Chapter I

Introduction
CHAPTER-I
INTRODUCTION

1.1 INTRODUCTION

DAWN......

The sun peeps out from the horizon, splitting its gentle rays on the rocky walls of unknown cave. The moon quietly bows away with zillion stars in tow. A cave man, hard like the stones work watches the dawn as the wind plays with its unkept hair as if the cry of a new born drifts into ears. He stands motionless, entranced, unable to articulate, gone ecstatic at the first sight of rainbow and its seven colours in the sky. He must be bewildered and at the same time bamboozled to see the magnificent sun rise glazing somewhere in the sea of water making it looked all golden, birds chirping the songs in praise of unknown, all fanciful beauties of flowers, trees, butterflies, waterfalls .... Little does he know that he has been mesmerized by the power of the creator and his creation.... the God.

It had certainly triggered his imagination cultivating into the form of art. Since man is creation of God, the Supreme mind, he imbibes the quality of imagination from the supreme power only.

The traits of imagination cultivating into creativity of some artistic, scientific or religious formations makes the man stand on a higher pedestal above all other living beings. He is overjoyed to see the enormous beauty of nature and his creative mind combined with imagination is source of all cultural, social and scientific achievements.

The almighty God, the Creator of the universe, is the supreme creative mind who possess the finest abilities of creativity. He has created all of us and all that is revealed in nature.

Because man is created by God in his own image there exist some creative attributes in him which enable him to possess the capacity and capability to think and act creatively.

It is not easy to come to the term with somewhat nebulous intangible but strongly fascinating concept of creativity.
The psychology of man is impossible to capitulate without understanding man’s ability to create. In fact, the man without a creative tendency is merely “a beast who walked talks.”

The attribute separating man from other beings is his mind with creative imaginations, it is the source of man’s cultural achievements. Unlike practical intelligence (The process of attaining a necessary goal through trial and error), creative imagination transcends the threshold of consciousness and through a visionary quality, man makes efforts to actualize it.

Creativity is the only phenomenon which separates man from machines and animals. It is a vision and actualization of that vision. Which is a unit; it is complete and pragmatic. Just as night gives birth to day, the seed to plant, an ovum to a child; so too a creative vision, gives birth definitely to a creation and its actualization produces scientific, artistic or religious formations. The awareness of such creative vision produces happiness and joy within the person.

Since creativity is exclusive human trait, it helps him achieve dignities and meaningful life identical to this infinite universe.

Advanced countries are more keen in study research and development of creativity than the third world countries whose survival depends on creative vision for needs and masses. Moreover enhancing creativity is the most certain way of uniting mankind.

UNESCO is positive in its stand that while both knowledge and creativity are useful in itself, they are also indirect contributors to international understanding and peace. In the words of our former president-APJ Abdul Kalam.....

“When learning is purposeful, Creativity blossoms When creativity blossoms, Thinking emanates When thinking emanates Knowledge is fully lit When knowledge is lit, The economy flourishes”
Human flight is nothing but imagination and creativity of the human mind and it underwent several struggles to achieve excellence.

In 1890, a great and well-known scientist Lord Kelvin, who was the President of Royal Society of London, Said, “Anything heavier than air can not fly, and can not be flown”. Within two decades, Wright Brothers proved, man could fly, of course at heavy risk and cost.

In India many innovations took place at various phases of our development. In the 1960s, Dr. Vikram Sarabhai said that India should design and develop a large satellite launch vehicle and put a communication satellite and remote sensing satellite in geo-synchronous orbit and polar orbit respectively. In India, it was thought impossible. But this visionary statement ignited hundreds of scientists and technologists and thousands of technicians. Today India is capable of building any type of satellite launch vehicle and remote sensing satellite in polar orbit as envisioned by Dr. Vikram Sarabhai.

“Every man has the need to use his energies and powers in creative work. Whether it may be in the area of agriculture of mechanical labour or craftsmanship or office activity or in the case of women, the development and enrichment of home, there is no man or woman who can find true happiness if creativity is thwarted”

---William L. Doty.

Torrance (1977) in his paper on “Uses of Creativity Tests in Education” has pointed out various implications of creativity tests. According to him creativity tests are of vital significance....

a) For obtaining more complex understanding of human mind, personality and their functioning behaviour.

b) As a possible base for individual improvement.

c) As a part of process of guiding mental growth, as an indicator of mental health status and as a source of clues for remedial and psychotherapeutic programmes.

d) As a means of assessing differential effects of various kinds of experimental programmes, new curricular arrangements, teaching procedures and the like.

e) As an indicators of growth potential and future needs.
Creative behaviour is necessary for — increasing personal satisfaction, enhancing problem solving abilities, fulfilling our potentials and so on. It is necessary because the complexity of our world is increasing exponentially day by day. Our survival as species is dependent on our ability to respond to world problems with creative solutions, like global warming, ecological balancing, fuel shortage, food shortages, nuclear proliferation, nuclear waste disposal, disease, pestilence, spoilage of the environment, crime, urban blight and so on……

The problems of the world seem to be growing faster than our ability to cope with them. Old solutions to old (and new) problems are not working.

There is a need to empower the students to explore new avenues for making faster progress in the development mission. When an individual or team is empowered with technology, transformation to a higher potential for achievement is assured. Creative mind is powerful. An ignited mind is the most powerful resource to work on the earth, above the earth and under the earth. So there is dire need to explore and identify creative brains.

1.2 MEANING OF CREATIVITY

Creativity is the ability to produce work that is both novel (i.e. original, unexpected) and appropriate.

“To create” means “to make or bring into existence something new”.

Creativity is a topic of wide scope that is important at both the individual and society levels.

When one think of creative activity perhaps the work of highly talented or creative geniuses comes to mind; the creations of great sculptures, dance composers, painters, writers, scientists, mathematicians, inventors, at one extreme are gifted people such as those, whose work may change the course of civilization or character of an art; at the other extreme is the vast majority of people who follow the customs of their culture faithfully, rarely acting in an original manner. From this point of view, some people are highly creative but most of them being followers are highly uncreative.

The notion that creative ideas flow from a higher source rather than from the mind of man is not entirely new. We find traces of it in Greco-Roman culture as well as in writings of various new age mystics.
In his work Uno-Mystica 1, New Age Guru Osho states, “It (creativity) is action through inaction, it is what Lao Tzu calls Wei-Wu-Wei. It is not a doing. It is an allowing .... Hidden behind man is God. Just give him a little way, a little passage, to come through you. That is creativity: allowing God to happen is creativity.”

Psychologically speaking, the creative process involves a voluntary relaxing of ego-controls after consciously analyzing the subject at hand. In other words, it is a think-hard-then-let-go process. This ‘letting go’ also helps the preconscious to operate freely on ideas. And it is in this frame of mind that the moment of serenity, the magical ‘eureka’ experience, dawns.

Guilford’s view --- “The first major experimental attempt to understand the word creativity was made by Guilford. His attempt shows that creativity is a form of the intellect as represented in the structure of intellect model as follows:

**Figure 1.1 : Guilford’s Three Dimensional Structure**

In his presidential address to the American Psychological Association in 1950, Guilford considers creativity as involving the interplay of all factors of divergent thinking, on one hand and factors of seeing problem and evolution on the other. He (1967) redefined creativity as a form of thought that is divergent. Divergent thinking occurs in response to a problem that yet is not defined, when no set way of solving the problem exists. According to him, the production of new information or the generation of logical possibilities serves as the basis of creativity.”
According to psychologists who use this definition any solution to a problem that can be worked out with only time and practice is not a creative solution. Thus this point of view reflects that creativity, whatsoever its range of application is no means a unitary trait, but is rather a collection of different component abilities and traits. In support of this argument, Guilford tested a number of factors of creativity such as word Association, Fluency, Expressional Fluency, Symbolic and Adaptive Flexibility, originality and Elaboration.

Initially, he limited to the mental abilities involved in creativity to those groups under divergent thinking but at a lower stage he added three more factors, namely symbolic and semantic redefined both belonging to the evolution categories using intelligence as a part.

De Haan and Havinghurst's view ... “De Hann and Havinghurst (1961) after reviewing a variety of definitions of creativity stated that “creativity is the quality which leads to the production of something new desirable. The new product may be new to society as merely new for the individual who creates it.”

Hallman's view ... “ Hallman (1963) has also put creativity as a sum of at least five components. Creativity according to him :

(i) Creativity is a whole act, a unitary instance of behaviour.
(ii) It terminates in the production of objects or forms of living which are distinctive.
(iii) It evolves out of certain mental process.
(iv) It co-varies with specific personality transformation.
(v) It occurs with in a particular kind of environment.

Torrance (1962) .......

Torrance (1962) on the basis of an analysis of the diverse ways of defining creativity, defined it as “a process of becoming sensitive to problems deficiencies, gaps in knowledge, missing elements, disharmonies, making jueses or formulating hypotheses about the deficiencies testing and re-testing them and finally communicating the results.”
Lefton's view........

According to Lester-a-Lefton (1964), “It is a characteristic of thought and of problem solving, generally considered to include originality, novelty and appropriateness.”

Morri’s Stein (1974) has defined creativity as a process involving three stages hypotheses formulation, hypotheses testing and communication of results. In hypotheses formulation, creative person tries to formulate a new response to a problem. They have to explore paths that have not been explored before and think in new ways. Furthermore, people cannot pluck successful ideas from thin air.

They must have certain skills and a background in the relevant field on which they base their ideas. Creative individuals sometimes experience a sudden brilliant illumination, but more often their new ideas come about through a slow intuitive understanding field of endeavour. Their background allows them to be constructively creative. At the second stage, a creative person applies the criterion of appropriateness e.g. an artist takes brush in hand and transposes visualizations on the canvas. The person can move towards the third stage, the communication of results. Communicating the ideas is some times relatively straight forward e.g. un-covering of canvas by an artist.

Adler’s view....

According to Adler (1930), “The intellectual drive for self realization is similar to Freud’s idea of ego and Jung’s notion of self concept. To Adler, life is a conscious struggle to achieve superiority. Thus he denied the importance of sexual instincts and substituted aggressive tendencies in their place. Freud and Jung emphasized the unconscious, unknowable inner influences on behaviours. Adler believed that most of us are only unaware as why we do and what we do. We see our own inferiority and strive to overcome them. We have an instinct for self realization, for completion and perfection, that Adler thought, was the driving force to life itself. Adler called this force creative power and thought it was the “first cause” of all human behaviour.

Madrick’s view......

“ Madrick (1962) studied and analysed the introspections of highly creative persons and arrived at the conclusion that creative thinking implied the forming of
associative elements into new combinations which either meet specified requirement or are in some way useful.

The new Encyclopaedia Britanica defines creativity as the ability to make or otherwise bring into existence something new, whether a new solution to a problem, a new method or a device or a new artistic object or a form.

After exhaustive research, Morgan (1953) listed the universal factor for creativity, to be novelty (Cropley, 1999). Novelty requires originality and newness. There must be something fresh to the idea.

Sternberg and Lubert (1995) proposed that novelty must be coupled with appropriateness for something to be considered creative. Novelty can be the coalescence of any two or more different things or thoughts. For instance, Damien Hirst is a controversial artist who has sliced animals into fragments, but many people do not consider this as creative even though it is novel and original. Many people do not recognize the factor of appropriateness in his work and consider it to be feckless.

Mechanism Behind Creativity ---

“Creativity becomes more visible when adults try to be more attentive to the cognitive processes of children than to the results they achieve in various fields of doing and understanding.” -- Loris Malaguzzi.

In the past, there was a great deal of mystery and awe involved with creativity and creative undertakings. In ancient Roman and Greek times, poets would invoke the Gods to assist them in their writing. These poetic devices (Metaphors and Similies) were prime examples of creativity. Those were novel and appropriate, but people did not understand from where these thoughts and ideas came. There was speculation that divine intervention inspired the writers.

In the more recent past, creativity was thought to stem from unconscious thought process (Weisberg, 1986). This was probably due to large part of the Freudian approach to psychology which emphasized unconscious thoughts. According to this perspective, the unconscious would arrive at creative thoughts and these thoughts would be pushed to the conscious after being formulated. Naturally, since the unconscious thought process can never be known, there was no way of understanding how this process occurred.
Wallus (1926) proposed that creativity involves four consecutive stages: Preparation, Incubation, illumination and verification (Bogen and Bogen, 2003). During preparation, the person absorbs information. During incubation, the information settles. During illumination, the solution manifests itself to the person and during verification, the final product is created.

Gabora (2002) asserts that the creative process requires a thought shift from associative thinking to cause and effect thinking. Associative thinking might reveal some correlation or relationship between two things, but this correlation might not be appropriate. This replaces the preparation and incubation stages of creativity. There is then a shift to cause and effect thinking, which is analytical and searches for a direct solution and for appropriateness. This replaces the illumination and verification stages of creativity.

It is reasonable that the cognitive process for generating creative ideas does not stem from the unconscious nor follows a rigid procedure, but instead it transforms and evolves a collection of old ideas into new ones. This transformation and evolution may occur through a cognitive shift as Gaboral (2002) suggested.

1.3 APPROACHES TO THE STUDY OF CREATIVITY

Mystical Approaches …

The study of creativity has always been tinged – Some might say tainted – with associations to mystical beliefs. The earliest accounts of creativity were based on divine intervention. The creative person was seen as an empty vessel that a divine being would fill with inspiration. The individual would then pour out the inspired ideas, forming another worldly product.

