THE PSYCHOLOGY OF CREATIVITY

"There is no doubt that creativity is the most important human resource of all. Without creativity, there would be no progress, and we would be forever repeating the same patterns".
Edward de Bono

Coincident with Chomsky's critique of Skinner, the tide in theoretical psychology began to turn: Human behaviour could not be accounted for in terms of learned habits – there was creativity throughout all expressions of mind and behavior. The psychologist, Karl Lashley, in fact, had argued years earlier that basic motor behaviors were self-generated and self-organized rather than simply retrieved from literal records within the brain and nervous system. Even human memory, which could be seen as simple retrieval of engrams in the brain, increasingly was seen as a creative process; the past is reconstructed rather than played back in the human mind. The human mind exhibits novelty and inventiveness in much of what it does (Gardner, 1985; Baars, 1986).

Still, humans display degrees of creativity, and psychologists such as Abraham Maslow attempted to identify what personality characteristics were connected with notable creativity in behavior and thinking. Maslow formulated his theory of self-actualizing individuals (similar in ways to Rogers' "*fully functioning persons"*) in whom creativity is especially pronounced. Self-actualizing individuals are autonomous; growth motivated; open to new experiences and learning; spontaneous and "fresh" in their thinking and behavior; playful; ethical; and have high frequencies of peak experiences. At the opposite end of the psychological continuum would be individuals who are more conformist; more motivated by stability and security; and more defensive and closed to new learning and new experiences. Hence, degree of creativity was connected with personality type (Hergenhahn and Olson, 2003; Maslow, 1968, 1972; Rogers, 1961).

Research in split-brain operations (involving the severing of the corpus callosum which connects the two cerebral hemispheres in the brain) conducted by Roger Sperry and Michael Gazziniga (Sperry, 1964, 1968), presented the view that each cerebral hemisphere seems to specialize (to a degree at least) in complimentary functions. The left hemisphere appears more logical, analytic, sequential, detail oriented, and rule governed; the right side appears more intuitive, holistic, simultaneous, and unbound by rules (Hampden-Turner, 1982). As this view gained currency, it was generally accepted that the right hemisphere was the creative half of the brain. The idea from Gestalt psychology that creativity involves holistic thinking seemed to support this view. Holistic insight and/or intuition – the self-organizational dimension of the mind – is where creativity lies. It became popular to develop learning activities that would strengthen right hemispheric capacities (visualization, intuition, big picture thinking) presumably to enhance creativity in individuals. Yet, as the Gestalt psychologists also pointed out, the first and final stages of human creativity involve logical and analytical processes (study and verification), and in considering a fully functional (integrated) brain, it is the working together of right and left – of intuition and logic, of big picture thinking and analysis – that yields intelligent, verifiable and valuable creative results.

In the 1960s Arthur Koestler wrote *The Act of Creation*, a monumental and inspiring study on the history and psychology of human creativity (Koestler, 1964). Pulling together research and thinking from numerous areas – itself an act of prodigious creativity – Koestler presented his "*bisociation*" theory of creativity. For Koestler, high creativity involves synthesizing two (or more) ideas from disparate or disconnected domains; it is seeing the previously unrecognized connection between things. Koestler's description of how Kepler "*bisociated*" the question of the form and dynamics of planetary motion with the structure and dynamics of the Holy Trinity – thus providing a scientifically accurate understanding of the elliptical orbits of the planets around the sun, as well as a theory of astronomical gravity – is a fascinating discussion of the creative mind. Knowledgeable about both of these seemingly disconnected areas of study, Kepler connected them in a way no one could have imagined, thus providing a perfect illustration of Koestler's idea that creativity is the synthesis of already familiar yet disconnected elements. The new builds upon the old through the synthesis of existing elements but the particular insightful combinations realized are unique.

More recently, positive psychology has contributed to the study of human creativity.

Barbara Fredrickson has proposed the "Broaden and Build Theory" of positive emotion and cognition. According to her, positive affective states, such as love, have a constructive impact on cognitive capacities, making the human mind more expansive in scope, more sensitive, more transformational, and more creative. Negative emotions, such as fear and depression, have debilitating effects on intelligence and thinking (Fredrickson, 2005). Thus it is interesting to note, that contrary to the idea that stress provokes creativity, Fredrickson, in line with Rogers and Maslow, sees love, joy, and emotional exuberance as more conducive to creativity.

It is clear that cognitive and emotional processes form a reciprocal or interactive relationship within the human mind, each impacting the other. Negative cognitions tend to produce negative emotional states and vice versa. Hence, as a general rule upbeat emotions such as love, hope, enthusiasm, and courage positively impact human thinking – including creativity – whereas negative emotions such as fear, anxiety, sadness, and depression damp out effective and creative thinking.

Bringing human motivation into the picture, recall that Maslow saw self-actualizing individuals as more growth motivated than stability motivated. Individuals can be more or less motivated toward what is new and different; more or less motivated toward security, safety, and stability. What is new – what is a change in one's way of thinking or behaving – is risky though; seeking out and believing in the new requires courage and hope. Adventure and uncertainty can generate fear and anxiety in humans, pushing them back toward stability and security. Yet, creativity clearly involves sticking one's neck out into the unknown and uncertain. Hence, stability and security motivation (often driven by fear) works against creativity, whereas courage, risk taking, hope, and growth motivation support creativity. It is a common view that creative people are more non-conformist in their personalities and lifestyles, willing to be different, willing to be risky.

As the contemporary philosopher, Paul Feyerabend (1970) argued, "*certainty is one of the cheapest commodities*". A life ruled by the need for certainty and hence mental security is not conducive to creativity. Creativity involves the courage to be wrong, to take chances, to stick one's neck out into the unknown. In fact, highly creative people find it exhilarating to take chances without knowing for sure whether their actions or ideas will pan out; that is the appeal of it. One could propose that highly creative people live more in the future – in so far as the future involves novelty and change – than in the habits and securities of the past.

Mihalyi Csikszentmihalyi, one of the leading modern positive psychologists, has devoted a great part of his career to the study of creativity and flow. For Csikszentmihalyi, "*flow*" is the psychological state in which a person is immersed in a challenging task that requires maximal focus and engagement. Optimal flow is the reverse of either paralyzing anxiety (the task is too difficult for the person's talents) or boredom and tedium (the task is too easy). When a person is in flow, the task requires the full exercise of his or her highest capacities; the person is relatively unselfconscious; and the activity is found intrinsically rewarding, generating a positive affective state. Flow generates creativity. Flow also generates growth and self-actualization. Hence, although there are clearly cognitive elements involved in creative flow, the motivational – emotional factors also play a role. Creativity occurs at the cutting edge of human effort, where the challenge is difficult enough to make the outcome uncertain. A certain amount of stress and risk is necessary – not too much, not too little. As Csikszentmihalyi points out, this is motivating and critical to human happiness (Csikszentmihalyi. 1990, 1996; Csikszentmihalyi and Nakamura, 2005).

Logic, learning, and holistic insight/intuition; synthesis and integration; right and left brain complementarity; cognition, motivation, and emotion; personality and individuality; challenge, sustained effort, and concentration; a conducive environment; and a lifestyle that embraces adventure, uncertainty, non-conformity, and a positive attitude toward the future: all are significant contributory factors to human creativity.

References:

1. Th. Lombardo. Creativity, Wisdom, and Our Evolutionary Future.// Journal of Futures Studies, September 2011, 16(1): 19 - 46

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