

# Thought

Dipak Dutta

Postgraduate Trainee of Psychiatry  
at Silchar Medical College Hospital, Silchar

## Introduction

Thinking represents the most complex form of human behaviour, the highest form of mental activity. All human achievements and progress are simply the products of thought.

## Definition

Thinking can be defined as the cognitive rearrangement or manipulation of both information from the environment and the symbols stored in long term memory.

## The thinking process

The thinking process is by the use of symbols in the form of WORDS, LANGUAGE and IMAGES. Language can determine the thoughts we are capable of having – linguistic relativity hypothesis. Thus thinking is a kind of inner speech i.e. "talking to ourselves under our breath." Some feel that when people think, they talk to themselves by making small movements of the vocal cords.

## Types of thinking

### Freud's division of thought

1. Primary process: Found in dreams, young children and psychotic states. Disregards logic, linear notion of time, permits simultaneous contradiction, dominated by wish and fantasy. It uses symbols, imagery, condensation and concretisation in its organization – a jumbled and incoherent style of thinking as in dreams. This process is also called as right brain thinking.

2. Secondary process: Found in non dreamy state, adults and non psychotic states. It is characterised by logic and the linear notion of time. Ideas follow one another in sequence that is understandable to the listener e.g. the ability to think abstractly and to think in detail about future plan.

### Non Freudian typology of thought

1. Fantasy thinking: Thinking by escaping from or denying reality. Normal - day dreaming; pathological - dissociative and psychotic states.

2. Imaginative thinking: Merges fantasy and memory to generate future plans.

3. Rational or conceptual thinking: Uses logic to solve problems.

Autistic thinking: Thinking in which the thoughts are narcissistic and egocentric, with emphasis on subjectivity rather than objectivity and without regard for reality e.g. schizophrenia and autistic disorder.

Abstract thinking: Thinking characterised by the ability to grasp the essentials of a whole or break a whole into its parts, and to discern common properties.

Concrete thinking: Thinking characterised by actual things, events, and immediate experience rather than by abstractions e.g. schizophrenia and cognitive mental disorder.

## Concept

Concepts are important language symbols used in thinking, a symbolic construction that represents some common and general feature of an object or event. They are ways of classifying the diverse elements in the world around us.

## How are concepts formed?

1. Basic/natural concept: Acquired easily and early in life in natural way e.g. concept of colours like red, green etc.

2. By discrimination learning: Occurs when some concepts are rewarded or reinforced and others are not e.g. rewarding a child with a 'right' when it says mango pointing to a mango, but not when it says that pointing to something else.

3. By definition: Helps us acquire concepts about something by describing it in terms of other words or concepts with which we are already familiar.

## Problem solving

Difference between one situation and another situation we wish to produce our goal.

Rules in problem solving

1. Algorithm: Solving a problem by a set of rules.

2. Heuristics: Strategies taken based on our past experiences with problems that are likely to lead to a solution.

## Decision making

Decision making is a kind of problem solving in which we are presented with a number of alternatives among which we must choose. People make decisions that will maximise subjectively expected utility.

### Heuristics in decision making

1. **Representativeness:** We compare and see whether the current situation is a representation of something we have already experienced.

2. **Availability:** Because frequent events are easier to remember than infrequent ones, easily remembered events are likely to be repeated in decision making.

3. **Adjustment:** We start with a certain subjective probability and raise it or lower it depending on the circumstances.

## Creative thinking

Thinking something new, providing to the problems some new solutions which other people have not thought of earlier. This sudden appearance of new idea is called **INSIGHT**.

### Stages in creative thinking

1. **Preparation:** Formulation of the problem and collection of the facts and materials considered necessary for its solution.

2. **Incubation:** Turning away from the problem, failing to solve it. But the unconscious thought processes are still at work.

3. **Illumination:** Sudden emergence of an idea to the problem.

4. **Evaluation:** The apparent solution is tested to see if it satisfactorily solves the problem.

5. **Revision:** Modification of the solution or solution of minor problems to create a 'good' new idea.