Pragmatic Approaches …

Perhaps the foremost proponent of this approach is Edward De Bono, De Bono’s concern is not with theory, but with practice. For example, he suggests using a tool that focuses on the aspects of an idea that are interesting or he suggests using the word Po, derived from hypothesis, suppose, possible and poetry to provoke rather than judge ideas. Another tool, that of “thinking hats” has individuals metaphorically wear different hats, such as a white hat for data based thinking, a red hat for intuitive thinking, a black hat for critical thinking and a green hat for generative thinking, in order to stimulate seeing things from different points of view.
Psychodynamic Approaches....

The psychodynamic approach is based on the idea that creativity arises from the tension between conscious reality and unconscious drives. Freud (1908/1959) proposed that writers and artists produce creative work as a way to express their unconscious wishes in a publicly acceptable fashion. Later, the psychoanalytic approach introduced the concept of adaptive regression and elaboration for the study of creativity (Kris, 1952) Adaptive regression, the primary process, refers to the intrusion of unmoulded thoughts in consciousness. Unmoulded thoughts can occur during active problem solving, but often occur during sleep, intoxication from drugs, fantasies or daydreams or psychoses. Elaboration, the secondary process, refers to the reworking and transformation of primary process material through reality-oriented, ego controlled thinking. Other theorists (e.g. Kubie, 1958) have emphasized that the preconscious, which falls between conscious reality and the encrypted unconsciousness, i.e. the true source of creativity because thoughts are loose and vague but interpretable. In contrast to Freud, Kubie claimed that unconscious conflicts actually have a negative effect on creativity because they lead fixated, repetitive thoughts. Recent work has recognized the importance of both primary and secondary process.

Psychometric Approaches.....

In his APA address, Guilford (1950) proposed that creativity could be studied in every day subjects and with psychometric approach, using paper and pencil tasks. One of these was the unusual uses test, in which an examinee thinks of as many uses for a common object (Such as brick) as possible.

Cognitive Approaches......

The cognitive approach to creativity seeks to understand the mental representations and processes underlying creative thought. There have been studies with both human subjects and computer simulations of creative thought. Approaches based on the study of human subjects are perhaps prototypically exemplified by the work of Finke, Ward, and Smith. Finke and his colleagues have proposed what they call the Geneplore model, according to which there are two main processing phases in creative model: a generative phase and exploratory phase. In the generative phase, an individual constructs mental representations referred to as pre-inventive structures,
which have properties promoting creative discoveries. In the exploratory phase, these properties are used to come up with creative ideas. A number of mental processes may enter into these phases of creative invention, including the processes of retrieval, association, synthesis, transformation, analogical transfer and categorical reduction.

Weisberg proposes that creativity involves essentially ordinary cognitive processes yielding extraordinary products. Using case study of eminent creators and laboratory research, such as study with Duncker’s (1945) candle problem, which requires subjects to attach a candle to a wall using only objects available in a picture. Weisberg attempts to show that the insights depend on subjects using Conventional Cognitive Processes (such as analogical transfer) applied to knowledge already stored in memory.

Computer simulation approaches reviewed by Boden (1992, 1994) have as their goal the production of creative thought by a computer in a manner that simulates what people do. Langley, Simon, Bradshaw and Zytkow (1987) for example, developed a set of program that rediscover basic scientific laws. These computerised models rely on heuristics – problem solving guidelines – for searching a data set or conceptual space and finding hidden relationships between input variables.

Social Personality Approaches ....

The social personality approach has focused on personality variables, motivational variables and socio-cultural environment as sources of creativity. Researches such as Amabile (1983), Barron (1968) (1969), Eysenck (1993), Gough (1979) and Mackinnon (1965) have noted that certain personality traits often characterize creative people. These traits include independence of judgement, self-confidence, attraction to complexity, aesthetic orientation and risk taking.

According to Maslow (1968), boldness, courage, freedom, spontaneity, self-acceptance and other traits lead a person to realize his or her full potential.

Creativity as a Person

This approach to the study of creativity involves the explanation of cognitive and non-cognitive variables influencing the functioning of creative person. Simpson (1922), emphasized the cognitive structure of creativity. He indicated that mental abilities involved in searching, combining, and synthesizing are the components of
creativity. He also used curiosity, imagination, discovery, innovation and invention for creative potentials.

- **The Product**

  The characteristics of a creative product are novelty, uniqueness and usefulness. The novelty or originality and utility has to be combined in product before it can be rated as creative and the novelty and utility should not be of superficial nature.

- **The process**

  The starting point in creative process is a felt need, which initiates the effort. Torrance says, “The process of creativity consists of sensing problems of gaps in information, forming ideas and hypothesis, testing and modifying these hypotheses and communicating the results.”

  The process of creativity is combination of ideas that are not in generally associated together. This is what Mednick (1964) calls remote association. According to Mednick, “Creative thinking consists of forming new combination of associative elements, which combinations either meet specified requirements or are in some way useful. The more mutually remote the elements of the new combination, the more creative is the process or solution.”

  To elaborate on the process of creativity as described in the above definition, it seems the first step is to break away from the old associations or bonds.

  A creative person’s thinking is not limited to a discipline. He/she studies parallels in other discipline and develop interdisciplinary ideas. This usually results in new combinations. A new insight may at times arise when a particular idea is seen in a new perspective as in example of discovery of penicillin. Fleming was trying to prepare a culture of some bacteria. One day he found that all bacteria had been killed and also noticed a fungus in the dish. Thus he thought of the killing property in a new perspective leading to the discovery of penicillin.

  There are stages before and after the new ideas came. New ideas must be expressed and given form which can take a lot of time and hard work. Edison, the inventor of the light bulb, took years of experimenting with hundreds of failures until he succeeded in producing a bulb which worked.
Roger Sperry and his associates (Le Boeuf, 1990) at the California Institute of Technology, in their historic split-brain experiments (Two brain theory), were able to separate surgically and test the thinking abilities of each half of the human brain. In so doing they found that each half of the brain has its own way of thinking and its own memories. The left brain tends to think in terms of symbols and words while the right brain thinks in terms of sensory images. The left-brain is used for logical thinking, judgement, speaking and mathematical reasoning, while the right brain is the source of dreaming, feeling, visualization and intuition.

Figure 1.2: Creative thinking makes use of both halves of the brain.

Creative thinking requires coordination and usage both sides of the brain. Flashes of insight and intuition is the result of right brain thinking but analyzing these insights is the function of the left brain.

While the two-brain theory suggests an anatomical approach to creativity, it does little to explain the processes involved. Wallas (1926) distinguished four phases of creative thinking process known as Preparation, Incubation, Illumination and Verification.
1.4 THEORIES OF CREATIVITY

The psychoanalytic Theory

The main proponents of this theory include Freud, Jung, Kris, Rank, Adler and Hammer and the general argument is that people become creative in reaction to difficult circumstances or repressed emotions.

The Mental Illness Theory

The proponents of this theory include Briggs, Eisenman, Goodwin, Jamison, Richards, and Martindale; and the major tenet is that some type of mental illness is actually necessary in order for people to be creative, even if that illness is exceptionally mild called manic-depressive syndromes, where sufferers undergo extreme mood swings that perhaps contribute to enhanced creativity expression.

Eysenck’s Theory of Psychoticism

The main proponent of this theory was the late Hans Eysenck, who argued that highly creative individuals possessed a quality termed ‘Psychoticism’ — a disposition for psychotic tendencies. Eysenck also maintained that these psychotic tendencies were the foundation for creative personalities from conventional to highly social altruistic.

The Humanistic Theory

The main supporters of this theory include Maslow, Rogers, and Fromm, though the theory is based mainly upon Maslow’s Hierarchy of needs, that must be met in order to reach maximum potential for self-actualization.

People’s lower needs, however, must met in order for them to progress to the next highest level and only upon reaching the uppermost level, self-actualization, where needs are related to purpose and identity, are they at last free enough and comfortable enough to express themselves creatively.

Behaviourism

The idea of operant conditioning, which suggests the idea of positive and negative reinforcement through reward and punishment influences behaviours over time, is the key to the idea of behaviourism. Combining this idea with unconscious memories, the explanation for creativity is born. B.F. Skinner viewed the creative act as a cognitive behaviour pattern that first starts with access of arbitrary unconscious
maternal and synthesizing them in response of a stimulus, such as a problem. Operant conditioning occurs when a successful solution alleviates tension as a reward. Additional operant conditioning such as praise from others may reinforce the creative behaviours even more.

Cognitive Theory

Many of these theories are supported by humanists, who view humans as conscious and self-directed beings. Creativity, in their view, is essential to the growth of the individual. Abraham, H. Maslow suggested three categories: Primary creativity, secondary creativity and integrated creativity. The first category identifies with Freud's theory, describing creativity that flows from the primary processes and urges. Analysis, discipline and hard work are the products of secondary creativity, formulated by higher thought processes. In the final category, the primary and the secondary fuses and results in great works of originality. In 1964, Arthur Koestler coined the term 'bisociation' as the source of creativity. He believed that by being able to think on more than one plane simultaneously, joining unrelated, or even conflicting information in a new way create new ideas. Not surprisingly, many creative people show a strong interest in disorder, contradiction, and imbalance. They consider asymmetry and chaos a challenge.

Gestalt Theory of Creativity

The supporters of this theory hold the view that creativity involves restructurization of patterns or Gestalts that suffer from structural deficiency. A creative thinker senses the gaps of missing elements in the existing knowledge very quickly. This sensitivity towards gaps and missing elements give a push to his creativity.

Kris's theory of Primary Process Cognition

Kris proposed that creative individuals are better able to alternate between primary process and secondary process modes of thought than are uncreative people.

According to Kris, Creatine inspiration involves a "regression" to primary process of state of consciousness. Because primary process cognition is associative, it facilitates the discovery of new combinations of mental elements. On the other hand, creative elaboration involves a return to secondary process state. Because uncreative
people are more or less “stuck” at one point on the primary process – secondary process continuum, they are unable to think of creative ideas.

1.5 MODELS FOR THE CREATIVE PROCESS

A Review of Creative Thinking Models in the Literature Since 1908

Silvano Arieti (1976) catalogued eight models of the creative thinking process that were proposed during the period 1908 to 1964. These models represent a piece of the theory of creativity -- how creative thinking proceeds and how creative ideas emerge over time -- it is instructive to review the lines of thinking implied by them.

Some experts dismiss the notion that creativity can be described as a sequence of steps in a model. For example, Vinacke (1953) is adamant that creative thinking in the arts does not follow a model. In a similar vein, Gestalt philosophers like Wertheimer (1945) asserts that the process of creative thinking is an integrated line of thought that does not lend itself to the segmentation implied by the steps of a model. But while such views are strongly held, they are in the minority.

Business people, who have used models for quality improvement, strategic planning, reengineering, and so on, are well-positioned to deal with this apparent controversy. We understand, by experience, that while models are helpful in guiding our efforts, they are not to be used too rigidly. Anyone understand that models are not rote prescriptions. It may deviate substantially from a model in a given situation, but this does not render the model useless. It is also understood the concept of flow and realize that one should not be too dogmatic about when one step of the model ends and the next begins. Models are useful, but only a fool follows them blindly.

One of the earliest models of the creative process is attributed to Graham Wallas. Wallas (1926) proposed that creative thinking proceeds through four phases.

The Wallas Model for the Process of Creativity

- **Preparation** (definition of issue, observation, and study)
- **Incubation** (laying the issue aside for a time)
- **Illumination** (the moment when a new idea finally emerges)
- **Verification** (checking it out)

Torrance (1988) asserts that Wallas' model is the basis for most of the creative thinking training programs available today. The inclusion of incubation followed by
sudden illumination in this popular model may explain why so many people view creative thinking as a subconscious mental process that cannot be directed.

But the first and last phases of Wallas’ model gives the notion that creative thinking begins with purposeful preparation and ends with critical verification suggests that creative and analytical thinking are complementary, rather than opposing. Creative thinkers study and analyze, but they have trained their perception mechanisms to notice things that others miss. Creative thinkers verify and judge, but they expect surprises and avoid judging prematurely.

The implied theory behind Wallas’ model is that creative thinking is a subconscious process that cannot be directed, and that creative and analytical thinking are complementary it is reflected to varying degrees in other models of creativity.

One set of models relies heavily on the theory of subconscious mental processes and uncontrollable events. As Campbell (1960) and Simonton (1988) propose that creative ideas emerge from a largely uncontrollable Darwinian process of random variation and natural selection. The basic idea behind what they call the "chance configuration theory" dates back to the 1880s and the writings of psychologist William James. Specifically, the chance configuration model suggests that variations on ideas and concepts come about through random chance, as random factors accounted for the mold that killed Alexander Fleming’s laboratory bacteria cultures, leading to the discovery of penicillin. Similarly, random factors are also behind the sticker burrs that attached themselves to one’s pants leg during a walk in the woods. But George de Mestral parlayed these random events into observations that led to the invention of Velcro.

Following a chance event, Simonton and Campbell suggest that creativity proceeds through a natural selection process that chooses and adapts those random variations that are most useful. In completing the third and final step of the model, the successful creator/innovator preserves and reproduces these ideas in concrete form (penicillin or Velcro fasteners). While these last two steps of selection and preservation are analytical in nature, the key feature of the model is that the process is initiated by chance. Simonton cites classic cases of invention (like penicillin and Velcro), as well as anecdotal self-reporting from great creators like mathematician Henri Poincare and physicist Albert Einstein, to support this model.
Barron (1988) similarly places great emphasis on subconscious and chance processes in his four-phase, "psychic creation model."

