Ever since the dawn of human history the world has been a witness to epochs of great creative activity. The innumerable discoveries, inventions, and innovations are but a testimony to man's perennial urge for creation. These are reflected from agriculture to astronomy; from medicine to music. The knowledge in all these domains is enriched by creative people - the scientists, the gifted, the genius as they are variously called. But the noble task of bringing home the processes that underlie the gifted is meted out by psychology, and, to the psychologist "creative thinking is one of the many kinds of thinking which range from autistic fantasy and dreaming to logical reasoning", and "to some extent to partake of both the extremes". (Vernon, 1970). Such an understanding of the genius is gaining momentum only in recent times. In the pursuit of an understanding of creativity one is bound to experience a kaleidoscopic vision of awe and confusion al
As a testimony to this uncharted area, the word 'creativity' did not make its appearance in the Oxford English Dictionary as late as 1933. The year 1967, marked the first publication of the Journal of creative Behaviour, and the years following witnessed a steady growth of investigations into the field of creativity.

The concept of creativity, is so elusive that the efforts at unravelling its nature are met with both rewards and disappointments - rewards in the sense that new horizons are made visible and disappointment in so far as much remains ununderstood. One can see ample historical precedent in this regard, but the efforts to probe 'creativity' are just a peep through the keyhole making visible only limited areas of the lives and processes of creative individuals and their work.

The number of researches in the field of creativity is growing fast. But the majority of studies have so far limited themselves to offering training in creativity programmes, in educational set-ups, in tapping creative potential outlining qualifications for counsellors, teachers and administrators.

In the year 1953, Morgan (1953), published 25 definition of creativity, and subsequently many more have been added.
Some of the important ones are:

For Mackinnon (1962) creativity ..... "involves a response or an idea that is novel or at the very least statistically infrequent ..... must to some extent be adaptive to, or of, reality. It must serve to solve a problem, fit a situation, or accomplish some recognizable goal."

Rogers (1962) asserted that creativity is the same wherever one finds it; in painting a picture, composing music, inventing a new instrument of killing or dividing a new scientific theory.

Stein (1963) thought of creativity as manifesting "in a novel work that is accepted as tenable or useful by a group at some point in time."

Barron (1965) stated that "creativity may be defined quite simply as the ability to bring something new into existence."

Rollo May (1959) thought of creativity "as the process of bringing something new into birth."

Murray (1959) envisaged creativity in the occurrence
a composition which is both new and valuable. 'New' in the sense that the entity is characterized by novelty, and 'valuable' denoting either intrinsically or extrinsically valuable as such to others, and capable of generating valuable compositions in course of time.

For Mednick (1962) creative thinking expressed itself in the formation of associative elements into new and useful combinations. The criteria assigned to responses in order to be creative are the number of associational responses as well as the uniqueness of the responses.

Wallach and Kogan (1966) run parallel to Mednick in defining creativity both in terms of several and unusual responses.

Torrance (1969) defined creative thinking as "the process of becoming sensitive to problems, deficiencies, gaps in knowledge, missing elements, disharmonies and so on, identifying the difficulty, searching for new solutions, testing and retesting the hypotheses .... and finally communicating the results."

Stoddard (1959) meant that the "creative act at its highest brings about notable differences in things, thoughts, works of art and social structures."
One of the references in the Indian context defined creativity as ("Nava Navonmesha Shalini Pratibha") that which blossoms in an individual with newer and newer forms. (Sushil Kumar De, 1960).

The overall emphasis of these definitions has been about the development of something 'unique', or 'original' with an element of 'surprise' and 'usefulness'. However, the term 'Uniqueness' has not been clearly defined, though Koestler (1977) described it as the 'junctional clash'. He narrates an analogy that "a philosopher misunderstood by his contemporaries, is still a philosopher; a humorist who does not make his audience laugh is not a humorist. Therefore the comic technique, for eg., is the effect of surprise, depending on the ingenuity and uniqueness of the individual".