Disorders of thought

Disorders of stream of thought

## I. Disorders of tempo

1. **Flight of ideas:** Rapid succession of fragmentary thoughts or speech in which content changes abruptly and speech may be incoherent. Association between successive thoughts is brought about by chance relationships and verbal associations like clang association and proverbs. Found in mania, excited schizophrenics, organic states - hypothalamic lesions. Prolivity is a marginal variety of flight of idea where the speed of emergence of thoughts is not as fast as in flight of idea. Also called 'ordered flight of idea.' Found in hypomania.

2. **Inhibition/retardation of thinking:** The train of thought is slowed down and the number of ideas and mental images which present themselves is decreased. It is experienced as difficulty in decision making, lack of concentration, loss of clarity of thinking, diminution in active attention. It presented clinically as loss of memory, delusional idea of going out of one's mind. Found in depression, manic stupor.

3. **Circumstantiality:** Disturbance in associative thought and speech processes in which a patient digresses into unnecessary details and inappropriate thoughts before communicating the central idea. Found in schizophrenia, obsessional disturbances, epileptic personality change.

## II. Disorders of continuity of thinking

1. **Perseveration:** Repetition of the same response to different stimuli e.g. repetition of the same verbal response to different questions. In verbal stereotypy, the same word or phrase is used regardless of the situation; found in cognitive disorders, schizophrenia, generalized and localized brain disorders.

2. **Thought blocking:** Sudden arrest of the train of thought which may/may not be followed by an entirely new thought; found in schizophrenia, anxious and exhausted persons.

## Disorders of possession of thought

1. **Obsessions and compulsions:** Obsessions are persistent, involuntary and recurrent idea, thought or impulses that cannot be eliminated from consciousness by logic or reasoning. Compulsions are obsessional motor acts, the need to act on an impulse that if resisted produces anxiety. Commonest obsessive themes are dirt and contamination and aggression. Least common are religious and sexual (themes may vary with social change). Obsessions occur in obsessional states, depression, schizophrenia, post encephalitic states.

2. **Thought alienation:** Alienation means to transfer. In thought alienation the patient has the experience that his thoughts are under the control of an outside agency or that others are participating in his thinking. Thought insertion is the feeling of thoughts being inserted into the patient's mind by a foreign influence. In thought deprivation/thought withdrawal patient feels that as he is thinking, his thoughts suddenly disappear and are withdrawn from his mind by a foreign influence. Thought broadcasting is the feeling that one's thoughts are being broadcasted or projected into the environment. Thought alienation phenomenon is diagnostic of schizophrenia.

## Disorders of content of thinking

Delusions are false unshakable beliefs which are out of keeping with the patient's social and cultural background. Overvalued ideas are unreasonable and sustained abnormal beliefs that are held beyond the bounds of reason. In overvalued ideas, the person has at least some amount of doubt regarding the truthfulness of his belief. Ideas of reference are false personalized interpretations of actual events in which individuals believe that occurrences or remarks refer specially to them when they actually do not. True delusions are result of a primary delusional experience which cannot be deduced from any other morbid phenomenon. Delusion-like ideas are secondary and can be understandably derived from some other psychological phenomenon.

### Types of delusions

A. **Primary delusions (apophany):** A new meaning arises in connection with some other psychological event. These experiences can be reduced to three -

a. **Delusional mood** - Patient has a sense that something odd or uncanny is going on around him which concerns him, but he does not know what it is.

b. **Delusional perception** refers to the experience of interpreting a normal perception with a delusional meaning, one that has enormous personal significance to the patient.

c. **Sudden delusional idea/autochthonous delusion** take form in an instant without identifiable preceding events. Usually the meaning of delusional mood becomes obvious when a sudden delusional idea or a delusional perception occurs. Primary delusions are found in schizophrenia, epileptic psychosis, depression. Primary delusion is true delusion.

B. **Secondary delusions:** Secondary delusions can be understood as arising from some other morbid experience. It can be secondary to depressive mood, hallucination, psychogenic or stress reactions. For example, a person becomes depressed, suffers very low mood and self-esteem, and subsequently believes he is responsible for some terrible crime which he did not commit in reality. Secondary delusions are delusion like ideas.

### Conard's five stages in development of delusion:

Trema is delusional mood representing a total change in perception of the world.

Apophany is search for and finding of new meaning for psychological events.

Anastrophy is heightening of psychosis.

Consolidation is forming of a new world or psychological set based on new meaning.