**Barron's Psychic Creation Model**

- **Conception** (in a prepared mind)
- **Gestation** (time, intricately coordinated)
- **Parturation** (suffering to be born, emergence to light)
- **Bringing up the baby** (further period of development)

The tone of Barron's model supports the popular view of creativity as a mysterious process involving subconscious thoughts beyond the control of the creator.

In contrast to the prominent role that some models give to subconscious processes, Perkins (1981) argues that subconscious mental processes are behind all thinking and, therefore, play no extraordinary role in creative thinking. Just because we cannot fully describe our thought processes does not mean that we are not in control of them, as we cannot begin to describe all of the subconscious mental processes that are engaged in the simple act of picking up a coffee mug. But we are certainly in control of the overall act. Further, Perkins argues, just because random events play a part in some acts of creation, this should not be taken to imply that random events are the source of all acts of creation. Weisberg's (1993) review of the lives of great creators and so-called "moments of invention" supports Perkins' points by demonstrating the years of conscious work and preparation on the part of the creator.

While some models make it appear that creativity is a somewhat magical process, the predominant models lean more toward the theory that novel ideas emerge from the conscious effort to balance analysis and imagination. For example, Rossman (1931) examined the creative process via questionnaires completed by 710 inventors and expanded Wallas' original four steps to seven.

**Rossman's Creativity Model**

1. Observation of a need or difficulty
2. Analysis of the need
3. A survey of all available information
4. A formulation of all objective solutions
5. A critical analysis of these solutions for their advantages and disadvantages
6. The birth of the new idea — the invention
7. Experimentation to test out the most promising solution, and the selection and perfection of the final embodiment

Rossman shrouds the "birth of the new idea" in mystery, his steps leading up to and following this moment of illumination are clearly analytical.

Alex Osborn (1953), the developer of brainstorming, embraced a similar theory of balance between analysis and imagination in his seven-step model for creative thinking.

**Osborn's Seven-Step Model for Creative Thinking**

1. **Orientation:** pointing up the problem
2. **Preparation:** gathering pertinent data
3. **Analysis:** breaking down the relevant material
4. **Ideation:** piling up alternatives by way of ideas
5. **Incubation:** letting up, to invite illumination
6. **Synthesis:** putting the pieces together
7. **Evaluation:** judging the resulting ideas

Osborn implied purposeful ideation both in his notion of "piling up alternatives" and through his development of the rules of brainstorming as a tool for doing so.

The systematic combination of techniques for directed creativity and techniques for analysis continues as a strong theme in several, more recently proposed models. Parnes (1992) and Isaksen and Trefflinger (1985) outline six steps in their popular creative problem solving (CPS) model. (Tens of thousands of people have learned the CPS model and its associated tools through the seminars conducted by the Creative Education Foundation in Buffalo, NY.)

**The Creative Problem Solving (CPS) Model**

1. Objective finding
2. Fact finding
3. Problem finding
4. Idea finding
5. Solution finding
6. Acceptance finding
Steps 3 and 4 (problem and idea finding) clearly require novel, creative thinking; while steps 1, 2, 5, and 6 require traditional skills and analytical thinking. Koberg and Bagnall (1981) propose a similar balanced model in their popular book The Universal Traveler.

**Koberg and Bagnall's Universal Traveler Model**

- **Accept the situation** (as a challenge)
- **Analyze** (to discover the "world of the problem")
- **Define** (the main issues and goals)
- **Ideate** (to generate options)
- **Select** (to choose among options)
- **Implement** (to give physical form to the idea)
- **Evaluate** (to review and plan again)

Ideation, the traditional focus of creative thinking tools such as brainstorming, is proceeded and followed by deliberate analytical and practical thinking. The importance that Koberg and Bagnall place on accepting the situation as a personal challenge. This is consistent with the research into the lives of great creators that illustrates the importance of focusing and caring deeply (Weisberg 1993, Wallace and Gruber 1992, Gardner 1994, and Ghiselin 1952.) The final step of this model support the notion of continuous innovation.

The theme of creative and analytical balance is carried over into models proposed for specific applications. For example, consider Bandrowski's (1985) process for creative strategic planning.

Finally, it is important to note that not all models place the generation of new concepts in the mind as the "meat" of the sandwich between slices of analytical thinking bread. Consider Fritz' (1991) model, for example.

**Robert Fritz' Process for Creation**

- Conception
- Vision
- Current reality
- Take action
- Adjust, learn, evaluate, adjust
- Building momentum
Fritz identifies the beginning of the process as the creative acts of conception and vision. This is followed by analysis of current reality, action, evaluation, public scrutiny (building momentum), and completion. Fritz also firmly asserts that the creative process is cyclical in nature. "Living with your creation" means purposeful noticing and analysis that leads to the next creative conception and vision.

Clearly, these modern models of the process of creative thinking are complex scripts for higher-order thinking. Regardless of the specific model we chose, we are called to engage in an intricate mental dance over an extended period of time. The complexity implied by this balancing act is probably the reason why creative ideas are so rare. Even though we all possess the underlying mental building blocks for creative thinking, stacking the blocks just right is very difficult work!

**Common Themes Behind the Models of the Creative Process**

While there are many models for the process of creative thinking, it is not difficult to see the consistent themes that span them all.

- The creative process involves purposeful analysis, imaginative idea generation, and critical evaluation -- the total creative process is a balance of imagination and analysis.
- Older models tend to imply that creative ideas result from subconscious processes, largely outside the control of the thinker. Modern models tend to imply purposeful generation of new ideas, under the direct control of the thinker.
- The total creative process requires a drive to action and the implementation of ideas. We must do more than simply imagine new things, we must work to make them concrete realities.

**The Directed Creativity Cycle: A Synthesis Model of the Creative Process**

The Directed Creativity Cycle is a synthesis model of creative thinking that combines the concepts behind the various models proposed over the last 80+ years.
Fig. 1.3: The Directed Creativity Cycle

Directed creativity simply means that we make purposeful mental movements to avoid the pitfalls associated with our cognitive mechanisms at each step of this process of searching for novel and useful ideas.

This model can further be divided into four phases - Preparation, Imagination, development, and action.

This model continues in the tradition of others in asserting that creativity is a balance of imagination and analysis. The model also purposefully avoids taking a stand on the controversy of whether imagination is a conscious or subconscious mental ability. This model clearly supports the notion that innovation is a step beyond the simple generation of creative ideas. The Action phase of the model makes it clear that creative ideas have value only when they are implemented in the real world.

Arieti’s Theory of Creativity:

Arieti (1976) following a different approach, still oversimplifies such categorization of creativity theories and puts all such theories only in two categories.

The first category theories are related to those ideas or theories which attempt to deal with the subject from the point of view of Creativity as a process and describing the different phases and stages that can be observed in the event of emergence of some creative product.

The second category theories according to Arieti are those which attempt to explain not the observable symptoms but rather the hypothesized mental mechanisms that can explain the occurrence of creative thinking. The first category which he calls the general psychological, is perhaps an attempt to answer: what happens / occurs:
when ....? The second category which he calls the psycho-analytic, is probably an attempt to answer the questions: whatever that occurs/happens, how and why does it occur/happen?

1.6 NATURE OF CREATIVITY

Creativity is too complex in nature. It is something that comes across everyday. One hears of creative people, admires creative objects of art or reads creative books. Yet despite our ability to recognize creativity manifesting itself, there is considerable confusion about what creativity really is.

Wertheniner (1945) suggested that creative thinking involved breaking down and restructurering our knowledge about a phenomenon in order to gain new insights into its nature.

Kelly (1955) and Rogers (1954) both maintained that we could be creative by gaining an insight into our own understanding of a subject. Creativity occurs when we organise our thoughts in a way that leads readily to a different angle of understanding of a situation.

Creative thinking is an important feature of decision making. It is the phenomenon of awakening new thoughts, rearranging old learning and examining assumption to formulate new theories and paradigm or creative awareness. It is the process of revealing, selecting, swapping around and blending one’s stock of facts, ideas and skills.

Nature of Creativity will focus on two aspects

(1) Creative abilities and the learning or acquisition of creative abilities.
(2) Their development and use in problem solving.

Abilities

• Divergent thinking – i.e. fluency, flexibility, originality and elaboration
• Problem-solving abilities
• Intuition
• Unconscious

Personality Traits

Motivation, Imagination, Independence, Tolerance of ambiguity, preferences for complexity introversion, curiosity, wide range of interests, humour, artistic and aesthetic interests.
Abilities

Divergent Thinking

According to Guilford, there are two types of thinking; divergent and convergent. The chief characteristics of convergent thinking is that it refers to thinking that is carried out to solve problems that have only one correct answer. The mind converges to the correct solution.

In divergent thinking, there can be a number of answers. Instead of converging on one answer, the mind goes in different directions and a number of answers emerge. It is an open end thinking.

Divergent thinking generally include fluency, flexibility, originality and elaboration.

![Figure 1.4: Process of Creative Thinking](image)

It does not mean that only divergent thinking is related to creativity and convergent thinking has nothing to do with it. At times, in dealing with an object or situation a person may see a new meaning. This new meaning may happen to be the only correct answer. For solving such problems is required the ability to discard the common and the usual approach and to view the situation from an entirely new angle and perspective. This is an ability that comes under convergent thinking and is called "convergent transformation". It leads to an original solution to a problem which has only one correct answers.

Problem-Solving Abilities

There are certain abilities related to problem-solving and creative thinking. Among these are - sensitivity in perceiving a problem, defining the problem,
eagerness to look for more information searching for alternative solutions, willingness to accept conflicting ideas, breaking away from facts, avoiding jumping to conclusions, searching for unusual ideas and seeing new relationships.

Creativity is the process of revealing, selecting, swapping around and combining one’s store of facts, ideas and skills. Rickards (1988) described creativity as an escape from stuckness.’ an operational definition very much in keeping with its role in decision making and problem solving.

Convergently, one begins with a wide perspective on a problem and proceeds to narrow down the focus to specific issues or options.

Each stage in the creative problem solving process contains a set of divergent and convergent activities. During the convergence one looks for material which is either very close to the pint at issue or clash enough to warrant further consideration.

Most consideration is given to ‘hits’: specific items that are identified during objective finding, the best facts during fact finding etc. ‘Hotspots’ is the name given to clusters of ‘hits’ which seem to be related to one or other in some way

Six stages of the creative Problem solving process

- **Objective Finding**
  At this stage one needs to target a problem area, beginning using divergent thinking to generate a list of all the problems one is facing. Next one converges identifying the most relevant problem area for further exploration.

- **Fact Finding**
  This stage increases overall comprehension of the problem: the objective is to collect all the information related to the problem. This in turn helps to generate unique ideas. Convergence during this stage can again be assisted by using hits and hotspots. Fact finding helps to collect relevant data and may even enable one to see the previously identified problem or problems from a new perspective.

- **Problem Finding**
  This stage uses fact finding hits to develop the most productive problem definition possible.
• **Idea Finding**

The fourth stage in the creative problem solving process helps to structure the search for potential solutions. The primary divergent activity during idea of finding is to generate many ideas using a variety of idea-generation aids.

• **Solution Finding**

This stage helps to select a solution capable of solving a problem. It can be used to transfer ideas into more workable solutions.

• **Acceptance Finding**

The last stage of the creative problem solving process helps to implement a solution successfully. Major divergent activities involve:

1. Listing potential implementation obstacles and ways overcome them.
2. Developing both preventive actions and contingency plans and generating an action plan to implement a solution.

• **Intuition**

Many eminent creators have reported following a hunch of some sort when doing their work. This suggests that creative insights and ideas, like problems may themselves be ill defined, at least at first. In a word, they may begin as some sort of intuition.

> "a preliminary perception of coherence that is at first not consciously represented, but which nevertheless guides thought and inquiry towards a hunch about the nature of the coherence in question."

Intuition is the ability of coming to a conclusion without going through all the steps of analytic thinking. There are a number of instances where the scientist knew the answer even he started the investigation. Some of us use intuition while many others who have the gift of intuition rarely use it. Guessing is a form of intuitive thinking but the teachers often discourage the students from resorting to guessing.

In the present stage of our knowledge we do not know much about intuition but later researches may throw light on how to develop intuition and use it.

**Unconscious**

The unconscious follows a type of thinking that is different from the logical and analytical thinking of the conscious mind. Freud has studied the mechanisms that the unconscious uses in thinking and calls them primary thought processes. These
mechanisms can be seen in dreams. Some persons have access to the resources of the unconscious. These are mentally healthy persons and they can draw upon the unconscious in their creative work. But like intuition we know very little as to how to use the unconscious in creative work.

**Personality Traits**

There are some personality traits that bear a close relationship to creativity. Among these are motivation, imagination, independence, tolerance of ambiguity, preferences for complexity introversion, curiosity, wide range of interests, humour, artistic and aesthetic interests.

**Creativity Syndrome**

Creativity is a complex blend of a number of abilities and traits. All studies to determine what makes a person creative point to some principal characteristics, which can be acquired or developed to some degree in any individual. At the same time, the naturally creative person can learn to raise his already high creative output even higher.

**Problem Sensitivity**

This is basically the ability to recognize that a problem exists; or to be able to cut through misunderstanding, misconceptions and lack of facts or others obscuring handicaps and recognize the real problem. Human life is faced with numerous problems may be concerning his personal life, his social life, professional life or any other aspect of life. But we are not aware of them. A creative person senses the presence of these problems and tries his best to find out a satisfactory and acceptable solution to the problem.

**Idea Fluency**

This term simply means that a person can pile up a large number of alternative solutions to a given problem in a given time. Idea fluency depends largely upon personal mental habits. It is an attribute that can be developed or improved by nearly every person who will consciously apply it to himself.