Welsh (1973) has been fairly successful in imposing some order where chaos prevailed. He emphasized one or more of the following four aspects. (i) Process: i.e., how a creative act is brought about by way of explaining the principles that underlie such an act. (ii) Person: The creative individual and his personality forming the main aspect. (iii) Press: The definitions in this category concentrate more on the environmental factors that influence and individual towards creativity, and (iv) Product: The
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creative act as an outcome is largely examined for its utility and usefulness.

THEORIES

GUILFORD’S STRUCTURE OF INTELLECT THEORY

Guilford’s presidential address to the American Psychological Association in the year 1950 has been a big leap in the field of creative thinking. He put forward the structure of intellect model to re-define intelligence, consisting of 3 sets in the main, based on factor-analysis. (a) Operations: (evaluation, convergent thinking, divergent thinking, memory and cognition, (b) Products: (units, classes, relations, systems, changes, implication), and (c) Contents: (figural, symbolic, semantic, behavioural), which ultimately give rise to 120 separate abilities. His contribution to creativity lay in distinguishing between abilities for divergent thinking and abilities for convergent thinking. It was discovered that the “divergent thinking moves away, as it were, from responses already known and expected. Convergent thinking moves toward responses that fit to the known and the specified”. Accordingly greater stress has been placed on divergent thinking abilities like originality, fluency of ideas, flexibility, sensitivity to defects and missing elements; ability to elaborate and re-define were also included.
Traditional measures of intelligence emphasize a right or already known answer, and anything else would be a wrong one, thereby falling in line with the convergent thinking. On the other hand, divergent thinking encourages considerable searching making room for more alternatives. New methods of tackling the problem allow greater freedom to proceed in several directions.

**PSYCHOANALYTIC THEORIES**

Freud (1958) attributed creativity to repressed unconscious wishes, pregenital and libidinal urges, and sublimation. For him, an artist is primarily an introvert, not far removed from a state of neurosis. Anthony Storr (1976) notes that psychoanalysis did not distinguish between bad art and good art; "more importantly, between a work of art and a neurotic symptom". Eissler (1962) observes that in the genius all psychic processes that support sublimatory processes are egosyntonic and belong to a special category of psychopathology which is essentially different from all other forms of psychopathology as set forth in textbooks of psychiatry. This is the psychopathology of the genius, which is not amenable to criteria derived from the non-genius". Kohut (1957) describes music as mostly a cathartic experience similar to transference phenomenon. For Fenichel (1946), dramatic arts would afford a certain erogenous satisfaction
of an exhibitionistic kind. Anna Freud (1968) too attributed the process of sublimation more to the study of the normal than to neuroses. While analyzing pathology Kubie (1958) states that creativity is blocked, distorted, and corrupted by neuroses, thereby suggesting that neuroses and creativity are opposed.

For Adler (1938) it was the feelings of inferiority that formed the compensation drive in the creative artists.

Jung (1938) viewed the entire artistic creativity in terms of "autonomous complex", which emerged from the unconscious as well as racial or collective unconscious. He endorsed Freud's view of creativity, which he brought under the 'psychological mode', wherein the "material is drawn from man's conscious life" by way of emotions, experiences, passion etc. But Jung's emphasis was more on the other mode of creativity called 'visionary', which "comes upon the person in a great surge from the depths of the unconscious; Prophets, seers, visionaries, poets", ..... and those who "are open to the 'night-side' of life and are willing and able to attend to the messages that side forth". (June Singer, 1980).

Neo-Freudian views of psychoanalytic theory have resulted in the evolving of the concept: 'regression in the
service of the ego' as put forth by E. Kris (1953) one of Freud's disciples. Accordingly, the ego occupies a key role capable of navigating beneath the conscious level. To carry out the task, the ego has to be autonomous and strong enough to withstand the material that erupts at the 'unconscious' depths. This refers to the "partial, temporary, and controlled lowering of the ego's function that promotes adaptation" and hence the term adaptive regression (John Suler, 1980), or "ego-controlled regression".

Kris proposed two phases in regression in the service of the ego by way of regression as well as progressions... (Primary process and Secondary process). This involves the ability of a mature ego to linger in both areas, and communicate his experience to others in the form of creative art. John Suler (1980) thought that the "pre-conscious is perhaps the area in which primary and secondary processes converge and in which creativity is maximized".

