

Attention

(...) In some ways attention and perception are similar. You need to hear, see, or feel a stimulus to attend to it. But we can also pay attention to internal inputs such as thoughts and ideas. One can be distracted by thoughts that continue to intrude on your mind as well as memories that can be summoned by smells or songs on a radio. In this manner, perception and attention become separate but related constructs.

When a stimulus is perceived initially the perception is at the level of the senses. Additional information processing then occurs where a link for encoding is established in order for the information to be further processed. At this level, the processing is purely perceptual. Once analysis and encoding of the stimulus takes place, higher stages of information processing are used and attention comes into play. Generally, stimuli that are salient and being attended to are processed and, subsequently, the person becomes aware of the stimulus.

Generally, the most salient information of a stimulus is selectively attended to while irrelevant information is discarded. In this manner stimuli is selected to be attended to so that a person will not become overwhelmed by too much stimulation. At times, however, unattended information that was not completely deleted from conscious awareness is perceived by the person. If this information is important enough, it may become attended to and selected for further processing. This selection allows for previously irrelevant stimuli to become relevant when attention processes switch from attended input to unattended input (Broadbent, 1970; Treisman, 1969).

Woldorff and Hillyard (1991) studied the responses of attending to one ear while ignoring input to the other ear. Findings indicated that brain activity showed a larger response to the attended stimuli compared to the unattended one. Neuroimaging techniques can trace brain activity level to specific locations. The attention control systems have been found to affect how neurons interpret the features of the attended or unattended stimuli. In other words, attention directs which neurons fire in response to a perceptual input. For example, when a student attends to a teacher presenting in the classroom, neurons in the auditory comprehension and language areas of the brain become active while those in the motor or sensory areas of the brain are not activated. By having specific areas of the brain energized for selected types of tasks, the person is able to focus attention on those aspects and ignore extraneous noises and sensory input.

Reference: Semrud-Clikeman, M. Kutz, A. (2005). Attention. In. Lee, S. W. (Ed.). Encyclopedia of School Psychology (pp. 28-31). Thousand Oaks, CA: Sage Publications.