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CREATIVITY AND LATERAL THINKING

Creativity is a word that covers a great deal. Artists are said to be creative because they do not imitate but produce something new. Yet many artists may simply be using their old style of perception to look at new things. With other artists both the style and the subject matter change. Inventors are said to be creative if they come up with a new invention which works. Scientists are said to be creative if they make a new discovery. The common element seems to be the production of something new.

In many instances such as those above there may be little flexibility and no change of ideas. An artist may be quite unable to see things in a new way. An inventor may be quite unable to approach inventions in a new manner. A scientist may be quite inflexible in changing his or her ideas.

Lateral thinking is specifically concerned with the generation of new perceptions and new ideas. Lateral thinking involves changing perceptions and flexibility. There is an overlap with creativity since both are concerned with producing something new, but **lateral thinking is a more precise definition of the process of changing perceptions: changing the way we look at things.**

If a person produces something new that is not good, he/she is not considered to be creative. Use of the term "creativity" is usually a value judgment of a result. Lateral thinking, on the other hand, is a process. A result can only be admired but a process can be practiced and used. Sometimes a person may use lateral thinking and not come up with anything useful. Lateral thinking is also different from divergent thinking, though again there is some overlap. Divergent thinking is only part of the process of lateral thinking. Lateral thinking is not just concerned with generating alternatives but with changing patterns, with switching to new and better patterns. The end product of lateral thinking is insight, not multiplicity of alternatives.

In spite of the above remarks the general term "creativity" is used throughout this booklet and in the **CoRT 4** lessons. This is because it is the more common term and there is no point in insisting on "lateral thinking" as a more precise term.

FIRST AND SECOND STAGES OF THINKING

The second stage of thinking is the "processing" stage. Over the years we have developed many excellent techniques for dealing with the second stage of thinking: mathematical processes, algorithms, logical selection and progression, etc. But the second stage can start only when we have decided how we are going to look at the situation: when we have chosen our concepts and accepted our perceptions. But accepting our perceptions and choosing our concepts occurs in the first stage of thinking. Often this stage is called "perception" and it covers the way we look at things, the way we approach things. Traditionally, this stage has been left to chance, habit and experience because there has not seemed to be an alternative. This perception stage of thinking is the patterning stage and it is a change in patterns at this stage which gives rise to creativity.

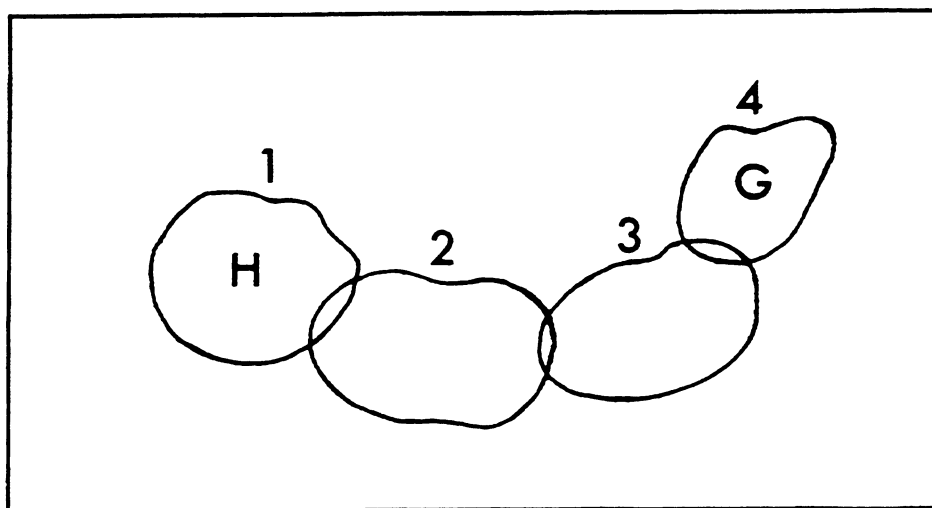
When people are given the task of designing a dog exercising machine, the results tend to fall into predictable groups. There are those who suggest a sort of motor-driven conveyor belt with the dog running against the direction of movement. Others suggest a treadmill with the dog inside. Some suggest a harness from which a bone dangles a few feet in front of the dog's nose. Many suggest some sort of temptation device which might consist of a cat in a tree (dog jumping machine) or a ball thrown by its master. Most of these are ways of making a dog exercise. On one occasion a youngster of about seven turned up a completely different concept. His dog was towing, by means of straining in a harness, a rather heavy cart. The cart was heavy because it carried a car battery. From the battery two wires led to an electrified prong positioned a few inches from the dog's rump. The child indicated that if the dog stopped, the cart (being heavy) would run into it and make the dog go again. In other words this young designer was not concerned with making the dog exercise but with preventing the dog from stopping. This is an excellent example of a change in the first stage of thinking.

PATTERNS

The mind operates to make sense of the world around it by creating patterns. A pattern is simply a putting together of things so that one thing leads to another: a picture of a cup leads to the word "cup" and also the notion of drinking; the shape of a square leads to recognition of the word "square"; the letters "c-a-t" lead to the sound cat and perhaps a mental image of a cat. There is nothing mysterious about patterns. A pattern simply means that one thing is more likely to follow another than would be indicated by chance. Those who want to read about patterns in detail, and in particular their formation, should read the author's book *The Mechanism of Mind* (Jonathan Cape, London 1969, and Penguin 1985, London). A much simplified description of the formation of patterns is given below.

