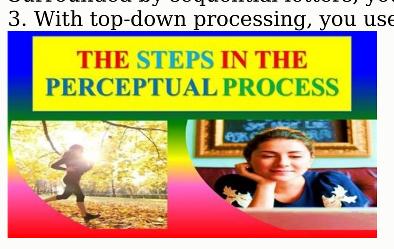
I'm not robot
reCAPTCHA
Continue

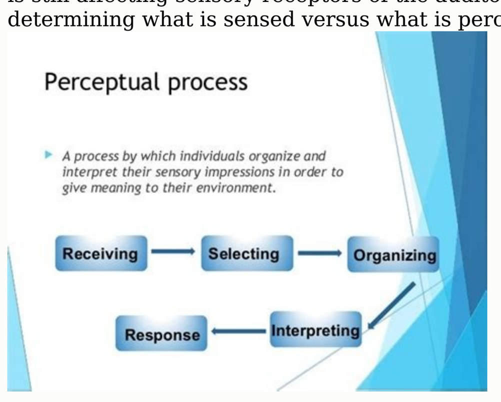
Perceptual process in psychology pdf

Perception process pdf. Steps in the perceptual process. Perceptual process pdf. Perception process diagram.

Learning Objectives Discuss the roles attention, motivation, and sensory adaptation play in perception While our sensory receptors are constantly collecting information from the environment, it is ultimately how we interpret that information that affects how we interact with the world. refers to the way sensory information is organized, interpreted, and consciously experienced. Perception involves both bottom-up and top-down processing. refers to the fact that perceptions are built from sensory input. On the other hand, how we interpret those sensations is influenced by our available knowledge, our experiences, and our thoughts. This is called . Look at the shape in Figure 1 below. Seen alone, your brain engages in bottom-up processing. There are two thick vertical lines and three thin horizontal lines. There is no context to give it a specific meaning, so there is no top-down processing involved. Figure 1. What is this image? Without any context, you must use bottom-up processing. Now, look at the same shape in two different contexts. Surrounded by sequential letters, your brain expects the shape to be a letter and to complete the sequence. In that context, you perceive the lines to form the shape of the letter “B.” Figure 2. With top-down processing, you use context to give meaning to this image. Surrounded by numbers, the same shape now looks like the number “13.” Figure 3. With top-down processing, you use context to give meaning to this image.



When given a context, your perception is driven by your cognitive expectations. Now you are processing the shape in a top-down fashion. One way to think of this concept is that sensation is a physical process, whereas perception is psychological. For example, upon walking into a kitchen and smelling the scent of baking cinnamon rolls, the sensation is the scent receptors detecting the odor of cinnamon, but the perception may be “Mmm, this smells like the bread Grandma used to bake when the family gathered for holidays.” Although our perceptions are built from sensations, not all sensations result in perception. In fact, we often don’t perceive stimuli that remain relatively constant over prolonged periods of time. This is known as . Imagine entering a classroom with an old analog clock. Upon first entering the room, you can hear the ticking of the clock; as you begin to engage in conversation with classmates or listen to your professor greet the class, you are no longer aware of the ticking. The clock is still ticking, and that information is still affecting sensory receptors of the auditory system. The fact that you no longer perceive the sound demonstrates sensory adaptation and shows that while closely associated, sensation and perception are different. Attention and Perception There is another factor that affects sensation and perception: attention. Attention plays a significant role in determining what is sensed versus what is perceived. Imagine you are at a party full of music, chatter, and laughter. You get involved in an interesting conversation with a friend, and you tune out all the background noise.