**Originality**

Originality refers to finding new ways to various existing conditions or new ways to adopt existing ideas to new conditions or a new modification of something that will fit in an existing condition. An idea which is rarely presented can be accepted
as an original idea. Thus statistical infrequency is the criterion to determine originality of a response.

**Flexibility**

The quality of creative flexibility is largely that of being wiling to consider a wide variety of approaches to a problem. This, in turn, is largely a matter of attitude. Rather than obstinately freezing on one particular idea or a single approach to a problem, the flexible person starts out by remembering that if one solution won’t work, he can always approach the problem from another angle. This is also called “creative expectancy the more is number of ideas or solutions falling in, more is the flexibility factor in an individual’s thinking.

**Elaboration**

Elaboration is the process of filling out or detailing ideas. Generally, the more elaborate a person is in developing ideas, the higher the person’s level of creativity.

**Imagination**

Imagination is a form of playful analogical thinking that draws on previous experiences, but combines them in unusual ways, generating new patterns of meaning. Considerable evidence demonstrate that a playful approach to the task at hand increases the likelihood of producing creative results. Obviously logical thinking with its rigorous rules does not leave room for free play, while imaginative thinking does allow for playful associations to occur within contextual constraints, leading to the generation of contextually valid patterns of meaning.

Imagination plays an important role in creative thinking. In fact, one form of imagination, the creative imagination is synonymous with creativity. The relevance of imagination has been noted by many.

“To raise new questions, new possibilities, requires imagination and makes real advance in science” ---- Einstein.

Imagination generates potentially creative ideas. Only a person with imaginative mind can express a greater number of ideas fluently, flexibly and originally.

**1.7 MEANING OF PERSONALITY**

Personality may be taken to be an individual’s most striking or dominant characteristic. In that sense a person may be said to be a “shy personality” or a
“neurotic personality”, meaning that his or her dominant attribute appears to be shyness or neurosis. In popular usage, personality is often equated with social adroitness and effectiveness. In this usage, personality is the ability to elicit positive reactions from other people in one’s typical dealings with them.

“Personality is the dynamic organization within the individual of those psychophysical systems by which his unique adjustment with environment is determined.” —Allport.

“An individual’s personality, then, is his unique pattern of traits... a trait is any distinguishable, relatively enduring way in which one individual differs from another.” —Guilford.

“Personality is that which permits a prediction of what a person will do in a given situation.” —R.B.Cattell.

PERSONALITY AS A STIMULUS

Some psychologists define personality in terms of its social stimulus value. How an individual affects other persons with whom he comes in contact, whether he is impressive or repulsive, or has a dominating or submissive personality. Personality, from this point of view, becomes identical to reputation and impression, mostly in terms of physical appearance, clothing, conversation and etiquette.

SUMATIVE APPROACH

This approach of defining personality emphasizes the importance of sum total of different processes and activities of the individual as, for example, innate dispositions, habits, impulses and emotions, etc.

INTEGRATIVE APPROACH

The definition of this category lay emphasis on the integrative personality and its definite pattern of organization. “Personality is the integrative organization of all the cognitive, affective, conative and physical characteristics of an individual as it manifests itself in focal distinction from others.”

—Warren

“Personality is integrated organization of all the pervasive characteristics of an individual as it manifests itself in focal distinctiveness to others.” —G.W. Hartman.
TOTALITY VIEW

According to this view, the general characterization or pattern of an individual’s total behaviour is his personality. A man’s personality is the total picture of his organized behaviour, especially, as it can be characterized by his fellowmen in a consistent way.

PERSONALITY AS ADJUSTMENT

An individual, since his birth, attempts to adjust to his environment. Adoptability to environment is an individual’s characteristic pattern of behavior.

TYPES OF PERSONALITY

Gall and Spurzhein started the study of ‘Physiognomy’ in Europe. They began to interpret personality in terms of physical features, face, skull, size and shape of jaw etc. Lombroso, the famous Italian criminologist, claimed that criminals have receding forehead and prominent cheek-bones and jaw. But all these theories failed in due course.


---Warner

On the basis of thinking - persons are of three types:-
(i) Abstract thinkers, (ii) Idea thinkers, (iii) Thing Thinkers. On the basis of imagination, they may be categorized into such types: (i) Visiles, (ii) Audiles, (iii) Motiles, (iv) Tractiles, (v) Olfactiles, and (vi) Mixed. This classification is obviously on the basis of the dominance of sense-organs.

---Thorndike.

German Psychiatrist Ernest Kretschmer distinguished three body types on biological basis:
(i) Pyknic- Short and stout.
(ii) Aesthenic-Tall and thin
(iii) Athletic-Muscular and well-proportional.
Jung's two types introverts and extroverts.

An introvert is self-centered, shy, simple and impractical. He does not bother to please others. Philosophers, painters, and scientists belong to this group. Extroverts are practical minded persons. They are opportunists and try to please others. Administrators, militarists and politicians belong to this group. Most of them are in between and can be termed as 'ambiverts'.

According to Stephenson, there are two types of personality patterns on the basis of Jung's classification: (i) Perseverators, (ii) Non-persevarators. Perseverators are introverts. When an activity is ended, it may perseverate in their mind for a long time, such as the melody of a song. Non-persevarators are extroverts.

THE NATURE OF PERSONALITY

A simple working definition of personality is the complex of stable behavioral characteristics, patterns, or traits that distinguishes one person from another.

At any rate, these personality patterns are fairly stable and difficult to change. A personality, then, is a mosaic of behavioral traits with which we characteristically express ourselves and interact with others as we try to cope with life's incidents and emergencies.

1.8 CHARACTERISTICS OF PERSONALITY

Personality is a Dynamic Whole The definition of personality given by Allport reveals that personality is a dynamic whole. A simple addition of different aspects of an individual does not constitute his personality.

Personality is an Integration of the various Aspects of an Individual. The definitions of Munn and others point out that there is a proper integration of the various aspects of an individual e.g. behaviour, interests, attitudes, capacities, abilities and aptitudes are properly integrated and this unique integration constitutes personality.

Unique Organization and Integration of Personality. Every individual is unique because the organization and integration of the various aspects of personality occur in a unique way. This explains why two individuals do not possess the same personality. Personality Measurement can be used to Predict One's Behaviour in a given Situation. Personality of an individual is more or less stable and enduring and hence can help us in making predictions about one's behaviour in a given situation.
Personality is the Outcome of the Interaction of Heredity and Environment.

Most of the psychologists are of the view that personality is the net result of the interaction of hereditary characters and environmental factors. Hereditary factors i.e. genes determine the limits while environmental factors affect the growth and development of various aspects physical, social, emotional and moral etc.

Certain Factors play a Significance Role in Developing Personality.

Development of personality depend mainly upon physique, appearance, weight, health, size, proportion and chemique (effect of endocrine glands and environmental factors etc.) Herenhahn (1994) asserts that factors like genetics traits, culture, learning, personal choice of the individual, unconscious mechanisms and cognitive processes effect the development of personality.

Personality can be identified with Some Motive Force.

Various Theories of motivation contribute to understanding of the dynamics of personality. Motives, ego-involvement, incentives, etc. affect the overall behaviour of an individual.

Personality is the total Individual, (his cognitive and Neo cognitive Traits put Together).

An individual's knowledge, understanding, application, analysis, synthesis and evaluation abilities constitute his cognitive traits, Non-cognitive traits are interest applications, attitudes, values, moral skills etc.

COMPONENTS OF PERSONALITY

Personality is made up of the characteristic patterns of thoughts, feelings and behaviours that makes a person unique. Personality arises from within the individual and remains fairly consistent throughout life. Some of the fundamental characteristics of personality include:

Consistency: There is generally a recognizable order and regularity in behaviours. Essentially, people act in the same way or similar ways in variety of situations.

Psychological and Physiological: Personality is a psychological construct, but research suggests that it is also influenced by biological processes and needs.

Impact behaviours and actions: Personality does not just influence how we move and respond in our environment; it also courses us to act in certain ways.
**Multiple expressions:** Personality is displayed in more than just behaviour. It can also be seen in thoughts, feelings, close relationships and other social interactions.

Personality may be summarized as:

- Genetics
- Culture-Society Traits
- Learning
- Personal choice
- Unconscious Mechanisms
- Cognitive Process

Hergenhahn (1994)

1.9 PERSONALITY THEORIES

Alongwith the ways of observing and assessing personality, theories of personality and its development have evolved. Such theories classify personalities into a series of types, or classify the basic traits that make up personality, so they are called type and trait theories, respectively. Other theories are called dynamic theories of personality, and are addressed to such questions as how people react to inner or outer conflicts, how they handle stress, and what processes, like defense mechanisms, they use in dealing with their conflicts. The earliest ideas about personality were expressed as type theories; and dynamic theories.

Types refer to categories that are distinct and discontinuous. The following sections provide an overview of some of the more popular and commonly known Personality type taxonomies.

The Four Humors - ancient Greeks (2000 BC – 0 AD)

Ancient Greek philosophers such as Hippocrates 400 BC and Galen, 140/150 AD classified 4 types of “humors” in people. Each type was believed to be due to an excess of one of four bodily fluids, corresponding to their character. The personalities were termed “humors”.

<table>
<thead>
<tr>
<th>Character</th>
<th>Humor</th>
<th>Fluid</th>
<th>Corresponding Trait in the Big 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irritable</td>
<td>Choleric</td>
<td>Yellow bile</td>
<td>Agreeableness</td>
</tr>
<tr>
<td>Depressed</td>
<td>Melancholic</td>
<td>Black bile</td>
<td>Neuroticism</td>
</tr>
<tr>
<td>Optimistic</td>
<td>Sanguine</td>
<td>Blood</td>
<td>Openness to experience</td>
</tr>
<tr>
<td>Calm</td>
<td>Phlegmatic</td>
<td>Phlegm</td>
<td>Neuroticism</td>
</tr>
</tbody>
</table>

| Personality | Phlegm | Neuroticism |
Somatotypes – William Sheldon, 1940’s.

William Sheldon (1940, 1942, cited in Phares, 1991) classified personality according to body type. He called this a person’s somatotype.

Sheldon identified three main somatotypes:

<table>
<thead>
<tr>
<th>Sheldon’s Somatotype</th>
<th>Character</th>
<th>Shape</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endomorph [sclerotonic]</td>
<td>relaxed, sociable, tolerant, comfort-loving, peaceful</td>
<td>Plump, buxom, developed visceral structure</td>
</tr>
<tr>
<td>Mesomorph [somatotonic]</td>
<td>active, assertive, vigorous, combative</td>
<td>muscular</td>
</tr>
<tr>
<td>Ectomorph [cerebrotonic]</td>
<td>Quiet, fragile, restrained, non-assertive, sensitive</td>
<td>Lean, delicate, poor muscles</td>
</tr>
</tbody>
</table>

Ayurvedic Body Types (Doshas) (India, 3000 BC to present)

<table>
<thead>
<tr>
<th>Ayurvedic Doshas (Shyeldon Somatotype)</th>
<th>Character</th>
<th>Shape</th>
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<tbody>
<tr>
<td>Vata (Ectomorph)</td>
<td>changeability, unpredictability, variability-in size, shape, mood, and action moody, enthusiastic, imaginative, and impulsive, quick to grasp ideas and good initiating things but poor at finishing them. energy fluctuates, with jagged peaks and valleysable, tolerant, comfort-loving, peaceful</td>
<td>slender with prominent features, joints, and veins, with cool, dry skin eat and sleep erratically prone to anxiety, insomnia, premenstrual syndrome, and constipation</td>
</tr>
<tr>
<td>Pita (Mesomorph)</td>
<td>relatively predictable, quick, articulate, biting intelligence, and can be critical or passionate with short, explosive tempers. efficient and moderate in daily habits, eats and sleeps regularly</td>
<td>medium build, strength, and endurance.well-proportioned and easily maintains a stable weight. often fair haired, red or blond, ruddy complexion tends to perspire heavily and are warm and often thirsty. prone to acne, ulcers, hemorrhoids, and stomach ailments.</td>
</tr>
<tr>
<td>Kapha (Endomorph)</td>
<td>relaxed slow to anger, slow to eat, slow to act. they sleep long and heavily. tends to procrastinate and be obstinate.</td>
<td>solid, heavy and strong, with a tendency to be overweight, slow digestion and somewhat oily hair, and cool, damp, pale skin. prone to high cholesterol, obesity, allergies.</td>
</tr>
</tbody>
</table>
Hippocrates’ types of personalities, so simple yet so all-encompassing, were given wide currency by the Greek physician Galen, who practiced and wrote medical treaties in Rome in the second century A.D., and were influential during the Middle Ages and down to modern times. For a time Alfred Adler, one of the early followers of Freud, even used the four Hippocratic types in his “individual psychology”.

A type theory of personality very popular during the nineteenth century in Europe and the United States moved back from the starts to the human body, in this instance the bumps on the head.

The “science” of phrenology, which claimed that four character types can be identified by means of the size and shape of the skull, has been exploded as based on no justifiable evidence. And during the 1920s and 1930s a German psychiatrist, Ernst Kretschmer, and an American anthropologist, W.H. Sheldon, worked out three personality types based on many measurements of body build. The endomorphic type of person has rounds in body build, large digestive and other body cavities, and often fat deposits, but is weak in bony and muscular development. Endomorphs, said Sheldon, are relaxed and enjoy eating. They are sociable and need other people when troubled. The mesomorphic type is athletic, with large bones and muscles, broad shoulders and narrow hips, and a squarish build. Mesomorphs are energetic, competitive and action-oriented. They love adventure, take risks and are generally noisy, needing action when troubled. Ectomorphic types have a liner build, with long, slender arms and legs, small body cavities, and lack muscular development. Ectomorphs tend to be intellectual, antisocial, sensitive, and secretive. They have rapid reactions, may be anxious and inhibited, and want solitude when troubled. The trouble is that correlations between such body types and personality trait have turned out to be very low and undependable.

