

UNDERSTANDING HOW EMPLOYEES THINK

Aim

Understand the way in which employees think in light of psychological principles.

SENSATION AND PERCEPTION

People in industry are engaged in various forms of work, and in order to know how each individual is suited for a particular job, it is necessary to know why they behave as they do and also to find out how people behave under differing circumstances. To find the answers to these questions it is necessary to study a person's emotional and mental makeup, and their reactions to external stimuli and to internal thoughts.

To do this we must understand the processes of sensation and perception.

The study of perception is one of the oldest objectives of psychology. Artists, philosophers, physicists and psychologists have long been intrigued by this phenomenon, and there is good reason for this fascination on how we sense the world. Sensation is a stimulus to the brain, which causes an emotional reaction, while perception is the understanding through memory, ideas or imagination.

There is pleasure and profit in being sensitive. There are beautiful things around us - things that our senses alert us to, which provides us with an opportunity to explore. Our eyes are used to telling us about colour and design. Smell and taste are gratified by attractive scents. We can be soothed by soft touch and wakened by a caress. Our senses however are not only for pleasure. We can just as easily be displeased by what we sense. We tend to avert our eyes and ears when our senses tell us that information being received is too intense. Bad smells & tastes also repel us.

Consider an everyday example of perception:

Suppose we visit a restaurant to which we are regular customers. We are accustomed by force of habit to the height of the chairs and tables. This is a perception. Now, if the chairs have been replaced with chairs that are lower, and this fact goes unnoticed, we can experience a shock as our body falls lower than we had subconsciously allowed for. We have, in this case, experienced an emotional sensation, which could be a fear of falling, or annoyance at being caught off guard.

Sensation normally has a sensory context in which it is associated. In referring to the example above, each time we take a seat in the restaurant, we are consciously aware what to expect. If this experience is called to mind in circumstances quite different from the original, then the perception will be isolated.

To illustrate this, imagine the smell of newly turned earth. This sensation is lined with a perceptive emotional background (e.g. a flower garden, the scent of flowers, warm summer days, etc.). Now, try to recall the earthy smell of a garden when you are driving a car along a freeway. The perception is now isolated, all you have is memory, which is a poor substitute for the original aroma.

Our perceptual systems collect information from our surroundings, and monitor our activities. These collection systems can be seen as links in a chain, which stretches, from the external environment through the individual and back into the environment. A chain is only as strong as its weakest link, and each segment of this chain is essential if the environment is to be reliable, and if the outcomes of our actions are to be as desired.

There are seven links in this chain (described below).

1. *The Environment*

This is the commencement of the chain and the environment possesses many properties, which are sources of final perception. The questions, which can be asked, are:

- Which properties does the environment possess, that are sources of the final perception.
- What objectives and energies does it contain?
- What is their location and distribution?
- What are the physical attributes that permit us to experience size, colour, hardness, movement, duration, change etc?

2. *The Medium*

This is the second link in the chain by which the environment transmits its properties to our senses. Some objects transmit by projecting light to our eyes. Some send sound waves or chemicals through the air. One type of object will dissolve in the mouth, others will resist skin pressure, and others still will affect the skin by means of radiant or reflected heat. Other objects act on the body by means of a force, like strong wind or gravitational force.

3. *Interaction*

This is the third part of the chain -it is the interaction of various forms of energy with the sensitive receptors in the perceptual system. It should be noted that interaction is referred to, not merely reception. If a receptor is stimulated its condition may be so altered that any further stimulation will produce effects that are different from the effects produced by the first stimulus. Example: a bright light will cause the iris of an eye to close so that less light can enter the eye.

4. *The Sensory Nerves*

This link consists of the sensory nerves which lead from the receptor organs to the brain. The sensory neural pathways may be short, as is the path from the ears to the brain, but others from the toes for example, may be long.

5. *The Brain*

This is the fifth link in the perception chain. The relevant part of the brain is the sensory areas where the sensory pathways first meet the cerebral cortex. Other parts of the brain are still concerned however, because neurons arising from the first sensory areas travel to other regions of the brain for further processing.

6. *The Two-way Loop*

A full appreciation of the chain of perception requires that we think of the process as a two-way loop. There are many cases where a neural pathway going "up" the chain is matched by a neural pathway going "down". The impulses of the "down" pathway can have an effect upon the signals of the "up" pathway. If this happens, the effect of the various environmental properties on the perceptual system may be changed or modified.

The structuralist belief is that past experience is very important in determining what is seen as a whole. Their argument was that the separate parts of a person had been seen together many times before, hence, these parts become associated with one another. This argument also applies to the chair, thus over time, one comes to see the person, and the chair, as separate.

The Gestalts used demonstrations and experiments to illustrate their theory. Such an experiment might involve a collection of lines which had a recognisable configuration incorporated amongst some unrecognisable swirls. The parts of the drawing which had some familiarity would be identified, after looking for a while; though at first glance the "whole" picture may have been unrecognisable.