ASSOCIATIVE THEORIES OF MEDNICK AND WALIAS

(A) Mednick (1962) proposed a theory of creativity involving the building up of associations between stimuli and responses (S-R). Given a stimulus word, an individual would have a hierarchy of potential responses. A divergent or the creative person is supposed to link stimuli with highly
unlikely responses, whereas most people would link such responses which are frequently associated in the past. A creative individual's responses will be linked in a skillful and effective manner which are useful, and memory does not play a major part here.

Based on this principle, Mednick constructed the test called "The Remote Associations Test" (RAT). Each item on the test is provided with three words which have some common association and the subject is required to provide a fourth word which has common associative links with all the three words. The finding out of the fourth word or the solution for the problem is attributed to any of these 3 ways by Mednick (1962) 1. Serendipity (hitting at an answer by chance or accident). 2. Similarity (associative elements appearing in the form of contiguity, pattern, or a rhyme, and this does not operate at the symbolic level). 3. Mediation (different elements are associated at the symbolic level, and scientists are supposed to belong to this group).

William Blake, (Davis Scott, 1971) a great artist and poet surprisingly speaks on similar lines as Mednick does regarding the solution of problems (like serendipity, similarity, and mediation) and goes a step ahead by
attributing transliminal perception to "fourfold vision". Single vision, for him is merely the consensus of opinion, or just the physical eyesight which makes us think it is real. In twofold vision, an element of imagination enters (when we think of two human beings at the sight of clouds or as two dancers at the sight of an ink-blot, and in threefold vision we do not see the object "similar to" or "differently", but it is seen as symbol, wherein the reality is transcended. "It is the medium through which a superior vision of reality is sought; it amplifies the poor real world by an act of imagination. The symbol, the play, the dream - these are the manifestations of threefold vision". Fourfold vision is a step still beyond, wherein "it is the mystics' vision suffused with intense feelings of awe, ecstasy and desolation".

(B) WALLAS FOUR STAGES OF CREATION (1926)

Wallas saw roughly the continuity of a process with a beginning, a middle, and an end in the birth of a new generalization or invention. Out of the four stages - preparation, incubation, illumination and verification, the first three were already proposed by Helmholtz (1891). Helmholtz described the "preparation stage as an investigator in all directions and getting acquainted with the problem." The incubation stage refers to the problem "not occasionally."
thought about', and the third is the culmination point with the appearance of the 'happy idea', the 'aha' experience', or an 'Eureka feeling' as Rogers (1962) put it. It is often said that a "poet is one who doesn't know what to say, until he has said one". An apt simile is presented by Charles Baudouin (1954). He cites the instance of a leaf falling into a hidden stream after which it is not possible to seize it while traversing in the subterranean current through the region below, and after a while the leaf wells up far away in a different place faithfully, and so the ideas or thoughts suspended in the unconscious mind emerge with a remedy or solution after some time, without the individual being aware of it. The analogy is referred to explain the superficiality of discontinuity in one's awareness.

Guilford prefers to use the work 'phases' instead of 'stages' as there is no 1-2-3-... order in them. "There is much overlapping of events and much backtracking" and as such the stages seem to be arbitrary.

CREATIVITY AS AN INTELLECTUAL DRIVE.

This is not a unified theory of a specific nature. The origins of this idea lie in animal psychology in the form of exploratory behaviour or the curiosity drive. Thorndike (1931) extended the idea that man wants to function intellectually as he possesses a well-developed brain.
Koestler (1964) provides valuable and thought provoking insights into the field of creativity. He lays stress on the processes that take place beneath the conscious mind. "The creative act, in so far as it depends on unconscious resources, presupposes a relaxing of the controls and a regression to modes of ideation which are indifferent to the rules of verbal logic ...." Verbal thinking too, he contends to be "most vulnerable to infectious diseases", and thereby language stands like a screen between the thinker and reality. "This is the reason why true creativity often starts where language ends". In Anthony Storr's observation too (1976), language holds a secondary place. For him language "implies some degree of physical distance. In Psychoanalysis words are representations of reality, not reality itself. Using words descriptively, for example, already implies some division of subject from object; a recognition of a thing 'out there' which is separate from itself". 

