, 1983) personality typology theory and measures
(Myers & McCaulley,1977; Keirsey, 1987; Hermann 1995) and problem solving (Basadur,
1989; Puccio,1999)
The literature contains numerous examples where these broader constructs, measures and theories have been examined as they relate to the construct of creativity and each other. (Carne & Kirton, 1982; Jacobson, C.M. 1993; Taylor, 1993; Tefft, 1990, Gryskiewicz, 1992)

**An alternative model to current creative style theory.** Our work provides a Jungian perspective and a new approach to the theoretical examination of creative style. The potential pragmatic applications of this work are significant and there may be correlation with established models and measures.

While general personality trait measures have attempted to roughly interpret Carl Jungís view of the psyche (Myers & McCauley, 1977; Keirsey, 1987), no theory can be found on specific structure of creative style as it relates to a general theory of the psyche. This fills that gap and may lead to a new and more comprehensive understanding of creative style.

It is important to note that some preliminary and deductive examination of creativity and Jung has been completed using general personality type measures such as Myers-Briggs Type Indicator (Gough 1977, Taylor, 1994). The literature seems void of whole inductive theory on Jung and creativity.

**Expansion of theory presented in this paper.** Future work on this theory may produce a more unified approach to study of creativity both from a theoretical and practical perspective.

There is significant remaining theoretical development potential, quantitative and qualitative measurement potential as well as potential application to graduate and undergraduate courses in creativity, development of successful problem solving teams, organizational work climate and the creativity practitioner. The implications are beyond the scope of this paper.

**Concluding Summary**

This article has restated Jung’s concept of creative impulse as the drive to solve problems. The conscious ego manifestations of this creative impulse are then classified into eight creative modes corresponding to the cognitive modes of Jung’s personality theory. In addition to these constructive ego forms, other destructive modes generated by the psyche’s shadow have been suggested, although not developed. The current range of creativity theory as summarized informally by Puccio seems to encompass half of these eight conscious modes. Of the four remaining, all but one are more or less built in to contemporary higher education. According to personality theory, an individual would be expected to access only about two of the eight modes. Thus a carefully constructed team would be needed to bring most or all components of
the full creative impulse to bear on a given set of problems. Construction of Stanford’s design engineering student teams has in fact benefited from an empirical forerunner of the theory developed here.

Acknowledgement. Dr. John Beebe reviewed and significantly revised the Shadow Modes section.

References


**Appendix A. Performance of Three Ways of Composing Student Teams**

Following are statistics covering the awarding of the 12 annual Lincoln Prizes to the last 22 years of ME210/310 student design teams. They have been partitioned into three groups to reflect our experimentation with using preference questionnaires to guide team formation. Period I covers the 13 years (1978-1990 and 1996) when students formed their teams without any preference information. Period II includes the 6 years (1991-1995 and 1997) when preference information was used to guide team formation by identifying preference groups each contributing one member (ideally) to every team. Period III is the 3 most recent years (1998-2000) in which Mike McNelly's website has been used to tell students what roles can be inferred from the preference information. The students then form teams seeking diversity of these roles. Actual teams conform only approximately to this suggested model, deviations arising from the inevitable influx and efflux of students from the course.
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<table>
<thead>
<tr>
<th>Period</th>
<th>Time</th>
<th>Total number of teams</th>
<th>Average number of teams</th>
<th>% Silver, Gold &amp; Best Awards</th>
<th>% All Awards</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. No preference info</td>
<td>13 years</td>
<td>150</td>
<td>11.5</td>
<td>9%</td>
<td>27%</td>
</tr>
<tr>
<td>II. Mode distribution</td>
<td>6 years</td>
<td>75</td>
<td>12.5</td>
<td>23%</td>
<td>57%</td>
</tr>
<tr>
<td>III. Role inference (website)</td>
<td>3 years</td>
<td>26</td>
<td>8.7</td>
<td>35%</td>
<td>73%</td>
</tr>
</tbody>
</table>

**Prizes awarded for 3 Team Formation Methods**

Percentages were used instead of absolute numbers because the teams have been getting larger and fewer recently. The table shows progressive improvement as more sophisticated team formation methods were used. Mode distribution more than doubled the fraction of teams receiving awards and almost tripled the fraction getting the top three awards. The role inference website performance for all prizes is almost triple that for no preference information, and almost quadruple for the top prizes.

**Appendix B. Role Diversity and Prizes, Classes of 1998-2000**

The top three lines of the table following show that, in the last three years at least, ME310 teams having more roles covered tended to win better Lincoln awards. On the average, every extra role above eight (out of sixteen possible) raised the expected prize level to the next category. The top three prizes (Best, Gold & two Silver) have been put into the same top category. The other prize category includes three Bronze and five Merit awards. The bottom category includes all non-winning teams except those from 2000, for which data is not yet available.
<table>
<thead>
<tr>
<th>Prize Category</th>
<th>Number of teams</th>
<th>Mean number of roles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silver, Gold &amp; Best</td>
<td>9</td>
<td>10.3</td>
</tr>
<tr>
<td>Merit &amp; Bronze</td>
<td>10</td>
<td>9.4</td>
</tr>
<tr>
<td>Non-winners*</td>
<td>5</td>
<td>8.4</td>
</tr>
<tr>
<td>All students*</td>
<td>19</td>
<td>9.2</td>
</tr>
</tbody>
</table>

* 2000 class data not available

Although the thirteen 1997 teams won eight prizes, data for them was not included here because there were so many teams that the non-winners included many teams with a number of roles that would in later years have given them good chances at a prize. They seem to have been edged out by the competition right here at Stanford! Consequently the mean number of roles covered was virtually the same for winners and losers (9.8 and 10.0). For the three later classes this disparity was 9.8 vs. the 8.4 given in the table. Notice the repetition of 9.8 as the mean number of roles covered by prize-winning teams.

The teams formed in the Autumn 2000 quarter had exactly the same mean number (9.2) of roles as in the preceding three years, although the mean dropped slightly to 8.9 for the new winter teams. This difference is hardly anything to worry about, but there was an important difference in the dispersion. Whereas the autumn team role numbers ranged only between 7 and 11, the winter teams varied from 6 to 13. The main function of constructing teams in the fall without student choice seems then to be fairness — keeping the interests distributed more evenly among teams, at least to begin. It will be interesting to see how the three least diverse teams (one 6 and two 7s) are regarded by the Lincoln Foundation this year. There was only one team with as few as 7 roles in the autumn quarter.

By the way, three of the 23 prizes captured here since 1997 were won by teams with only 7 distinct roles. On two of these, however, the two synthesis roles (Innovator and Entrepreneur) were covered twice but only counted once. This is not something I would like students to know, for it might lead to groupings of people favoring these roles, to the detriment of other teams that need them.