In fact, none of these type theories of personality has proved sound under investigation. Such theories assume that everyone will fit into a limited number of classes, an over-simplification. Sheldon finally found himself with some 70 different types of body build as he worked further with his theory, and at that point they simply related much too tenuously to personality traits.
TRAIT THEORY OF PERSONALITY

The trait approach to personality is one of the major theoretical areas in the study of personality. Unlike many other theories of personality, the trait approach to personality is focused on differences between individuals. The combination and interaction of various traits combine to form a personality that is unique to each individual. Traits are distinguishing qualities or characteristics of a person.

In general, trait theory assumes that people differ in the amounts of characteristics rather than differ in the quality of their characteristics.

GORDON ALLPORT’S TRAIT THEORY

In 1936, Psychologist Gordon Allport found that one English language dictionary alone contained more than 4000 words describing different personality traits. He was very much a trait theorist and believed in the individuality and uniqueness of the person and that people have consistent personalities. Allport attempted to blend nomothetic and idiographic perspective. He called this blend the morphogenic approach. He categorized these traits as Individual: traits possessed by one person. Common: traits possessed by many people.

Cardinal Traits

Traits that dominate an individual’s whole life, often to the point that the person becomes known specifically for those traits. People with such personalities often become so known for their traits that there names are often synonymous with these qualities. Consider the origin and meaning of the following descriptive terms: Freudian, Machiavelliam, Narcissism, Don Juan, Christ like etc. Allport suggested that Cardinal traits are rare and tend to develop later in life.

Central Traits:

These central traits, while not as dominating as cardinal traits, are the major characteristics one might use to describe another person. Terms such as intelligent, honest, shy and anxious are considered central traits.

Secondary Traits: Traits that are sometimes related to attitudes or preferences and often appear only in certain situations or under specific circumstances i.e. getting anxious when speaking to a group of impatient while waiting in line.

Motivational Traits: These are very strongly felt traits.

Stylistic Traits: These are less strongly felt traits.
EYSENCK'S SUPER TRAITS

Eysenck began with a theory of personality which he based on two super traits extraversion, introversion and neuroticism.

DIMENSIONS

Introversion / Extraversion:

Introversion involves directing attention on inner experiences, while extraversion relates to focusing attention outward on other people and the environment. So, a person high in introversion might be quiet and reserved, while an individual high in extraversion might be sociable and outgoing.

Neuroticism / Emotionally Stability:

The dimension of Eysenck’s trait theory is related to moodiness versus even-temperedness. Neuroticism refers to an individual’s tendency to become upset or emotional, while stability refers to the tendency to remain emotionally consistent.

Psychoticism:

Later, after studying individual’s suffering from mental illness, Eysenck added a personality dimension called - psychoticism to his trait theory. Individuals who are high on this trait tend to have difficulty in dealing with reality and may be antisocial, hostile and non-empathetic and manipulative.

Eysenck viewed the super traits of extraversion and neuroticism as independent, and believed that different personalities arise from different combinations of the two super traits

The Single Personality Trait Approach

Funder (2001) focuses on three single traits that have received wide attention and have been the subject of investigation in hundreds of studies.

- Conscientiousness
- Self-monitoring
- Authoritarianism
Single Trait: authoritarianism

Authoritarianism began to be studied since 1950's in order to try to understand its nature and its origin. Authoritarianism is felt to lie at the heart of racial prejudice. Think of the stereotypical “Hitler”, who was a the authoritarian personality responsible for nazi outrages during WW II.

Thus authoritarian personality may be described a person who is unthinking and inflexible, aggressive, worshipful of authority above, contemptuous of those below, fascinated by power, cynical and may be sexually depressed.

The origins of authoritarianism have been studied but it has been difficult to determine whether adult authoritarianism is attributable to:

- early childhood experiences
- learned attitudes
- oppressive parental child rearing styles
- genes

THE BIG 5 PERSONALITY FACTORS

A strong consensus has emerged since the mid-1980’s about the number and nature of personality traits. Five superordinate factors have emerged, often referred to as the “Big Five” or the 5-factor model. The presence of these five factors is well supported by a wide variety of research.

Early evidence supporting a 5-factor model was published by Fioske, in 1940. During the 1980s and 1990s a vast array of research came up to support the five factor model. Not everyone however agree in the naming of the five supertraits.

The 5-factor model is commonly measured by the NEO by McCrae and Costa (2003).

The 5 according to the NEO are Neuroticism, Extraversion, Openness to Experience, Agreeableness and Conscientiousness.

- Neuroticism (Emotional Stability)
- Extraversion (Introversion)
- Openness to experience (Closeness to experiences)
- Agreeableness (Disagreeableness)
- Conscientiousness (Lack of conscientiousness)
Each Supertrait is measured by 6 facets (or subordinate traits). These are:

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<tbody>
<tr>
<td>Anxiety</td>
<td>Warmth</td>
<td>Fantasy</td>
<td>Trust</td>
<td>Competence</td>
</tr>
<tr>
<td>Angry hostility</td>
<td>Gregariousness</td>
<td>Aesthetics</td>
<td>Straightforwardness</td>
<td>Order</td>
</tr>
<tr>
<td>Depression</td>
<td>Assertiveness</td>
<td>Feelings</td>
<td>Altruism</td>
<td>Dutifulness</td>
</tr>
<tr>
<td>Self-consciousness</td>
<td>Activity</td>
<td>Actions</td>
<td>Compliance</td>
<td>Achievement striving</td>
</tr>
<tr>
<td>Impulsiveness</td>
<td>Excitement-seeking</td>
<td>Ideas</td>
<td>Modesty</td>
<td>Self Discipline</td>
</tr>
<tr>
<td>Vulnerability</td>
<td>Positive emotion</td>
<td>Values</td>
<td>Tender-mindedness</td>
<td>Deliberation</td>
</tr>
</tbody>
</table>

Extraversion and neuroticism are defined in the same way as Eysenck defined them. Openness to experience /intellect refers to receptivity to new ideas and experiences. People low on this trait prefer the familiar, practical and concrete, whereas those high on this trait are open to new experience, curious and imaginative. Agreeableness means the extent to which people are trusting, generous and concerned for others. Those low on agreeableness are viewed as antagonistic, tough minded and hard-headed. Conscientiousness refers to organization and achievement. Highly conscientious individuals are ambitious, hard working, competent and organized and those low in conscientiousness are easy going, low in self-discipline and not goal driven.

**Cattell's Trait Theory**

Presumably people have a vast number of persistent and consistent ways of behaving, which can be referred to as submissiveness, honesty, self esteem, and intelligence.

Cattell worked with about 170 traits, derived from life records, self-rating inventories, and laboratory situations. Grouping traits that correlated with each other with an ratio of 0.60 or better, he found many correlated and clustered traits. He then went on to isolate and identify 154 to 20 source traits, using multivariate factor
Psychologists have begun to use a statistical technique called multivariate factor analysis in analyzing and selecting personality traits. R.B. Cattell and J.P. Guilford have been particularly active in this field. In this technique, scores representing many personality traits are correlated with each other, each trait with every other trait, to see the extent to which they "hang together". This turns up certain traits that tend to appear together; these are called surface traits.

**Source traits** are thought of as general personality factors from which specific traits are derived, much as Charles Spearman and L. Thurstone proposed that there is a general intelligence factor from which specific abilities like verbal fluency and numerical ability derive.

![Diagram of surface traits correlation](image)

**Figure 1.5. The correlation and clustering of surface traits in accordance with Cattell's theory of personality**
### Descriptors of Low Range Primary Factor

<table>
<thead>
<tr>
<th>Descriptors of Low Range</th>
<th>Primary Factor</th>
<th>Descriptors of High Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impersonal, distant, cool, reserved, detached, formal, aloof (<em>Schizothymia</em>)</td>
<td>Warmth (A)</td>
<td>Warm, outgoing, attentive to others, kindly, easy-going, participating, likes people (<em>Affectothymia</em>)</td>
</tr>
<tr>
<td>Concrete thinking, lower general mental capacity, less intelligent, unable to handle abstract problems (<em>Lower Scholastic Mental Capacity</em>)</td>
<td>Reasoning (B)</td>
<td>Abstract-thinking, more intelligent, bright, higher general mental capacity, fast learner (<em>Higher Scholastic Mental Capacity</em>)</td>
</tr>
<tr>
<td>Reactive emotionally, changeable, affected by feelings, emotionally less stable, easily upset (<em>Lower Ego Strength</em>)</td>
<td>Emotional Stability (C)</td>
<td>Emotionally stable, adaptive, mature, faces reality calmly (<em>Higher Ego Strength</em>)</td>
</tr>
<tr>
<td>Deferential, cooperative, avoids conflict, submissive, humble, obedient, easily led, docile, accommodating (<em>Submissiveness</em>)</td>
<td>Dominance (E)</td>
<td>Dominant, forceful, assertive, aggressive, competitive, stubborn, bossy (<em>Dominance</em>)</td>
</tr>
<tr>
<td>Serious, restrained, prudent, taciturn, introspective, silent (<em>Desurgency</em>)</td>
<td>Liveliness (F)</td>
<td>Lively, animated, spontaneous, enthusiastic, happy go lucky, cheerful, expressive, impulsive (<em>Surgyency</em>)</td>
</tr>
<tr>
<td>Expedient, nonconforming, disregards rules, self indulgent (<em>Low Super Ego Strength</em>)</td>
<td>Rule-Consciousness (G)</td>
<td>Rule-conscious, dutiful, conscientious, conforming, moralistic, staid, rule bound (<em>High Super Ego Strength</em>)</td>
</tr>
<tr>
<td>Shy, threat-sensitive, timid, hesitant, intimidated (<em>Threctia</em>)</td>
<td>Social Boldness (H)</td>
<td>Socially bold, venturesome, thick skinned, uninhibited (<em>Parmia</em>)</td>
</tr>
<tr>
<td>Utilitarian, objective, unsentimental, tough minded, self-reliant, no-nonsense, rough (<em>Harria</em>)</td>
<td>Sensitivity (I)</td>
<td>Sensitive, aesthetic, sentimental, tender minded, intuitive, refined (<em>Premsia</em>)</td>
</tr>
<tr>
<td>Trusting, unsuspecting, accepting, unconditional, easy (<em>Alaxia</em>)</td>
<td>Vigilance (L)</td>
<td>Vigilant, suspicious, skeptical, distrustful, oppositional (<em>Protension</em>)</td>
</tr>
<tr>
<td>Grounded, practical, prosaic, solution oriented, steady, conventional (<em>Praxernia</em>)</td>
<td>Abstractedness (M)</td>
<td>Abstract, imaginative, absent minded, impractical, absorbed in ideas (<em>Autia</em>)</td>
</tr>
<tr>
<td>Forthright, genuine, artless, open, guileless, naive, unpretentious, involved (<em>Artlessness</em>)</td>
<td>Privateness (N)</td>
<td>Private, discreet, nondisclosing, shrewd, polished, worldly, astute, diplomatic (<em>Shrewdness</em>)</td>
</tr>
<tr>
<td>Self-Assured, unworried, complacent, secure, free of guilt, confident, self satisfied (<em>Untroubled</em>)</td>
<td>Apprehension (O)</td>
<td>Apprehensive, self doubting, worried, guilt prone, insecure, worrying, self blaming (<em>Guilt Proneness</em>)</td>
</tr>
<tr>
<td>Traditional, attached to familiar, conservative, respecting traditional ideas (Conservatism)</td>
<td>Openness to Change (Q1)</td>
<td>Open to change, experimental, liberal, analytical, critical, free thinking, flexibility (Radicalism)</td>
</tr>
<tr>
<td>Group-oriented, affiliative, a joiner and follower dependent (Group Adherence)</td>
<td>Self-Reliance (Q2)</td>
<td>Self-reliant, solitary, resourceful, individualistic, self sufficient (Self-Sufficiency)</td>
</tr>
<tr>
<td>Tolerates disorder, unexacting, flexible, undisciplined, lax, self-conflict, impulsive, careless of social rules, uncontrolled (Low Integration)</td>
<td>Perfectionism (Q3)</td>
<td>Perfectionistic, organized, compulsive, self-disciplined, socially precise, exacting will power, control, self-sentimental (High Self-Concept Control)</td>
</tr>
<tr>
<td>Relaxed, placid, tranquil, torpid, patient, composed low drive (Low Ergic Tension)</td>
<td>Tension (Q4)</td>
<td>Tense, high energy, impatient, driven, frustrated, over wrought, time driven. (High Ergic Tension)</td>
</tr>
</tbody>
</table>

Primary Factors and Descriptors in Cattell's 16 Personality Factor Model (Adapted From Conn & Rieke, 1994).

**PSYCHOANALYTIC THEORIES**

During the first third of this century, Sigmund Freud (1856-1939) developed a new and comprehensive theory of personality.