...
Rogers (1959) treated this at some length and called creativity an "innate orientation", drive such as "self-actualization", and to "become his potentialities". For him "Creative act is the natural behaviour of an organism". A child inventing a new game or Einstein formulating the theory of relativity, or a housewife experimenting a new sauce - are all creative, without being "more or less" of it. Even when a powerful destructive weapon is devised, it gets the sanction of creativity, though the social value attached to it is otherwise. Therefore it is a more relative issue. Parnes (1963) confesses that "we still know little about what 'creativity' really is. But we do know how to stimulate greater creative behaviour in individuals". This observation is more relevant from Maslow's theory. Maslow proposes that a creative man is one whose basic needs (physiological needs; safety needs; love, affection and belonging needs; esteem needs and need for self-actualization) not satisfied is like a man who is sick lacking vitamins and minerals. Self-actualization is the prime-motivation allowing one to become what he is capable of becoming. He says "What a man can be he must be".

Maslow (1968) lists the following regarding creative cognition: flash, inspiration, peak experience, hard work, unrelating criticism, and perfectionistic standards.
Creativity may be seen in any of the three domains - humour, discovery, and art, and they fuse each other without any sharp boundaries. In this regard, Koestler is more close to Rogers. The process of creation is due to what Koestler calls the "bisociation" principle. Bisociation is said to take place when a new idea sparks off in the functional clash between two unrelated concepts or dimensions of experience. The idea that sparks off comes as a surprise, and till then it would be hidden. For eg: "The Super ego is that part of the personality which is soluble in alcohol" (Koestler, 1964). Bisociative phenomena may also occur in the "dreamlike fluidity of imagination in several forms like - the substitution of vague visual images for precise verbal formulations; symbolization; concretization and impersonation; mergers of sound and sense; shifts of emphasis, and reasoning in reverse gear, etc.

In similar vein to Koestler's bisociation principle, Rothenberg and Albert (1971) emphasize "Janusian thinking" in creativity. By Janusian thinking, they mean "the capacity to conceive and utilize two or more opposite or contradictory ideas, concepts or images simultaneously "which operates in art, literature, architecture, music, science and mathematics". The main idea though made explicit by Koestler and later by Albert, the roots could be traced as far back as Aristotle.
... wrote "the greatest thing by far is to be a master of metaphor, it is the one thing that cannot be learnt from others: and it is also a sign of genius, since a good metaphor implies an intuitive perception of the similarity in dissimilars".

NEUROPHYSIOLOGICAL THEORY

There is also a neurological explanation which states that the brain as a mechanical entity has a potential, a million times more powerful than any electronic counterpart (Osborn, 1960). New light was shed by studies of Gazzaniga, Bogen, and Sperry (1962) whose patients had the fibre bundles between the cerebral hemispheres cut surgically to control epileptic attacks. The research revealed that the two "halves of the brain are essentially two brains, nearly identical in conformation, but differing in what they do, "In right handed people, the left hemisphere is primarily concerned with verbal behaviour and analytical tasks, whereas the right hemisphere is concerned with more global tasks such as imagination, space perception, and music..." the left hemisphere acts like a stimulus-response brain, and the right acts - like a Gestalt brain. The relationships may be reversed in left handed people. Warnad and Steven (1972) studied the lateral eye movements of ten mathematics professors and twenty four mathematics graduate students
during an interview. They found that those who looked left while reflecting used more imagery, were more artistically diverse, and were rated as more creative than those who looked right. Among laymen also the left-movers scored high on Remote Associations Test, and made more extreme aesthetic ratings. Results indicate that the non-dominant hemisphere may have some role to play in creativity.

