



General Concept Of Sensation. Types Of Sensation And Its Laws

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Annotation: Sensation is a process that plays an important role in human life. In every person's cognitive process, sensations have a significant function. This article analyzes the scientific and psychological basis of the concept of sensation, its role and importance in human cognition. It provides detailed information about the main types of sensation – vision, hearing, smell, taste, and touch. Each type of sensation is studied separately, explaining how they are perceived through sensory organs, the role of analyzers, and the laws involved in the sensation process. In addition, the article focuses on the differences between sensation and perception, as well as psychological phenomena such as sensitivity, adaptation, and sensory thresholds.

Keywords: Sensation, analyzer, vision, hearing, smell, skin sensation, adaptation, and laws of sensation.

Introduction. The objects and phenomena that surround us and affect us have various properties. These properties are directly reflected in our minds with the help of the organs of vision, hearing, touch, and similar sensory organs. The direct reflection of certain properties of objects that affect our sensory organs in our brain in this way is called perception. We perceive the colors red, green, sweet, bitter tastes, heavy and light, hot and cold, and so on. Every object (or phenomenon) that affects a sensory organ and causes a sensation is called a stimulus, and its effect is called a stimulus. According to the data, sensations reflect a true image of material existence, reality, and therefore, they reflect the appearance, shape, and properties of the material world as it is, unchanged. In psychology, the physiological basis and mechanisms of sensations are formed by the nervous process, its system, and structure, which arise as a result of the action of analyzers that are absolutely appropriate to the stimulus itself.



Main part. According to the teachings of physiologists and psychologists, the analyzer consists of three components that are in harmony with each other.

According to the latest achievements and terminology of world psychology, sensations are classified as follows (the first version of this classification belongs to the English scientist C. Sherrington):

1) sensations that are adapted to reflect the properties of objects and phenomena in the external environment and have receptors located on the outside of the body, i.e. exteroceptive sensations (receptors);

2) sensations that reflect the state of internal organs and have receptors located in internal organs and tissues, i.e. interoceptive sensations;

3) sensations that provide information about the state and movements of our body and our body, located in muscles, ligaments, tendons, muscles, i.e. proprioceptive sensations.

There are many different types of senses. Depending on the sense organs with which we create different types of sensations, they are usually divided into the following types: visual, auditory, olfactory, gustatory, cutaneous, muscular-motor, and organic.

Visual Senses—The perception of color and light is part of the visual sense. The colors we perceive are divided into chromatic and achromatic colors. The colors formed when light rays pass through a triangular glass prism and are refracted are called chromatic colors. Chromatic colors are the colors of the rainbow, which include red, orange, yellow, green, indigo, blue, and violet. The types of these colors are extremely diverse and numerous. White and black, as well as all the various shades of gray, are called achromatic colors. The organ of visual sense is the eye. This organ consists of the eyeball and the optic nerve that emerges from it. The eyeball has three layers, namely: the outer, the choroid, and the retina. The opaque (white) part of the outer layer is called the sclera (hard or tough layer). The slightly convex anterior part of the outer membrane is called the clear (corneal) membrane.

The sense of hearing consists of perceiving sounds. Sounds are divided into musical sounds (the sound of singing, the sound of musical instruments) and noisy sounds (taraq-turuk, tars-turs, sharak-shuruk, taqir-tukur and other similar sounds). Sounds are also divided into simple and complex sounds. Simple sounds are called tones (or microsounds), for example, when we sound a tuning fork, we perceive a tone. Melodious sounds are complex sounds, which consist of several tones. One of these tones is the fundamental tone, which determines



the pitch and strength of the sound, while the others are sounds that are added together and are called overtones. Overtones determine the uniqueness of sounds of the same pitch produced by different instruments, for example, a piano, a violin, a guitar. This distinctiveness of sounds is called timbre. Speech sounds consist of tonal sounds (mainly vowels) and noises (with a higher proportion of consonants in noises). The organ of hearing is the ear, which consists of three parts: the outer ear, the middle ear, and the inner ear.

The sense of smell includes the perception of smells. Smells are extremely numerous and diverse. There is no common criterion for classifying smells. Smells are usually named after the things they smell, for example, the smell of basil, the smell of bread, the smell of apples, etc. Smells are usually divided into pleasant and unpleasant, but this division does not indicate the essence of smells, but rather how we perceive them. The organ of the sense of smell is the upper part of the nasal cavity, where there are olfactory cells and branches of the sensory nerve, the branches of the sensory nerve "are embedded in the mucous membrane of the olfactory area. Odorous substances excite the sensory nerve, this excitation is transmitted to the brain, as a result of which we perceive various smells. It is assumed that the center of smell is located in the lower part of the posterior surface of the cerebral hemispheres. Odorous substances affect the olfactory cells only in a gaseous state and stimulate them through a chemical reaction. As is known, all odorous substances evaporate and dissolve. Gaseous substances enter the nasal cavity with inhaled air.