Residuum is eventual autistic state.

### Characteristics of delusion

Simple vs. complex: Simple delusions contain relatively few elements. Complex delusions may contain extensive elaboration of people, spirits, motives and situations.

Complete vs. partial: Complete delusions are those which are held without any doubt. In partial delusion, the patient entertains some amount of doubt about his delusional beliefs.

Systematized vs. non systematized: Systematized delusions are restricted or circumscribed to well delineated areas and are ordinarily associated with a clear sensorium and absence of hallucination. Non systematized delusion extends into many areas of life and new people and situations are constantly incorporated to support the presence of delusion.

Persecutory vs. non persecutory delusions: In persecutory delusion the affected persons feel that they are being persecuted or that others are in a plan to harm them.

### The content of delusions

1. **Delusion of persecution** - the archetype of delusional disorder. It is false belief of being harassed or persecuted. Associated with querulousness, irritability and anger and the individual who acts out his or her anger may at times be assaultive or even homicidal. Delusion of persecution occurs in the context of primary delusional experience, auditory hallucination, bodily hallucinations or experiences of passivity.

Forms of persecutory delusions: Delusion of guilt - some patients with severe depression believe that they are extremely wicked and are going to be imprisoned for life or put to death. Delusion of being poisoned is also common (based on hallucination of smell or taste). Delusion of influence is a logical result of the passivity in the context of schizophrenia. Passivity may be explained to a result of hypnotism, demonical possession, witchcraft, radio waves, atomic rays and television.

2. **Delusion of jealousy** - The patient has morbid jealousy and delusion of marital infidelity. Often the patient has been suspicious, sensitive and mildly jealous before the onset of the illness. Delusion of infidelity may develop gradually, as a suspicious or insecure person becomes more and more convinced of their spouse's infidelity and finally the idea reaches

delusional level. Found in schizophrenia, coarse brain disease, alcohol addiction.

3. **Delusion of love** - Also called 'erotomania' and 'the fantasy lover.' The patients are convinced that some person is in love with them although the alleged lover may have never spoken to them. Found in abnormal personality developments, schizophrenia.

4. **Grandiose delusion** - Exaggerated concerns about one's importance, power or identity. Believes that one has special powers and is accomplishing or will accomplish extraordinary things for good of the community. Some people believe that they are God, king or rock star whereas some others believe they are skilled sportsperson or great inventors. Found in mania, schizophrenia.

5. **Delusion of ill health** - Delusion of ill health may develop on a background of concerns about health. Found in schizophrenia, depression, abnormal personality development. Hypochondriacal delusions are beliefs that one's body is unhealthy, diseased or chronically ill. It may be the result of depression, bodily hallucinosis or a sense of subjective change. Found in chronic schizophrenia.

6. **Delusion of guilt** - Patient believes they are bad or evil person and have ruined their family. And that they have committed unpardonable sin and insist that they will rot in hell for this. The sin is usually masturbation or extramarital sexual intercourse. Delusion of guilt can give rise to grandiose and persecutory delusions. Found in severe depression.

7. **Nihilistic delusions (delusion of negation)** - Patients deny the existence of their body, their mind, their loved ones and the world around them. They may assert that they have no mind, no intelligence, or their body or parts of body do not exist. They may deny their existence as person or believe they are dead or whole world has stopped. Found in severe depression, schizophrenia, states of delirium.

8. **Delusion of poverty** - The patient is convinced that he is impoverished and believes that destitution is facing him and his family. It is typical of depression.

9. **Delusional misidentification** - A class of delusional beliefs that involve the misidentification of people, places, or objects. In Capgras syndrome, the patient believes that someone close to him has been replaced by an exact double. Delusion of disguise (Fregoli's syndrome) is a rare disorder in which a person holds a delusional belief that different people are in fact a single person who changes appearance or is in disguise. The condition is named after the Italian quick change artist Leopoldo Fregoli. In delusion of subjective doubles the patient's own self is perceived as

being replaced by a double. Syndrome of intermetamorphosis is a rare variant of Capgras syndrome involving a patient's perceiving that an individual has been transformed both psychologically and physically into another person. In Cotard's syndrome individuals report that they have lost all of their possessions, status and strength including their organs.