Farrell (1979) examined the effects of poetry capable of bringing about altered states of consciousness. He acknowledges Julian Jaynes' view commenting on the poetic rhythm, the function of which "is to drive the electrical activity of the brain, and most certainly to relax the normal inhibitions of both chanter and listener" and this is made possible due to the rhythmic sound of the poetry, an element which he thinks is similar to the effect in the visual system, 'photic driving'. He also found evidence in the works of Larson, though not fully conclusive. Larson (1978) found the activation of both the hemispheres due to cerebral bloodflow during speech tasks. The verbal content of the poem is believed to stimulate the left-hemisphere; while imagery, primary process material, and divergent thinking stimulate the right "resulting in an altered state of consciousness".
CREATIVITY WITH REFERENCE TO MENTAL HEALTH

"The interest in creativity is ancient", and its relationship, if there is any to mental health has been a thought provoking issue since more than a century. A volley of questions have been raised, people have debated in conferences, a host of doubts expressed, and what was empirically found could not be often replicated or generalized, leaving one no wiser than what he was, except for occasional, revealing glimpses. The investigators, quite often have painted the creatives black and only occasionally with rich colours.

Plato believed it to be a divine gift, over which the individual has no control, and thought "that our sober senses must be clouded either by sleep or some malady, or lifted from its place in heavenly rapture". Similar view has been expressed in the lines of Tagore, "I am a dead reed, but you make it a flute by blowing various tunes through me over vales and hills".

By about late nineteenth century, creativity-psycho-pathology relationship took some shape, though vague in the studies of Galton. (Hereditary Genius, 1892). He was interested in human abilities and found the hereditary linkages among relatives and at different levels of nearness amongst men of genius. He found a positive relationship
between nearness of relationship and creativity. By about the same period Lombroso thought the genius was a manifestation of the diseased mind, accompanied by many signs of pathology.

Havelock Ellis (1904) selected 1030 eminent names in Britain based on the Dictionary of National Biography, out of whom 975 were men, and 55 women, and discovered only 44 (4.2 percent) who were suffering from mental illness. As the occurrence of mental illness was very low in his observation, he concluded — "We must put out of court any theory as to genius being a form of insanity".

Kretschmer (1931) noted psychopathic element along with a high degree of talent. John Dryden wrote "Great wits are sure to madness near allied".

Bisch in his book "Be glad you are a neurotic" observes Jung as having remarked that "all neurotics possess the elements of genius, and "the neurotic who succeeds is undoubtedly far happier than the non-neurotic". He writes with a challenging note — "take Alexander the Great, Caesar and Napoleon, consider Michael Angelo, Pascal, Pope, our own Pope, O Henry, and Walt Whitman. And what of ....... Stevenson ...., Goldsmith .... ? The list could be lengthened indefinitely, and everyone of them was a neurotic .......
usually, the greater they were the more neurotic they were".

Anthony Storr (1983) subscribes to the same view while commenting on people like Virginia Wolf, Balzac, Winston Churchill and others who showed "depression in common, even if nothing else provoked by a work block". The famous playwright Strindberg (1962) wrote "I write best in hallucinations", and Anthony Storr observed that the fantasies which he produced were undoubtedly psychotic ......, but he himself was not".

It is possible only to a "genius or a madman to disentangle himself from the bonds of reality as to see the world as a picture book", as Schopenhaeur did, or as Blake expressed "I can see the whole world in a grain of sand". Thus, the above instances point to the ambivalence and controversy in deciding the role of mental health which is not an easy task.

Storr (1972) in this connection remarks that the creativity - insanity relationship did not originate in the observation that the creative people had more neurotic or psychotic symptoms than others, "but in the feeling that both creative people and mad people had mental experiences which the ordinary person found in comprehensible or did not share", and this inner experience in the initial stages
Nietzsche called "life in creativity is a mess."

There are studies suggesting greater vividity of imagination in early childhood. Prodigies like Mozart started composing at the age of 4, and Erwin Nyiregyhazy the gifted musician also started composing before the age of 4 with perfect pitch which was the subject of intense study by the Director of the Psychological Laboratory, Amsterdam. But the argument swings to the other extreme when there are individuals like Ralph Waldo Emerson, who wrote his biography at the age of 75; Milton writing 'Paradise Regained' when he was 62; Mark Twain completing two books at 71, George Bernard Shaw having won the Nobel Prize when he was 70 years and so goes the list. Instances like these indicate the controversial nature of the question of age versus creativity.

Likewise several other factors influencing creativity - motivation, role of tensions and frustrations, conditions like poverty, effect of environment, indulgence in sex, creativity itself as a defence, have been the focus of several researchers.