Taste sensations include sweet-bitter, sour-sweet. In addition to these basic taste sensations, there are many and diverse taste sensations that do not have a general classification. Like the sense of smell, taste sensations are also named after specific tasty objects or substances. For example, we call them the taste of milk, the taste of butter, the taste of meat, the taste of bread, etc. The organ of taste sensations is the surface of the tongue and the soft part of the palate. There are special taste buds on the mucous membrane of the tongue. Taste sensations are formed due to the chemical properties of the substance. Taste buds are stimulated only by substances dissolved in liquid water or solids (for example, the sweet taste becomes noticeable only when sugar begins to dissolve). The senses of smell and taste are closely related. Both the senses of smell and taste are produced as a result of the action of chemical substances on the sensory receptors. However, in order to produce taste buds, the taste must be tasted directly, while the smell of odorous objects can be felt from a distance.



Skin sensations include the sensations of touch and temperature, which are called cutaneous sensations because their peripheral nerve apparatus (receptors) are located in the skin and the outer mucous membranes of our body. Sensations are the sensations of touch, spread, or sensory corpuscles. Tactile sensations are also the sensations of smoothness or roughness. The sensation of touching something turns into a feeling of tightness when the external influence (stimulation) increases. When the stimulation increases further, the tightness can turn into a feeling of pain. However, not every sensation felt on the skin is due to an external stimulus acting on the skin, of course.

Results and discussion: The adaptation of the sensory organs to stimuli acting on them, their habituation, is called adaptation. As the effect of the stimulus changes, sensitivity also changes. When the stimuli have a weak effect, sensitivity increases, and when they have a strong effect, sensitivity decreases. Therefore, positive and negative adaptation are distinguished. Adaptation is especially evident in visual sensations, especially when entering a bright place into a dark place and vice versa - when leaving a dark place into a light place. For example, when we enter a building higher than a bright place, we initially see nothing. It takes some time for our visual organs to adapt to weak light. This is dark adaptation. According to data obtained from experimental studies, sensitivity to light in the dark increases 200 thousand times (within one hour) compared to sensitivity in a bright place. Even when you go from darkness to light, it takes some time (about 4 to 5 minutes) for your eyes to adjust to the light again. This is called light adaptation.

Life satisfaction is a key component of subjective well-being and is influenced by a variety of factors, including personal accomplishments, relationships, and socioeconomic status (Yang et al., 2024). Being resilient means being able to overcome life's challenges, stresses, and difficulties and still do well. It means bouncing back from setbacks, keeping your mind steady, and continuing to work toward your goals even when things get tough. Resilience is not a fixed trait, but a dynamic process that can be developed and strengthened through experience and supportive relationships.

Laws of perception—Senses are a cognitive process that is considered one of the forms of reflection of stimuli that are adequately suited to them. The adequate stimulus of the sense of sight is electromagnetic radiation in the air wavelength range from 380 to 770 millimicrons. This electromagnetic radiation



is converted into a nervous process in the visual analyzers that creates the sensation of vision. The sense of hearing is the reflection of the effect of sound waves with a vibration frequency of 16 to 20,000 on the receptors. Tactile sensations are formed as a result of the effect of mechanical stimuli on the skin surface. The sensation of vibration reflection, which is of particular importance for the deaf, occurs through the reflection of vibrations of objects. Other types of sensations also have their own special stimuli. But the various manifestations of sensations are characterized not only by their specificity, but also by their general properties. These properties of sensations also include the qualities of sensation, intensity, duration, and spatial localization. Quality is the main feature of this sensation, which distinguishes it from other types of sensations and changes the boundaries of the type of sensation. For example, auditory sensations are distinguished by the pitch, timbre, and hardness of sound, while visual sensations are distinguished by the density, brightness, luster, tone, and so on of colors. The qualitative diversity of sensations is a reflection of the diversity of forms of the movement of matter. The intensity of sensations consists of their quantitative description, which is determined by the strength of the acting stimulus and the functional state of the receptor.

Russian scientist I.P. Ivanov describes the difference between sensation and perception as follows: Sensation is a direct and simple reflection of individual properties of the external environment (for example, color, sound, smell, taste, temperature, etc.) in the mind. That is, through sensation, a person perceives the individual qualities of surrounding objects. Perception is the process of understanding the entire object or phenomenon as a whole, reflecting it in the mind, based on these sensations. Ivanov noted that in perception, several types of sensations are combined (for example, color, shape, movement, sound), and they are generalized in the activity of the brain, forming a complete image of the object.

Thus, according to Ivanov: Intuition is the process of analysis, that is, the separation of individual properties, while perception is the process of synthesis, that is, the combination of these properties into a single image of an object.

Conclusion. In conclusion, it should be said that intuition is the most important stage of the cognitive process, ensuring the connection of a person with the environment. Through intuition, a person receives information from the external and internal environment, perceives them and acts accordingly. The article provides a detailed description of the main types of sensations, such as



vision, hearing, smell, taste and touch, their physiological and psychological foundations, as well as the role of analyzers. Information about the laws of sensations, adaptation, acuity and limits of sensations is important for a deep understanding of the human psyche. Understanding the difference between intuition and perception serves to organize cognitive processes more effectively. Therefore, sensations play a fundamental role in the formation of human thinking and consciousness.

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