10. **Delusion of control** - False belief that one's will, thought or feelings are being controlled by external forces.

11. **Shared delusion (folie a deux, folie a trois, folie a famille)** - False belief shared commonly among spouses, in a parent and a child, or in close siblings (often sisters) who have lived together for a long time.

### The reality of delusions

Not all patients with delusion act on their delusional belief. Usually when a delusional illness becomes chronic, there is discrepancy between the delusions and the patient's behaviour e.g. a grandiose patient may scrub the floor. Delusions or overvalued ideas of jealousy seem to be the most dangerous kind because overvalued and delusion-like ideas occur in intact personality but true delusions occur in a disintegrated personality. Action is more likely to be taken on the basis of overvalued ideas and delusion like ideas than on the basis of true delusions.

### Disorders of the form of thinking

Normal human thinking has three characteristics -

1. **Content:** what is being thought about – this would include delusions and obsessional thoughts.
2. **Form:** in what manner, or shape, is the thought about; abnormalities of the way thoughts are linked together.
3. **Stream or flow:** how it is being thought about – the amount and speed of thinking.

Formal thought disorders are characterized by disturbance in the form or flow and connectivity of thought. Schneider's five features of formal thought disorder:

1. **Derailment:** The thought slides onto a subsidiary thought.
2. **Substitution:** A major thought is substituted by a subsidiary one.
3. **Omission:** Senseless omission of a thought or a part of it.
4. **Fusion:** Heterogenous elements of thought are interwoven with each other.
5. **Drivelling:** There is a disorganized intermixture of constituent parts of one complex thought.

## Formal thought disorders

1. **Tangentiality** - Oblique, digressive, irrelevant manner of speech in which the central idea is not communicated at all.

2. **Loosening of association** - Characteristic schizophrenic thinking or speech disturbance involving a disorder of logical progression of thought, manifested as a failure to communicate verbally adequately. Unrelated and unconnected ideas shift from one subject to another.

3. **Clang association**: It refers to a sequence of thoughts stimulated by the sound of preceding words rather than their meaning. Manic patient says, "I will kill with a drill or a pill."

4. **Word salad**: Incoherent, essentially incomprehensible mixture of words and phrases, usually seen in far advanced cases of schizophrenia.

5. **Asyndesis**: Cameron (1944) used this term to describe the lack of adequate connections between successive thoughts.

6. **Overinclusion**: Inability to narrow down the operations of thinking.

7. **Neologism**: New word or phrase whose derivation cannot be understood as in schizophrenia.

## Objective thought disorders

1. **Transitory thinking** - Transitory thinking is characterized by derailments, substitution and omissions. The grammatical and syntactical structures are both disturbed in transitory thinking.

2. **Drivelling thinking** - The patient has a preliminary outline of a complicated thought with all its necessary particulars, but loses preliminary

organization of the thought so that all the constituents get muddled together.

3. **Desultory thinking** - In desultory thinking, speech is grammatically correct but sudden ideas force their way in from time to time which if used at the right time would be quite suitable. These are characteristics of schizophrenia.

## Recent advances

Neurobiology of creative thinking: Three-factor model of the creative thinking (2005 by Alice Flaherty)

Drawing from evidence in brain imaging, drug studies and lesion analysis, the creative drive is seen to be resulting from an interaction of the frontal lobe, temporal lobe and dopamine from the limbic system. The frontal lobes can be seen as responsible for idea generation, and the temporal lobes for idea editing and evaluation. High activity in the temporal lobe typically inhibits activity in the frontal lobe, and vice versa. High dopamine levels increase general arousal and goal directed behaviours and reduce latent inhibition, and all three effects increase the drive to generate ideas.

## Bibliography

1. Kaplan & Sadock's comprehensive textbook of psychiatry, 9th edition – Benjamin J Sadock and Virginia A Sadock.
2. Synopsis of psychiatry, 10th edition - Benjamin J Sadock and Virginia A Sadock.
3. Introduction to psychology, 7th edition – Morgan and King.
4. Fish's clinical psychopathology – Casey and Kelly.
5. Symptoms in the mind, 3rd edition – Andrew Sims.
6. Introduction to psychology, 6th edition - Richard C Atkinson and Rita L Atkinson.
7. Internet.