What the Gestalts looked for in place of past experience, was "Laws of Form or Organisation", which would indicate what was perceived as a result of particular stimulation. They further claimed that past experience plays only a minor role in perception. They appealed to the "Law of Good Continuation" (i.e. the tendency for elements of a stimulus to go together in such a way as to permit the continuity of a straight line or curve). Further, the Gestalts believed in innate laws of brain organisation in which, when a certain stimulus pattern is presented, it activates the brain processes and the perceptual experience.

From this it can be seen that if we find laws which tell what will be perceived with each pattern of stimulation, and if the whole stimulus pattern must be considered in order to reach the right prediction, then there is no point in clinging to the theory of the structuralist psychologists that there are elementary sensations lurking somewhere which underlie all perception.

THINKING PROCESSES

The activity of thinking is a mental condition that arises when one is faced with a difficulty or a problem. There is another activity which is a close ally to this type of thinking: the type of thinking that does not necessarily involve a problem. Here the consciousness is allowed to wander into its own unconscious desires. This is called "day dreaming" and is usually a natural form of escape from some condition which is not welcomed by the consciousness, or to escape to a stimulus desired by the physical. This phenomenon does not require any real conscious thinking, and day dreams are of little practical value, with the exception of those cases where their recurrence can incite the dreamer to use extra effort to make the day dreams come to fruition.

This is however divorced from the real activity of thinking, which we will now consider. Take one case of an electrical engineer who has to design an electrical installation. He will need to ponder such questions as-the type of materials available, space, the required light output, and the cost. He will consciously think of the job involved, bringing all of his past experience to bear on it. Similarly, a student who is faced with a problem, which is preventing or delaying the completion of an answer, must use his brains to seek a way around difficulties that hinder progress.

A Description of Imagery and Its Uses

We will begin our discussion of this section by comparing two types of mental elements which make up a person's experience.

- Precepts
The first of these mental elements is the perception of physical objects which exist in the physical world and they may also be perceived by anyone else who should be present. These are definite objects: -a house, trees, road, children, etc.

- **Images**

The second group of mental elements are images of objects not immediately present in the physical world. These are images of past events, absent objects and things that are yet to be created. A memory image produces or resembles something which we have experienced in the past, for example. As we attempt to describe the house which we lived in as a child we may in some sense "see it" although the house may no longer exist. Another form of image is the created or constructed image -the novelist pondering over his next book might "see" his heroine, a person who never existed in the real world.

One associates images with each of the senses, the strongest being the visual image, which is the most intrusive of all images -hence, the saying: "One picture is better than a thousand words" It is difficult to imagine the taste of something without first visualising the object.

It is possible to recall a friend by the tone of voice, and on hearing a similar voice, the friend will be visualised.

If you blindfold someone, and then ask them to taste food or drink, they will associate the sense of taste with the article conjured up in their mind. Hence, in the same way the sense of touch and smell play a part in imagery, which as we have seen, stimulates thinking.

ACTIONS

There are three types of action: reflex, instinctive and habitual, which are in contrast to proper thinking. In each of these cases, the required move is made without any pause for thought. If while walking, we hear our own name yelled a simple reflex action would cause us to look around.

If you see a child in the middle of the road with a car approaching, a reflex action would cause you to call the child away from danger. An instinctive action on the other hand would cause you to freeze and remain motionless. Habitual actions are those to which we have become accustomed because of repetition, for example, eating and dressing.

A very good example would be a person waking up at the same time each day.

THE POWER AND VALUE OF ATTENTION

At any given moment, there are many possibilities of stimuli, which are within the reach of our perceptions. It is impossible for the mind to absorb all of these stimuli simultaneously. It is necessary for the mind to make a selection, and the act of this selection is known as "attention". In a schoolroom, the teacher says in a moderately loud voice "Tommy, pay attention". Tommy, who has been day dreaming, sits up, turns toward the teacher and becomes more receptive to any stimuli which come his way. Several of many, but related meanings of attention are involved in this example:

Level of Attention

The readiness of a person to perceive varies over time. Even ignoring the extreme variations owing to different physical states (e.g. sleep and awake), there are certain times when we are more alert than others.

The degree to which one is stirred depends upon the degree of one's perception. The more aroused a person is, the more they will perceive.

Vigilance

This is the ability to maintain accurate perception over a sustained period of time. Some jobs require a high level of vigilance. These are jobs such as piloting an aeroplane, or working in a factory assembly line. There are other jobs which require hard work or high intelligence, but do not require the same vigilance. Vigilance depends upon one's level of arousal, but it is also true that a high level of arousal can produce a decrease in vigilance. This is one reason why eye witnesses to a crime or UFO sighting should not be accepted too readily.

Selective Attention

Attention can be described as the selective activity of the conscious. It can be likened to a torch beam, focussing first on one item and then on another. The factors which develop attention are two types:

- Objective, which depends upon the nature of the object under notice.
- Subjective, which depends upon interests, tastes and moods.

Anything that is inconspicuous can attract our attention if it should happen to be of particular interest.

This attention may be either voluntary, or non-voluntary.

Wherever we go, the arresting power of attention is around us. It may be the hooting of a car horn, a poster on a wall, or an unexpected event.