Freud proposed the existence of the **id**, an unconscious, infantile reservoir of psychic energy. The unconscious furnishes the motive power for all our conscious experiences and behavior through the **libido**, the sexual drive or motive, and for other basic motives like hunger and thirst. The id follows the **pleasure principle**, simply driving for the gratification of instinctive wants and the avoidance of pain. Conscious experiences themselves compose the **ego**, which exists to satisfy the id by mediating between its needs and the environment. The ego follows the **reality principle**, channeling the libido and guiding behavior until objects that will provide wish fulfilment for the id have been secured. The ego thus serves to mediate between the libidinal drives and the outer world; maintaining the life of the individual and reproducing the species. As children grow, learn to walk, and begin to satisfy their own drives, however, they soon discover from their parents that some behavior is approved and other behavior disapproved.
Fig 1.6 Phrenologists claimed that 37 or more organs or faculties of the mind, displayed in the shape of the head, indicated the extent of development of such traits as cautiousness, amativeness, hopefulness, self-esteem, and benevolence.

They internalize these attitudes, creating the third basic element of personality, the superego, or conscience. The superego serves to inhibit the instinctive, pleasure-seeking drive of the id, particularly its sexual and aggressive drives. Sometimes Freud thought a death instinct destructive of the self, was opposed to the libidinal drive, or life instinct, directed toward maintenance of the individual and reproduction of the species. The superego, part of which becomes unconscious, is divided into conscience, yielding guilt feelings to control behavior, and ego ideals, yielding price in behavior that competently satisfies drives. Id ego and superego sometimes function smoothly in reducing the tensions of drives, but often they conflict with each other.
When this happens, anxiety is aroused. Reality anxiety is soundly based on real threats or dangers to the satisfaction of drives from the realities of the objects and other people around us.

Freud’s theory of personality has had a great impact on the conceptions of human nature in Western world.

Among Freud’s lasting contributions are his emphases on the importance of infant and childhood experiences and on unconscious motivations. The great significance that Freud attributed to the sex drive has been criticized.

Carl Jung (1875-1961) one of Freud’s early followers, broke away in 1914 and created his own dynamic theory of personality, although he remained greatly influenced by the master. Jung also identified the source of vital or psychic energy as
the *libido*, although he thought of this as a generalized life force rather than a solely sexual drive, Jung also accepted from Freud the concept of the ego, or the conscious mind.

The ego may adopt one of two opposing attitudes, oriented in the main toward the external world with extroversion or toward the inner, subjective world with introversion. Furthermore, within each person dwells a personal unconscious, made up of once-conscious experiences that have been forgotten, repressed, or ignored. At this unconscious level many complexes are found, organized nuclei of strong feelings, thoughts, and perceptions, such as the mother complex we all have in part derived from the infant’s maternal experiences and in part arising from a deeper level still, the collective unconscious. This unconscious consists of latent memories, called archetypes.

Jung suggested that the four functions of the ego-perceiving, thinking, feeling, and intuiting – combine with the two basic opposing attitudes of introversion and extroversion in various ways.

Alfred Adler (1870-1937), who developed his own personality theory in what he called *individual psychology*. Adler did not accept the existence of the unconscious or the id as Freud conceived them. Rather than being driven by libidinal urges, Adler thought, people are attracted by goals. It is the goals or ends for which they seek, rather than unconscious drives, that shape people’s actions. Adler first expressed our predominant goal as *power* and later called it *superiority*, or self-assertion. He believed this goal of superiority to be innate, a part of life itself, carrying people on from stage to stage as their personalities develop. Normal people strive for superiority in achieving goals that are primarily social, although neurotic people strive for egoistic goals like self-esteem and fame.

Although all have the same goal, they may seek it in innumerable ways, and each person has an individual *life style*, influenced by feelings of inferiority but also manifesting methods of achieving superiority. In molding our own personalities, we strive for a creative self that will integrate our behavior and make it consistent. The creative self offers our final goal, which really gives meaning to our lives. Adler thus presented a humanistic and idealistic conception of human personality.
Erik Erikson has stressed the attainment of ego identity as children pass through developmental stages quite similar to those of Freud, organizing a strong sense of self that gives a person stability within and continuity in dealing with other people. Group identity, The ways in which groups regularly organize experience for their members, also must be developed for its effects on the individual members as well as the continuity of the group.

Recently Erich From has added the necrophilous (death-loving) type and biophilous (life-loving) type. Only the productive and biophilous types of people are actually able to lead free and satisfying lives.

SOCIAL LEARNING THEORIES

The cultural matrix of personality development was emphasized by Harry Stack Sullivan (1892-1949). Sullivan held that the human being differs from all other animals in cultural development, which is not based on instincts or drives, but on interpersonal tenderness, first manifested between mother and infant. The activity of an infant which arises from the tension of his needs produces tension in the mothering one which is felt by her as tenderness. Sullivan based his interpersonal theory of personality on such situations. According to Sullivan, one’s personality consists of one’s customary interpersonal behavior as one interact with other people. As a person one does not and cannot exist except in such interactions. All psychological functions-perceiving, remembering, thinking, dreaming-are interpersonal in character.

---Sullivan

The habitual behavior of individuals in relations with other persons, whether overt like talking or convert like imagining, consists of patterns of energy transformations that Sullivan calls dynamisms.

John Dollard and Neal Miller (1950) formulated a theory of personality derived from the principles of stimulus-response learning and motivation. Personality, consists of complex systems of habits that link environmental and internal stimuli to behavior. Energized by primary or secondary drives and motives, and reinforced by rewards, these habitual goal-directed behaviors are gradually established in accordance with generalization and discrimination principles.
Humanistic and Existential Theories

Carl Rogers (1961) has developed a humanistic theory of personality based on the concept of the self.

For Rogers, the I, me, or self is the organized pattern or structure that gives a consistent form to a person's perception of his relationships with others, to all the events going on within and outside of him, and to the values he attaches to these events.

All individuals thus have their own unique structure or self, their characteristic ways of dealing with life. Each self strives for consistency as well as for adequacy, trying to maintain and actualize itself.

1.10 Creativity and Personality Traits

Personality traits have been studied in psychology since the very beginning of the science. Historically, we can even go back to "humors" that were supposed to govern personality in Plato's time. It isn't necessary to trace the history of personality traits, but it is necessary to define them: a personality trait is a learned pattern of behavior that an individual consistently exhibits.

Perseverance

Creative persons tend to become totally immersed in their work, forcing themselves to completion with a fierce determination. Creative persons are highly motivated to finish any work they start, often ignoring or dismissing other things until their work has been completed.

Tolerance for Ambiguity

Highly creative persons tend to have a strong tolerance for ambiguity. In other words, creative persons tend to be relatively more comfortable than noncreative persons in situations where there is little structure or where there are no clear directions or guidance as other persons need.

Internal Control

Creative persons tend to have an internal "Locus of control" which is a hypothetical center of control over one's life, where a person feels such control is located. In general, we can characterize three types of locus of control: internal (as in people who feel they personally determine what happens to them) external as in people who believe that fate, luck, or "the odds" control what happens to them, and
“external-powerful others” (as in people who feel life is controlled by teachers, politicians, bosses, etc.).

Risk-taking Ability

Creative people in general are more likely to take risks than less creative persons i.e. intellectual and emotional risks, and not physical risks. Creative people do not tend to play safe. If they did, their works would never be evaluated, and eventually appreciated by reviewers.

Sense of Humour

Creative persons by and large tend to have a strong sense of humor. On way psychologists characterize jokes and humorous situations is in terms of incongruities. In other words, humor is thought to result from a perception of things as being out of place, unusual, novel, or unexpected. Creative persons seem to have a powerful ability to see the humor in situations that many of us miss if we scrutinise literature on their works.

Capacity for Self-entertainment

Creative people have a great capacity for self-entertainment. While uncreative people become bored easily. Evidently they have a great ability for inventing their own form of amusement or activity in most boring situations.

Ability to Fantasize

They have the ability to totally immerse themselves in fantasy, turning off the outside world. Creative people are daydreamers and have the ability to totally immerse themselves in fantasy of life turning off from the world than most other people.

Focused Creativity

Creative persons are not necessarily creative in every facet of their lives. A highly creative writer may not necessarily have any creative abilities in music. A highly creative scientist may be a poor writer. Some persons are creative in many or all facets of their lives, but this is unusual. Normally creative persons tend to excel in only one or two areas of their lives.

Capacity for Adopting Personal and unusual Problem-solving Strategies

Research indicates that the creative person tends to develop and apply unusual strategies in respective areas whether writing, painting or research, ultimately choosing one of the alternative solutions by flexible thinking.
Ability to See Complex Relationships

Some researchers, in fact, argue that much of what we call creative behavior is basically the ability to take two seemingly unrelated ideas and put them together in a novel and useful way.

Ability to Redefine and Elaborate Concepts

Creative people have the ability to redefine and elaborate ideas, situations, concepts, and problems in several ways and elaborate upon this redefinition. Without the ability to elaborate ideas and concepts, we are back at novelty without usefulness. Innovativeness or novelty is must for creative person.

1.11 ANXIETY

Anxiety is psychological and physiological state simply normal reaction to stress which create an unpleasant feeling of uneasiness, fear or worry for future and present danger.

It is a compound emotion and consists of two simpler emotions, each of the separate emotion is a mode. So anxiety is experienced either as anxiety (in the mode of fear) or as anxiety (in the mode of variety). People commonly experience feelings of anxiety before any important events in their lives.

When faced with danger, there is a reflex action that causes physiological and mental arousal, allowing us to cope with the threat. This reflex action is beneficial in cases of real danger as it, in turn, increases the output of adrenalin that can increase our strength and speed, allowing us to react.

However, chronic anxiety reduces the quality of the sufferer's life and can induce an overall feeling of ill-being. Any person suffering from an anxiety disorder feels a sense of anxiety that is completely out of proportion with the physical, mental, or emotional stimuli.

Anxiety is most simply defined as an acquired fear; for the moment we will employ the term anxiety and fear interchangeably, although they are often used in somewhat different ways. Examples of anxiety are all around us: the student who is anxious about taking examinations; the businessperson's anxiety about the financial future, the teen-age boy who is anxious about his appearance and sex appeal, and the child who wakes up anxious from a nightmare, in state of loss of companion or affection etc.
In addition to the fact that some situations can arise more anxiety than other. People differ widely in their tendency to become anxious in the face of the same threatening condition. Some people always seem to feel anxious about something or other. These differences among people are assumed to reflect differently in an anxiety trait or traits. A trait is a relatively enduring and rather general predisposition to display certain behavioral tendencies and can be estimated by the use of a variety of psychological tests.

"The anxiety experience involves the fundamental emotions of fear, shame, guilt and anger."

----- Sarason et al. (1960).

"Anxiety is an unpleasant feeling state, clearly distinguishable from other emotional states and having physiological concomitants."


"Anxiety is a state of undirected arousal following perception of danger."

----- Epstein (1967).

"Anxiety constitutes particular unpleasant psychological and physiological reactions of organism to extrinsic or intrinsic threat which amounts to disintegration or extinction of the organism."

----- Dutt (1974)

**BIOLOGICAL BASIS**

Neural circuitry involving the amygdale and hippocampus is thought to underline anxiety. When confronted with unpleasant and potentially harmful stimuli such as foul odors or tastes. Scans show increased blood flow in the amygdale. In these studies, the participants also reported moderate anxiety. Research upon adolescents, those who as infants were highly apprehensive, vigilant and fearful finds that their nucleus acumen is more sensitive than that in other people. This suggests a link between circuits responsible for fear and also reward in anxious people. As researchers noted "a sense of responsibility" or self agency, in a context of uncertainty drives the neutral system underlying appetitive motivation more strongly in temperamentally inhibited than no inhibited adolescents. Although single genes have little effect on complex traits and interact heavily both between themselves and with the external factors, research is underway to unravel possible molecular mechanisms
underlying anxiety and co morbid conditions. One candidate gene with polymorphisms that influence anxiety is PLXNA.

**ANXIOUS BEHAVIOR**

Some evidence suggests that when people are made anxious, the adrenal medulla secrets increased amounts of epinephrine, while a state of anger seems to produce increased secretion of morphinephrine.

Breggin (1964) Furthermore, anxiety appears to be correlated with increased systolic blood pressure and heart rate, while anger tends to be associated with increased diastolic blood pressure and not so great on increase in heart rate (Martin, 1961). So, at least for these two, anxiety does seem to manifest itself in ways different from those of anger. The overt behavior of anxious and a non-anxious people is also different, either in the form of gestural or postural behavior, in the performance of interpersonal skills, in academic performance, or even in such things as voice quality.

**FEAR AND ANXIETY**

Most experimental psychologists tend to use the terms “fear” and “anxiety” rather interchangeably. Some psychologists, especially clinical psychologists, distinguish between fear as a realistic apprehension, proportional to a real threat as opposed to anxiety as a state of unreasonably high tension, disproportionate to any real threat.

Others distinguish between the two concepts on the basis of the recognizability of the source: Fear has a known, easily identifiable source. While events that trigger an anxiety state are often obscure.

**ANXIETY AND HUMAN PERFORMANCE**

Some theorists characterize the anxious person as one who acts like a powerful and reinforced drive and as one who spends a lot of time learning behaviors that serve to reduce the sharp edge of anxiety.

The rats in Neal e. Miller’s (1948) experiment were made anxious when they were confined to the white box in which they had been shocked, and they quickly learned to turn a wheel or press a lever to get out of the white box and into the safe black box, the escape response presumably reinforced by anxiety reduction. Thus
anxiety provided both a powerful drive and a drive-reduction motive for the learning of escape behavior.

1.12 DYNAMICS OF ANXIETY

1. Threats to Status or goals. Anxiety stems from the necessity of assuming adult responsibilities, meeting demands for achievements, underlying feelings of stress load which imbedded in various signals and experiences.