If someone interrupted you to ask what song had just finished playing, you would probably be unable to answer that question. See for yourself how inattentional blindness works by watching this selective attention test from Simons and Chabris (1999): You can view the transcript for “selective attention test” here (opens in new window). One of the most interesting demonstrations of how important attention is in determining our perception of the environment occurred in a famous study conducted by Daniel Simons and Christopher Chabris (1999). In this study, participants watched a video of people dressed in black and white passing basketballs. Participants were asked to count the number of times the team in white passed the ball. During the video, a person dressed in a black gorilla costume walks among the two teams. You would think that someone would notice the gorilla, right? Nearly half of the people who watched the video didn’t notice the gorilla at all, despite the fact that he was clearly visible for nine seconds. Because participants were so focused on the number of times the white team was passing the ball, they completely tuned out other visual information. Failure to notice something that is completely visible because of a lack of attention is called . In a similar experiment, researchers tested inattentional blindness by asking participants to observe images moving across a computer screen. They were instructed to focus on either white or black objects, disregarding the other color. When a red cross passed across the screen, about one third of subjects did not notice it (Figure 4) (Most, Simons, Scholl, & Chabris, 2000). Figure 4. Nearly one third of participants in a study did not notice that a red cross passed on the screen because their attention was focused on the black or white figures. (credit: Cory Zanker) Motivations, Expectations, and Perception Motivation can also affect perception. Have you ever been expecting a really important phone call and, while taking a shower, you think you hear the phone ringing, only to discover that it is not? If so, then you have experienced how motivation to detect a meaningful stimulus can shift our ability to discriminate between a true sensory stimulus and background noise. The ability to identify a stimulus when it is embedded in a distracting background is called signal detection theory. This might also explain why a mother is awakened by a quiet murmur from her baby but not by other sounds that occur while she is asleep. Signal detection theory has practical applications, such as increasing air traffic controller accuracy. Controllers need to be able to detect planes among many signals (blips) that appear on the radar screen and follow those planes as they move through the sky. In fact, the original work of the researcher who developed signal detection theory was focused on improving the sensitivity of air traffic controllers to plane blips (Swets, 1964). Our perceptions can also be affected by our beliefs, values, prejudices, expectations, and life experiences. As you will see later in this module, individuals who are deprived of the experience of binocular vision during critical periods of development have trouble perceiving depth (Fawcett, Wang, & Birch, 2005). The shared experiences of people within a given cultural context can have pronounced effects on perception. For example, Marshall Segall, Donald Campbell, and Melville Herskovits (1963) published the results of a multinational study in which they demonstrated that individuals from Western cultures were more prone to experience certain types of visual illusions than individuals from non-Western cultures, and vice versa. One such illusion that Westerners were more likely to experience was the Müller-Lyer illusion (Figure 5): The lines appear to be different lengths, but they are actually the same length.

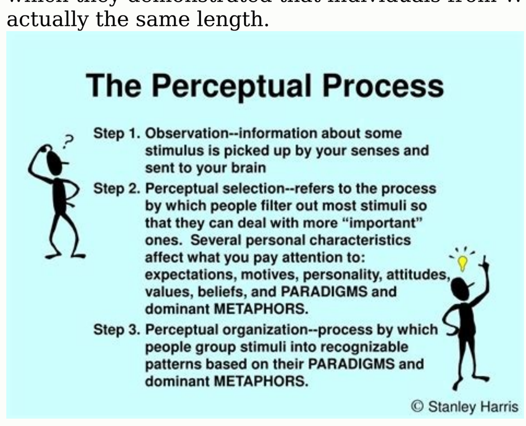
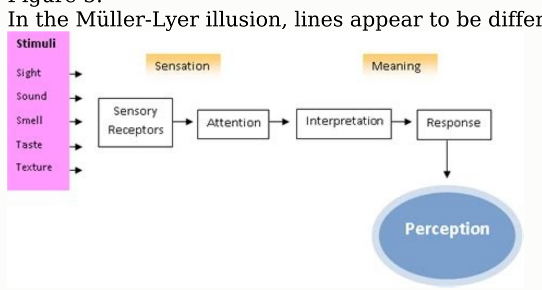
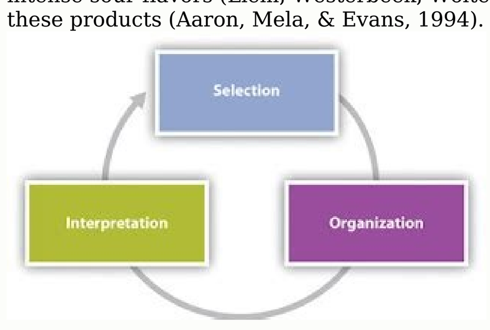


Figure 5.
In the Müller-Lyer illusion, lines appear to be different lengths although they are identical. (a) Arrows at the ends of lines may make the line on the right appear longer, although the lines are the same length.



