

D(I)H Paper I-Basic Psychological Processes Topic: Signal Detection

3 P

Signal Detection: Absolute and differential thresholds

Signal detection is the ability to differentiate between information-bearing patterns and random patterns that distract from the information. One of the early goals of psychologists was to measure the sensitivity of our sensory systems. This activity led to the development of the idea of a threshold, the least intense amount of stimulation needed for a person to be able to see, hear, feel or detect the stimulus.

The physical value of the stimulus should reach a particular level beyond zero before it can elicit a mental response. In the area of visual sensation, for example, the intensity of the light stimulus should be a little above zero for the sensation of light to occur.

Stimulus Threshold-RL - The Psychophysicists called that value of the stimulus above or zero at which a sensation takes place and below which one experiences no sensation, the least noticeable value of the stimulus. They

gave a technical name to this minimal value. They called it 'limen' in German, which is translated as 'threshold' in English. The least noticeable value of a stimulus was thus called the Stimulus Threshold. The stimulus threshold was termed in German as 'Reiz limen' its abbreviation is 'RL' and is a standard for the least noticeable value of a stimulus. It has been found that individuals differ in respect of the value of RL. Some persons can notice a stimulus at a much lower value when compared to some other persons. Thus RL also becomes a measure of sensitivity to a stimulus or of sensory acuteness.

Differential threshold - D.T. It is the difference between two stimuli or between one level of a stimulus and another level of that stimulus, when stimulus refers something that causes a change in an organism. For example lipstick, the stimulus is light - the visible colour of the lipstick. The Absolute threshold was the amount of colour for

than which you would not know she was hearing
any. The differential threshold for the lipstick
could be the difference between the palest of
pinks and the deepest of reds. Or it could
be the just noticeable difference between
palest pink and pale pink. Differential threshold
is the individual's potential to differentiate
between or among the variables. This threshold is
denoted by $D.L.$

This is also called J.N.D. - Just
noticeable difference. It is the minimum level of
stimulation that a person can detect 50 percent
of the time. For example, if you were asked
to hold two objects of different weights, the
just noticeable weights would be the minimum
weight difference between the two that you
could sense half of the time.

It is important not to confuse the
just noticeable difference and the absolute threshold.
While the difference threshold involves the ability
to detect differences in stimulation levels,
the absolute threshold refers to the smallest
detectable level of stimulation.