INTELLIGENCE

Intelligence is a broadly conceived concept, used in different ways by different people. It has been defined by some experts as psychometrics, which is the art of mental measurement; or the "Ability to adapt to new circumstances". Others define it as "The ability to learn". Still others define it as "the capacity to deal with complex or abstract material". Different psychologists have championed different definitions, but no clear cut definition has ever been established. It is for this reason that many psychologists have settled for an operational definition, which is - "Intelligence is what the intelligence tests measure".

It can be seen that some people are much better at solving problems than others. This can occur even if they have the same experiences and environment. It is true of all people, adults, adolescents or smaller children. It can also apply to all types of problems; social, business and school. Different people possess the quality which has come to be accepted as intelligence, in different degrees.

Intelligence should not be confused with knowledge. A child of six years old may have more intelligence than an adult of thirty, but will not have more knowledge.

It is generally accepted that intelligence is a latent ability which is present in everyone, but the quality of intelligence depends upon the powers of perception and the ability of a person to translate the perception into facts which have been inherited by the individual.

From the above this should be realised that an individual may have a considerable knowledge. In fact he may be specialised in a particular field. It does not however follow that his intelligence is of a high standard. There is no direct relationship between intelligence and knowledge - knowledge can only be acquired by experience.

We will look more at intelligence in a later lesson.

LEARNING

Learning involves far more than what happens in education. The process of learning is basic to every new habit formed as the result of experience. A child learns to identify its parents, to cry for their attention, to love them, to fear the neighbour's dog, etc. They also learn how to control their bladder, to respond to verbal instructions and to sense people's meanings from facial expressions. Even talking is learnt.

Most of us learn to behave in ways which society approves of. A few of us learn to hate social rules, or at least how to avoid following them. Some people learn to be anxious when there is no real danger: such acquired anxieties may become a ruling factor in our lives, in which case they are called neuroses.

We learn to plan for our future, to delay immediate gratification in favour of more distant goals. It is possible for creative individuals to learn new creative ways of doing things, and to develop artistic or intellectual abilities and use them for the benefit of the world. We learn religious attitudes, and systems of thought -which are called scientific theories.

The ability to learn is closely related to the process of memory. Intellectual activity no doubt assists learning, but motor activity is also important in the process. Learning also depends heavily on individual interest, and the attention given to the process. In other words, learning involves the capacity to adapt one's mind and behaviour to the task and can be summed up as follows:

- Trial and error is the most primitive form of learning.
This is common with children or animals, but adults also use the method occasionally. It involves failing, then retrying until a successful conclusion is reached.
- Constant repetition without understanding.
This is a method which is characteristic of early speech training, although the method can exist in certain circumstances throughout life.
- The most effective method of learning is one involving constant repetition together with an understanding of the principles involved, and the reason for taking one action rather than another.

This is the method which makes use of intelligence, and definitely the most effective method of learning.

CONSTRUCTING THE MEMORY

In studies of memory, three aspects are considered. They are:

- Encoding
Information received in the mind is transformed in order that it will reside in the memory in a different form from that given by the stimulus.
- Storage
This depends on whether stimuli received are committed to short or long term memory. Memory based on short transitory media is very short -perhaps a few seconds to a few hours. (e.g. trying to recall an unfamiliar telephone call you dialled earlier in the day). Other memories can live for years or even decades. This type of memory is converted and committed to deeper sanctities of the brain, mainly by repetition.

- Retrieval
Short term memory retrieval is usually immediate whereas we often need to work at retrieving longer term memories. Neither of these two assumptions are correct. When one desires to recall an item from memory, the brains memory store is scanned. The scanning proceeds by serial scanning, one item at a time ...but extremely fast.

Our capacity for memory is so vast that even fully utilising the brain for 70 years, its capacity would only be half utilised. No one has bad memory! The memory itself is perfect unless damaged by an accident.

If you tell yourself you cannot remember, your mind tends to block recall; but if you allow memory to function effortlessly, without trying to block it, the response to recall will then be good.

There are several exercises that can help a person memorise. These are:

- Make sure you understand that which you recall. Material which has a meaning is more easily recalled than that which is meaningless, not fully understood or in which interest is lacking.
- Try to remember by using the positive aspect "I know"
- Seek the feature around which the whole is formed. This involves intelligent selection of what one wishes to recall.
- In those circumstances where essential parts go to form the whole; remember the whole and not the parts.
- If the item cannot be recalled, sleep on it and let the unconscious do its work. It is surprising how often this works.
- Frequent repetition of the items will give dominant priority. This is the method of revising and re-revising before examinations.



SELF ASSESSMENT

Perform the self assessment test titled 'Self Assessment Test 2.1'
If you answer incorrectly, review the notes and try the test again

SET TASK

There are certain things that a person tends to forget, but can then recall at a later date. Talk to at least two people about their workplace, and ask them when and where, based on their own experience, they might forget things at work and later recall them. Try to diagnose the reasons for failing to recall in at least three of these instances. Make notes.



ASSIGNMENT

Download and do the assignment called 'Lesson 2 Assignment'.