(b) When applied to a three-dimensional image, the line on the right again may appear longer although both black lines are the same length. These perceptual differences were consistent with differences in the types of environmental features experienced on a regular basis by people in a given cultural context. People in Western cultures, for example, have a perceptual context of buildings with straight lines, what Segall’s study called a carpentered world (Segall et al., 1966). In contrast, people from certain non-Western cultures with an uncarpentered view, such as the Zulu of South Africa, whose villages are made up of round huts arranged in circles, are less susceptible to this illusion (Segall et al., 1999). It is not just vision that is affected by cultural factors. Indeed, research has demonstrated that the ability to identify an odor, and rate its pleasantness and its intensity, varies cross-culturally (Ayabe-Kanamura, Saito, Distel, Martínez-Gómez, & Hudson, 1998). Children described as thrill seekers are more likely to show taste preferences for intense sour flavors (Liem, Westerbeek, Wolterink, Kok, & de Graaf, 2004), which suggests that basic aspects of personality might affect perception. Furthermore, individuals who hold positive attitudes toward reduced-fat foods are more likely to rate foods labeled as reduced fat as tasting better than people who have less positive attitudes about these products (Aaron, Mela, & Evans, 1994). Review the differences between sensation and perception in this CrashCourse Psychology video: You can view the transcript for “Sensation and Perception: Crash Course Psychology #5” here (opens in new window).