THE TOWEL MODEL

A small towel is laid out on a table. A bowl of ink is placed nearby and from time to time a spoonful of ink is taken from the bowl and poured on to the towel. The ink leaves a stain on the towel. When a number of spoonfuls of ink have been placed on the towel there are a number of stains as shown in the diagram.



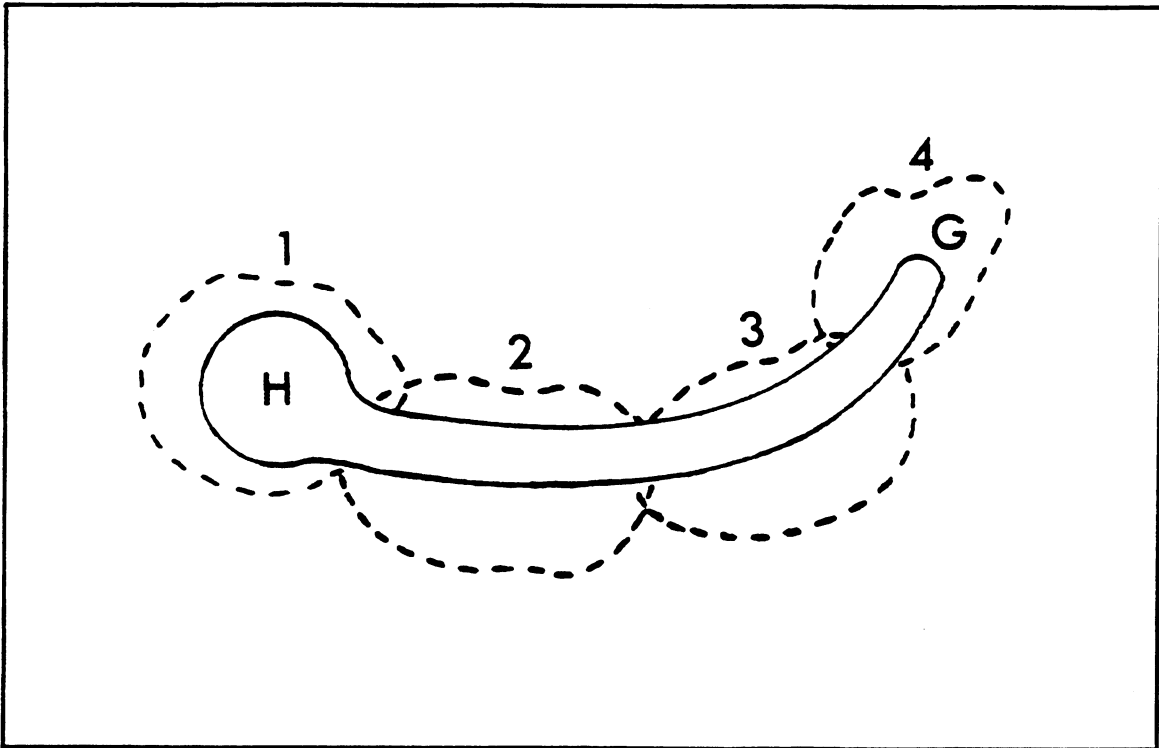
In this simple model the towel represents the memory system or recording system and the ink input represents incoming information. At the end of the process the towel carried a good record of all that has been done to it. You can look at the towel and tell at once where

the spoonfuls of ink had been placed. To use the information found on the towel, an outside processor is necessary. This is the classical view of the mind and of computers: a memory storage system and a separate processor that uses the memory.

THE JELLY MODEL

The jelly model is very different from the towel model. Instead of the towel the recording surface consists of a shallow dish of jelly or gelatin. This time the bowl of ink is heated up. When a spoonful of hot ink is poured onto the gelatin surface the exposed surface dissolves. The hot ink, however, soon cools down and no more gelatin is dissolved. When the fluid is poured off a shallow depression is left in the surface of the gelatin. This corresponds to the ink stain in the towel model and is the memory or record of ink input. So far the models appear to be similar.

But if exactly the same sequence of spoonfuls of ink are placed at exactly the same places the effect is very different. In the gelatin model a channel forms. This is because hot ink flows into the existing depression and makes that even deeper, leaving a shallow impression at the point of application. The next spoonful flows into the preceding depression and on to the first depression . . . and so on. At the end there is a channel eroded across the surface of the gelatin.



The two systems are actually very different. In the towel model information stays where it has been placed: a "G" input stays at G and, "H" input stays at H. But in the gelatin model a "G" input flows along the channel and ends up in the same place as an "H" input. In other words a pattern has been formed in the gelatin model and one input leads directly to another.

In fact the jelly model is a pattern-making model because it creates a pattern from an input of information. It does this by means of making use of the sequence of the input. If the sequence is changed then a different pattern forms or no pattern at all.

In terms of perception all the evidence indicates that the brain works as a patterning system. Indeed humor and insight would be impossible if it did not. Of course in the brain there are nerve networks and synaptic connections instead of gelatin but the patterning process is similar (as far as we know).