2. Threatened breakthrough of dangerous desires. Blockade of one’s feelings leads to anxiety sometimes hostility or sexual desires may threaten to break through the individual defences into consciousness or even behavior.

3. Anxiety-arousing decisions. Neurotics can’t decide. They suffer from paralyzing sense of indecision. They come into conflict with moral values or possible loss of security and status.

4. Reactivation of Prior Trauma. Some prior experiences reopen the personality wounds and hence difficult to handle.

5. Guilt and fear of Punishment. Occasionally anxiety develops as an aftermath of behaviour which arouses acute guilt feelings and fear of punishment. A case of compulsory military service can be cited.

6. Types of Anxiety

   There are a number of types of anxiety disorders. The underlying causes of anxiety disorders are not completely understood, although the interaction of different neurotransmitters in the brain clearly plays the key role.

NORMAL ANXIETY

   Anxiety can be considered normal when its intensity and character is appropriate in a given situation, and when its effects are not disorganizing and maladaptive. It increases a person’s readiness for prompt and vigorous action; it adds spice to pleasurable anticipation; it is often the root of laughter and enjoyment. The moderately anxious person, as a watcher, is more apt to be vigilant, cautious, reaction-sensitive and can actually endure an emergency. People perform feats beyond their ordinary powers, and show a degree of courage outside their ordinary range in state of anxiety, such as in circus. Pleasure parks and county where people wait in line and pay for this privilege.
Normal anxiety also has its drawbacks. If there is nothing that a person can do about a situation which justifiably makes him anxious, he may become diffusely tense, pre-occupied and expectant, to no purpose. In the end this kind of reaction is fatiguing and depletes a person’s resources. There is always the possibility that someone whose anxiety is justifiably heightened, so that he becomes tense and reaction-sensitive (“trigger-happy” or “hair-trigger”), will respond as if the danger had already materialized, when actually it has not. This is close to the situation in neuroses and psychoses.

TRAUMATIC ANXIETY AND TRAUMATIC NEUROSIS

The anxious preparation often takes the form of rehearsing the anticipated danger, so that when it finally materializes a person has already organized his defenses in advance. This was an important factor in preparation for surgery in the case reported by Jains. The terms traumatic anxiety and traumatic neurosis refer to the shock effect of a traumatic experience – or a series of mild but erosive trauma experiences – upon a person who feels helpless to protect himself because he lacks adequate defenses.

PATHOLOGICAL ANXIETY

We consider anxiety to be pathological in adults when they do not see to be adequate justification for it, when it is exaggerated or unduly prolonged, or when it gives rise to defensive maneuvers which interfere seriously with the enjoyment and effectiveness of a person’s life. Anxiety is pathological when it represents tension that demands immediate diffuse discharge in hyperactivity or when it demands excessive repression or suppression, so that a person loses his spontaneity and becomes generally inhibited, guarded or apathetic. It is pathological when it leads to the disorganized experience and behavior, as we shall see in the regressive symptomatology of the psychoses. Finally, it is pathological when it leads to impulsive acts, or to distortions of sexual or aggressive impulses, such as we see in personality disorders.

There are tensions among various components of personality. Freud believed that there are specific varieties of anxiety associated with some of the important and pervasive tensions that we all must face.
Objective Anxiety

A common anxiety is that associated with objective threats to our well-being. The outer world can rage against us, our body is vulnerable to assaults from within and without and, most of all, we can be hurt by other people. Freud acknowledged that many of our anxieties have a real basis from objective threats. He referred to such anxiety as objective anxiety. It is part of the wear and tear of living a world that is not always friendly. It arises when the ego is threatened by objective forces in the world. Its force is a function of the strength of the ego in relation to the power or perceived power of the objective threat.

NEUROTIC ANXIETY

Neurotic anxiety is manifestation of powerful instinctual energy threatening to overcome the ego. It can therefore have a ubiquitous quality in the sense that it can appear, for no apparent reason, at any time or place. The individual may suddenly have a vague sense of impending doom or a feeling of panic from within. Neurotic anxiety is more likely when basic drives are persistently thwarted or bottled up.

MORAL ANXIETY

Like neurotic anxiety, the source of moral anxiety is within the personality. Originally, the source of moral anxiety were in the outside world, but in time, the superego incorporates norms, values, customs, and prohibitions of society. The superego becomes a kind of internal substitute for the punishment that was once threatened by the parents.

EXISTENTIAL ANXIETY

Philosopher Kierkegaard, in The Concept of Anxiety, described anxiety or dread associated with the “dizziness of freedom” and suggested that the possibility for positive resolution of anxiety through the self-conscious exercise of responsibility.

Theologian Paul Tillich characterized existential anxiety as the “state in which human being is aware of its possible non-being” and he listed three categories for the nonbeing and resulting anxiety. Ontic (fate and death), moral (guilt and condemnation) and spiritual (emptiness and meaninglessness). According to Tillich, the last of these three types of existential anxiety, i.e. spiritual anxiety, is predominant in modern times while the others were predominant in earlier periods. Tillich argues that this anxiety can be accepted as part of the human condition or it can be resisted
but with negative consequences. It its pathological form, spiritual anxiety may tend to “drive the person toward the creation of certitude in systems of meaning which are supported by tradition and authority “even though such “undoubted certitude is built on the rocks of reality.”

According to Viktor Frankle, author of Man’s search for meaning, when faced with extreme mortal dangers the most basic of all human wishes is to find a meaning of life to combat the “trauma of nonbeing” as death is near.

**Test and Performance Anxiety**

An optimal level of arousal is necessary to best complete a task such as an exam, performance or competitive event. However, when the anxiety or level of arousal exceeds that optimum, it results in a decline in performance.

Test anxiety is the uneasiness, apprehension or nervousness felt by the students who have a fear of failing an examination. Students suffering from test anxiety may experience any of the following – the association of grades with personal worth, fear of embarrassment by a teacher, fear of alienation from parents or friends, time pressures or feeling a loss.

**THEORETICAL VIEWS OF ANXIETY**

Freudian formulations emphasize the breakthrough into consciousness of unacceptable impulses, learning theories focus on association with painful or aversive stimulation, and phenomenological existential theories stress the perception of a basic threat to the self or to the individual’s very existence as a personality. Still other formulations of anxiety construe it mainly as a state of distress and helplessness in which the organism has no alternatives or as a “disease of overarousal”. Taken together these definitions provide a glimpse of the great variety of events that may constitute subjective danger for any particular individual and that may create anxiety.

There is no reason to restrict the meaning of anxiety to any single conception. Indeed it seems plausible that each individual has a somewhat different, personal set of threats that endanger greatest anxiety for him or her. Because each person can conceptualize arousal states in somewhat different ways, the experiences that can be subsumed under the label “anxiety” may be almost endless, and they range from birth traumas to death fears.
**TRAIT ANXIETY**

Trait anxiety is conceptualized as a person's momentary or situational anxiety and it varies in intensity over time and across settings. Trait anxiety in contrast, refers to one's more stable, characteristic overall level of anxiety. Usually trait anxiety is measured by the person's self-report on questionnaires.

**ANXIETY AND PERFORMANCE**

Many studies have examined how trait anxiety interacts with other variables to affect performance. Some researchers have conceptualized trait anxiety in motivational terms as an arousal state similar to a physiological drive and have studied its relation to performance. People who differ in self-reported trait anxiety have been tested under various anxiety-arousing instructions to see who is the best on different learning tasks. These tasks range from simple conditioning situations to measure of complex performance.

**ANXIETY AND ACHIEVEMENT-ORIENTED INSTRUCTIONS**

In our achievement-oriented society, great pressure is exerted on people to strive to compete and excel. Competition is actively encouraged, and children soon learn to make continuous comparisons between their accomplishments and those of others. Such an orientation have a boomerang effect on anxious individuals that interferes with effective problem-solving and creativity.

**THE PSYCHOLOGICAL IMPORTANCE OF ANXIETY**

Anxiety and conflict have been considered by most personality theorists in this century as the core issue around which human personality develops. Anxiety is the term used to describe our emotions in situations in which we experience a high level of fear that is not appropriate to the situation or when the fear is without a clear object.

Anxiety feelings may range from mild vague uneasiness to almost paralyzing terror. That fear is best regarded as a basic emotion while anxiety usually involves a mixture of fear and other emotions such as anger, sadness, or distress.

As Freud pointed out, we scarcely need to define anxiety, for who among us has not experienced, seemingly from nowhere, the sudden feeling “butterflies in the stomach”, of chilling terror that we cannot explain.
1.13 THEORIES OF ANXIETY

In classical psycho-analysis, anxiety brought about by the conflict between the drives of the id and the attempted suppression of these drives by the superego and ego is the core problem of existence. Sullivan’s interpersonal theory makes a distinction between satisfactions and securities. Anxiety is not occasioned by drive frustrations but rather by fears of loss of love or rejection by significant adults. Learning theories, especially in the Dollard-Miller period, focused upon anxiety as a drive that stimulates learning under certain conditions and interferes with it under other.

Goldstein approach anxiety intrinsically, cognitive, he maintained that we experience anxiety because we continually confront new situations that must be organized and integrated. This point of view broadens the scope of the concept without ignoring the importance of the parent child relationships and calls attention to the tie between anxiety and growth or self-actualization. Maslow and May, whose humanistic and existential positions we discussed earlier, were both strongly influenced by Goldstein’s orientation and they, too, emphasized the growth-related nature of anxiety as well as its more pathological implications. From the existential point of view, anxiety is closely related to the fear of a sterile life and of meaningless of death.

Defining Anxiety in Scientific Research

The technical problems for psychologists studying anxiety have proved to be very complicated. Consider the case of someone who prefers to stay indoors when others are outdoors, who prefers reading to parties. Such an individual might be considered to be anxious about social situations by relatives and friend or by mental-health professionals. But if asked directly, this individual might deny any fear or anxiety and state that seclusion is a form of life that is personally convenient and congenial.

They merely accept the fact that some people avoid certain situations and define their behavior from that standpoint without assuming that they avoid a situation because of underlying emotion. While that explanation may suffice in some instances, research with animals suggests that avoidance behaviors may reflect an underlying fear response.
The Experience of Anxiety

When people claim to be anxious, they report that they are aware of a sense of terror, of agitation, of specific or vague fears; they also describe the kinds of discomfort that can be identified physiologically, such as rapid heart rate, sweating pains, butterflies in the stomach.

Ekman and Friesen (1975) have delineated the facial expressions that characterize a person who is experiencing extreme fear of anxiety. If shown pictures of these expressions, most people, not only in our society but in number of others, identify them correctly. Ekman and Friesen demonstrated the differences between surprise and fear. In anxiety or fear, the lower lip is generally more taut than in a surprise reaction. Generally, the mouth is open, and the lips are drawn back and are extremely tight. The muscle tension around the eyes, the lower forehead, and the mouth during extreme fear can be measured electrically.

Autonomic Nervous System Reactions

Anxiety is accompanied by rapid and sometimes almost audible heartbeats, feelings of dizziness, and increased blood pressure. People also feel that they cannot breathe or they may be almost completely out of breath. There sometimes seems to be a lump or tightness in the upper chest; there may also be nausea and sometimes diarrhea. Gellhorn (1967) analyzed the pattern of relationship between heart rate, blood pressure, and sympathetic and parasympathetic systems of the body to demonstrate that a breakdown in adequate blood circulation can follow acute fear and can lead to death. He showed how the phenomenon of so-called “voodoo death” can be explained by bodily reactions to terror. If a person from a culture where magic is taken very seriously is placed under a curse and genuinely believes in the power of witchcraft, he or she may die without any known disease except a sense of hopelessness and terror.

The Neurochemistry of Anxiety

Research has indicated that the transmission of the chemical substance norepinephrine at nerve endings is especially prominent in the experience of extreme fear. Most research on animals does not adequately differentiate extreme fear from the anxiety in humans, differentiation is possible in terms of private experience, if not physiologically.
Characteristics of Anxiety

Although different individuals manifest intense anxiety reactions in different ways, the following three components often are found (Maher, 1966);

1. A conscious feeling of fear and anticipated danger, without the ability to identify immediate objective threats that could account for these feelings of apprehension.

2. A pattern of physiological arousal and bodily distress that may include miscellaneous physical changes and complaints. Common examples include cardiovascular symptoms (heart palpitations, faintness, increased blood pressure, pulse changes); and gastrointestinal symptoms (diarrhea, nausea, vomiting). If the anxiety persists, the prolonged physical reactions to it may have chronic effects on each of these bodily systems. In addition the person’s agitation may be reflected in sleeplessness, frequent urination, perspiration, muscular tensions, fatigue, and other signs of upset and distress.

3. A disruption of effective problem-solving and cognitive control, including difficulty in thinking clearly and coping effectively with environmental demands.

1.14 ANXIETY ATTACKS AND THEIR SYMPTOMS

Anxiety attacks, known as panic attacks are episodes of intense panic fear. Anxiety attacks usually occur suddenly and without working. Sometimes there is obvious trigger-getting stuck in an elevator.

Anxiety attacks usually peak within ten minutes and they rarely last more than a half hour. But during that short time, the terror can be so severe that one may feel as about to die or totally lose control. The physical symptoms are themselves so frightening that many people believe that they are having a heart attack. After an anxiety attack’s over, one may be worried about having another one, particularly in a public place where help is not available or one cannot easily escape.