Think about a time when you failed to notice something around you because your attention was focused elsewhere. If someone pointed it out, were you surprised that you hadn’t noticed it right away? Licenses and Attributions (Click to expand) CC licensed content, Original Modification, adaptation, and original content. Provided by: Lumen Learning. License: CC BY: Attribution CC licensed content, Shared previously All rights reserved content way that sensory information is interpreted and consciously experienced system in which perceptions are built from sensory input interpretation of sensations is influenced by available knowledge, experiences, and thoughts the reduction in sensitivity after prolonged exposure to a stimulus failure to notice something that is completely visible because of a lack of attention perception, in humans, the process whereby sensory stimulation is translated into organized experience. That experience, or percept, is the joint product of the stimulation and of the process itself. Relations found between various types of stimulation (e.g., light waves and sound waves) and their associated percepts suggest inferences that can be made about the properties of the perceptual process; theories of perceiving then can be developed on the basis of these inferences. Because the perceptual process is not itself public or directly observable (except to the perceiver himself, whose percepts are given directly in experience), the validity of perceptual theories can be checked only indirectly. That is, predictions derived from theory are compared with appropriate empirical data, quite often through experimental research.Historically, systematic thought about perceiving was the province of philosophy. Indeed, perceiving remains of interest to philosophers, and many issues about the process that were originally raised by philosophers are still of current concern. As a scientific enterprise, however, the investigation of perception has especially developed as part of the larger discipline of psychology.Philosophical interest in perception stems largely from questions about the sources and validity of what is called human knowledge (see epistemology). Epistemologists ask whether a real, physical world exists independently of human experience and, if so, how its properties can be learned and how the truth or accuracy of that experience can be determined.
They also ask whether there are innate ideas or whether all experience originates through contact with the physical world, mediated by the sense organs.
For the most part, psychology bypasses such questions in favour of problems that can be handled by its special methods. The remnants of such philosophical questions, however, do remain; researchers are still concerned, for example, with the relative contributions of innate and learned factors to the perceptual process.Such fundamental philosophical assertions as the existence of a physical world, however, are taken for granted among most of those who study perception from a scientific perspective. Typically, researchers in perception simply accept the apparent physical world particularly as it is described in those branches of physics concerned with electromagnetic energy, optics, and mechanics. The problems they consider relate to the process whereby percepts are formed from the interaction of physical energy (for example, light) with the perceiving organism. Of further interest is the degree of correspondence between percepts and the physical objects to which they ordinarily relate. How accurately, for example, does the visually perceived size of an object match its physical size as measured (e.g., with a yardstick)?Questions of the latter sort imply that perceptual experiences typically have external referents and that they are meaningfully organized, most often as objects. Meaningful objects, such as trees, faces, books, tables, and dogs, are normally seen rather than separately perceived as the dots, lines, colours, and other elements of which they are composed. In the language of Gestalt psychologists, immediate human experience is of organized wholes (Gestalten), not of collections of elements.A major goal of Gestalt theory in the 20th century was to specify the brain processes that might account for the organization of perception. Gestalt theorists, chief among them the German-U.S. psychologist and philosopher, the founder of Gestalt theory, Max Wertheimer and the German-U.S. psychologists Kurt Koffka and Wolfgang Köhler, rejected the earlier assumption that perceptual organization was the product of learned relationships (associations), the constituent elements of which were called simple sensations. Although Gestaltists agreed that simple sensations logically could be understood to comprise organized percepts, they argued that percepts themselves were basic to experience. One does not perceive so many discrete dots (as simple sensations), for example; the percept is that of a dotted line. Get a Britannica Premium subscription and gain access to exclusive content. Subscribe Now Without denying that learning can play some role in perception, many theorists took the position that perceptual organization reflects innate properties of the brain itself. Indeed, perception and brain functions were held by Gestaltists to be formally identical (or isomorphic), so much so that to study perception is to study the brain. Much contemporary research in perception is directed toward inferring specific features of brain function from such behaviour as the reports (introspections) people give of their sensory experiences. More and more such inferences are gratifyingly being matched with physiological observations of the brain itself.Many investigators relied heavily on introspective reports, treating them as though they were objective descriptions of public events. Serious doubts were raised in the 1920s about this use of introspection by the U.S. psychologist John B. Watson and others, who argued that it yielded only subjective accounts and that percepts are inevitably private experiences and lack the objectivity commonly required of scientific disciplines. In response to objections about subjectivism, there arose an approach known as behaviourism that restricts its data to objective descriptions or measurements of the overt behaviour of organisms other than the experimenter himself. Verbal reports are not excluded from consideration as long as they are treated strictly as public (objective) behaviour and are not interpreted as literal, reliable descriptions of the speaker’s private (subjective, introspective) experience. The behaviouristic approach does not rule out the scientific investigation of perception; instead, it modestly relegates perceptual events to the status of inferences. Percepts of others manifestly cannot be observed, though their properties can be inferred from observable behaviour (verbal and nonverbal).One legacy of behaviourism in contemporary research on perception is a heavy reliance on very simple responses (often nonverbal), such as the pressing of a button or a lever. One advantage of this Spartan approach is that it can be applied to organisms other than man and to human infants (who also cannot give verbal reports). This restriction does not, however, cut off the researcher from the rich supply of hypotheses about perception that derive from his own introspections. Behaviourism does not proscribe sources of hypotheses; it simply specifies that only objective data are to be used in testing those hypotheses.Behaviouristic methods for studying perception are apt to call minimally on the complex, subjective, so-called higher mental processes that seem characteristic of adult human beings; they thus tend to dehumanize perceptual theory and research.
Thus, when attention is limited to objective stimuli and responses, parallels can readily be drawn between perceiving (by living organisms) and information processing (by such devices as electronic computers). Indeed, it is from this information-processing approach that some of the more intriguing theoretical contributions (e.g., abstract models of perception) are currently being made. It is expected that such practical applications as the development of artificial “eyes” for the blind may emerge from these man–machine analogies.
Computer-based machines that can discriminate among visual patterns already have been constructed, such as those that “read” the code numbers on bank checks.