Symptoms of Anxiety

Physiological:

- Agitation
- Irritability
• Inner tension
• Fear of losing control
• Dread that something catastrophic is going to happen such as a heart attack or death.
• Feeling of detachment and feeling separate from the world.
• Breathing fast or feeling short of breath.
• Tightness of the chest.
• Palpitations (racing heart beat)
• Dry mouth.
• Butterflies in stomach.
• Feeling nauseous.
• Tremors
• Sweating
• An urge to urinate

**Emotional Symptoms of anxiety**

In addition to the primary symptoms of irrational and excessive fear and worry, other common emotional symptoms of anxiety include:-

• Feelings of apprehension or dread
• Trouble Concentrating
• Feeling tense and jumpy
• Anticipating the worst.
• Irritability
• Restlessness
• Watching for signs of danger

Feeling like mind’s gone blank.

**1.15 ORGANIZATIONAL CLIMATE**

Organizational climate is the process of quantifying the “culture” of an organization. It is a set of properties of the work environment, perceived directly or indirectly by the employees, that is assumed to be a major force in influencing employee behavior.
Organizational Climate has been defined as “the relatively enduring quality of the internal environment of an organization that is experienced by its members; influences their behaviour; and can be described in terms of the values of a particular set of characteristics of the organization.”

(Taguiri and Litwin, 1968)

The organisational climate refers to the sum of all physical, social, emotional and instructional factors which contribute to the total teaching/learning situations in the school.

Organizational culture has its roots in sociology and anthropology whereas organizational climate is rooted in psychology.

Margulies (1958) defined “Organizational climate as an idea of organizational culture which is the degree to which the organization is capable of adopting to the dynamic environment.”

Halpin (1963) defined organizational climate as a multidimensional perception by members as well as non-members of the essential attributes or character of an organizational system.

Andrew, Halpin and Dan Croft postulate a conceptual continuance that extends from open to closed climate. Halpin notes that “anyone who visits more than a few schools notes quickly how schools differ from each other in their feel.” And as one moves from school to school one finds that each appears to have a “personality” that we describe here as the organizational climate of the school. Analogously personality is to the individual what organizational climate is to the organization.

Factors Affecting Organizational Climate

There are some factors influencing the organizational climate which are:-

Emotional Climate of the School

The emotional climate of the school is a basic condition for healthy organizational climate. In certain schools there is free exchange of ideas, feelings and experiences. There is mutual trust and respect among its members. Love, appreciation and permissive atmosphere are characteristic features of such schools. Performance of students in such schools is better than those of other schools.
Social Climate of the School

The social climate of the school is linked directly with its emotional climate. It relates to the human relations and interaction among its members. The social climate of the school also refers to the leadership styles adopted by the headmaster and teachers. The general feeling about the school is better when the headmaster is a democratic leader.

Physical Environment of the School

The physical environment of the school contributes positively or adversely to the total functioning of the school. It refers to the location of the school, type of school building, space and equipments of the school for proper education and the ecosystems.

Instructional or Academic Climate of the School

The effectiveness of a school depends upon its instructional climate. The instructional climate of the schools refers to the qualities and qualification of teachers, teaching styles, learning environment, organization of co-curricular activities, evaluation system, academic records of the school and the school policy.

A pleasant, happy and favourable climate produces good and responsible citizens for the society. It not only reflects the behaviour of individual but also of the organization in our social system.

1.16 DIMENSIONS OF ORGANIZATIONAL CLIMATE

There are eight dimensions of organizational climate, four related to teacher behaviour and four related to Principal’s behaviour.

Teacher Behaviour

1. **Disengagament**: refers to the teacher’s tendency to be “not with it”. This dimension describes a group which is “going through the motions”, a group that is “not in gear” with respect to the task at hand. In short, this subtest focuses upon the teachers’ behaviour in a task – oriented situation.

2. **Hindrance**: refers to the teachers’ feeling that the principal burdens them with routine duties, committee demands, and other requirements which the teachers construe as unnecessary “busywork”. The teacher perceive that principal is hindering rather than facilitating their work.
3. **Espirit** refers to moral. The teachers feel that their social needs are being satisfied and that they are, at the same time, enjoying a sense of accomplishment in their job.

4. **Intimacy** refers to the teachers' enjoyment of friendly social relations with each other. This dimension describes a social need satisfaction which is not necessarily associated with task accomplishment.

**Principal's Behaviour**

5. **Aloofness or Alienation** refers to behaviour of the principal which is characterized as formal and impersonal. He "goes by the book" and prefers to the guided by rules and policies rather than deal with the teachers in an informal, face-to-face situation. His behaviour in brief, is universalistic rather than particularistic. To maintain this style, he keeps himself – at least “emotionally” at a distance from his staff.

6. **Production emphasis** refers to behaviour of the principal which is characterized by close supervision of the staff. He is highly directive and plays the role of a “strawboss”. His communication tends to go in only one direction and he is not sensitive to feedback from the staff.

7. **Humanized – thrust**: Thrust behaviour is marked not by close supervision, but by the Principal’s drive force to motivate staff to move the organization smoothly through his own task-oriented behavior.

8. **Control**: refers to the principal’s behaviour which may be characterized as thrustfully bureaucratic and impersonal in nature; although task-oriented by providing adequate operational guidance and secretarial services to achieve common goals.

1.17 **TYPES OF ORGANIZATIONAL CLIMATES**

There are six types of organizational climates based on each of the eight subsets which constitutes the prototypic profiles as given by Halpin (1996).

**The Open Climate**

The open climate depicts a situation in which the members enjoy extremely high espirit. The teachers work well together without bickering and gripping (Low disengagement). They are not burdened by mountains of busywork of routine reports. The principal facilitates teachers in the accomplishment of their tasks. The group
members enjoy friendly relations with each others. The teachers obtain considerable job satisfaction and are sufficiently motivated to overcome difficulties/ frustrations and feel proud to be associated with their school.

The behaviour of the principal represents appropriate integration between his own personality and the role as a principal who sets an example by working hard himself (High thrust) and goes out of the way to help a teacher (High Consideration). He has integrity in that he is “all of a piece” and there for can function well in either situation. He is not aloof, nor are the rules and procedures which he sets up inflexible and impersonal. He is in full control of the situation and he clearly provides leadership to the staff.

The Autonomous Climate

Though the teachers work together in task-oriented climate but they are not hindered by administrative paper work and they do not bother about the reports that they are required to submit. The principal remains aloof after he has set procedures and regulations to facilitate the teachers task. He lets the teachers work of their own and monitors their activities very little. The moral of the teacher is high which stems, largely from their social needs satisfaction. Principal’s own example of work hard and his genuine flexible image is boost for an organization.

Controlled Climate

There is an excessive amount of paper work, routine reports, busy work and general hindrance which gets in the way of the teachers task- accomplishment. We infer that the job satisfaction found in this climate results primarily from task-accomplishment not from social needs satisfaction.

The principal is described as dominating and directive; he allows little flexibility within the organization, and he insists that everything be done “his” way (high production emphasis). “My way of doing it is best and to hell with the way people feel.”

He delegates few responsibilities; leadership acts emanate chiefly from himself than from the group (Surprisingly, it seems that many school faculties actually respond well to this type of militant behaviour and apparently do obtain considerable job satisfaction within this type of climate).
The Familiar Climate

The behavioural theme of the Principal is essentially, “Let’s all be a nice happy family”. He evidently is reluctant to do anything other than considerate, lest he may in his estimation, injure the “happy family” feeling (high consideration). He wants everybody to know that he, too is one of the group, that he is in no way different from anybody else.

Few rules and regulations are established as guides to suggest to the teachers how things “should be done” (Low-alooofness/alienation). The Principal does not emphasize production nor does he do much personally to insure that the teachers are performing their tasks correctly. No one works to full capacity yet no one is ever “wrong” also (Low production emphasis). In short, little is done either by direct or by indirect means to evaluate or direct the activities of the teachers. However, teachers do attribute thrust to the Principal and regard him as a “good guy”, who is interested in their welfare.

The Paternal Climate

The paternal climate is characterized by the ineffective attempts of the principal to control the teachers or to satisfy their social needs.

The teachers do not work well together nor enjoy friendly relationships with each other (Low intimacy).

The Principal, on the other hand, is non-alooof. He is everywhere at once intrusive, checking, monitoring and telling people how to do things. His view is that “Daddy knows best”.

The school and his duties within it are the Principal’s main interest in life. He derives only minimal social-needs satisfaction outside his professional role.

He uses his considerate behaviour to satisfy his own social-needs, although he preserves an average degree of thrust and fails to motivate the teachers. He can not prove an exemplary or an ideal whom the teachers care to emulate.

The Closed Climate

The closed climate marks a situation in which the group members obtain little satisfaction regarding task-achievement or social needs. In short the Principal is
ineffective in directing the activities of the teachers; nor he is inclined to look out for their personal welfare. This climate is the most closed and least genuine climate.

It has been identified that teachers are disengaged and do not work well together.

The Principal is highly aloof and in genuine in controlling and directing the activities of the teachers (high aloofness/alienation). He emphasizes high production but in considerate to the needs of staff. He is double standard i.e. crying work-hard and himself doing nothing exemplary.

1.18 SIGNIFICANCE OF THE STUDY

In 1977, a Review Committee was appointed by the Government of India to review the whole curriculum. Review committee has emphasized the need of creative education without mincing words.

Our schools have been doing almost nothing to nourish the creative potential of children. When the child comes to school, he is full of eagerness, curiosity and sensitivity. He strives to know each and everything about the world in which he lives. Excessive spoon-feeding snatches all the initiative from him. Teachers often think that creative thinking leads only to trouble in the classroom. Children disturb classroom organization with their unusual ideas.

University of California and Berkley's researchers have found that good number of highly creative students are among the dropouts.

Though we can not transform each child into Einstein or a Shakespeare, we must accept the fact that every one is creative. The dire need is to identify this talent among individuals.

The present study intends firstly to find relationship between creativity and some psychological factors like anxiety and personality. Anxiety and creativity seems to go side by side. Organizational climate affects creativity and is often as palpable as the weather. It is essential that a creativity stimulating learning environment must be created in the school organization, in order that individual and group talent may be released and creative thinking can be encouraged.
According to Dewey, learning is development of experience. These educational and creative experiences are largely determined from the environment in which the learner live.

Unfortunately, organisational climate of schools is often inhospitable to these students. Students with emotional problems may never have their difficulties treated because many schools have inadequate psychological services. Highly mobile students may particularly suffer from inadequate administrative and support practices. Schools are often not prepared to address these problems.

Organizational climate has been defined as the “personality” of the school which can be created and maintained. The problem, then is one of identifying the dimensions affecting creative thinking.

According to Reyes and Laliberty, the “basic skills” approach to teaching literacy “dooms” students to a curriculum that lacks interest and relevance. Consequently, students have little motivation to learn. Other studies suggest that the creative and active learning in combination with “scaffolding” may enhance the learning of young people.

The present inquiry may provide empirical evidence of climate dimensions which can be used to help them determine the kind of climate that could be established in a school to enhance creative thinking among students.

According to Piaget (1952), the formal operational stage of intellectual development in children comes at the age of 12 and above. This is stage when child can think in abstract terms, follow logical propositions and reason by hypotheses.

Keeping in view the educational conditions and stands on our country and also the intellectual development of the child, the most appropriate age seems to be 15 and above. Therefore, the investigator decided to conduct a research study on creativity of senior secondary school students.

Creativity was the broad field of study from which the investigator had decided to select the problem. There is strong evidence which indicates that creativity does not just happen. The condition for creativity will have to be carefully nourished, if we want more creativity to be demonstrated. That is why, the investigator has chosen creativity as the major area of investigation under conditions which seem to be most relevant in the life field of an adolescent. It is evident that creative people posses
certain personality traits and some psychological factors affect creativity. Keeping in mind, investigator decided to study personality factors and anxiety of senior school students as psychological factors.

Secondly, the child remains at school for a longer period during the day where the climate of school is seen to be the most significant in nourishing or inculcating the creative potential of the child. Within the constraints of time and space, the investigator decided to study the development of creative thinking in relation to these three areas. Therefore, the investigator delineates the present problem more clearly as under:

1.19 STATEMENT OF THE PROBLEM:

"A STUDY OF CREATIVE THINKING AMONG SENIOR SECONDARY SCHOOL STUDENTS IN RELATION TO PSYCHOLOGICAL FACTORS AND ORGANIZATIONAL CLIMATE"

1.20 OPERATIONAL DEFINITION OF THE TERMS

Creativity

Creativity is characterized by novel and appropriate ideas. For the present study, creativity is defined as ability of fluency, flexibility and originality as measured by verbal test of creative thinking by Baquer Mehdi.

Fluency

It reflects the subject's ability to produce a large number of ideas.

Flexibility

It indicates the number of distinct and different ways in which an individual can respond to a stimulus. Quantitatively, it is a measure of variety. Thus the number of different classes of ideas or things determines the numerical value of flexibility.

Originality

It indicates uncommonness or newness in the product. A response that may be considered as original must represent some break away from the obvious, the common place and the banal (Torrance, 1974).
Personality

Personality, in the present study, can be defined as a construct of some traits as measured by R.B. Cattell’s 16 Personality Factors— are warmth, Reasoning, Emotional stability, dominance, liveliness, Rule consciousness, social boldness, sensitivity, vigilance, Abstractedness, Privateness, apprehension, openness to change, self-reliance, Perfectionism, Tension.

Anxiety

Anxiety is the sense of uneasiness in any situation where the person’s vanity is undermined, fear arises. Anxiety increases the intensity of a person’s reaction to any situation.

Organizational Climate

Organizational climate is the process of quantifying the “culture” of an organization. It is a set of properties of the work environment, perceived directly or indirectly by the employees, that is assumed to be a major force in influencing employee behaviour.