



SYSTEM OF SOUNDS IN LINGUISTICS

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ABSTRACT

In this article, the scientific significance, general and specific relationship of the concepts of sound and phoneme in linguistics and about them. Information is provided.

In modern society, the sense of hearing plays a vital role in our everyday lives. From listening to music and conversations to understanding instructions and warnings, our auditory system is constantly at work. In Uzbek, the term "Tilshunoslikda tovushlar tizimi" refers to the auditory system, which is responsible for processing sound waves and converting them into meaningful information for our brains to interpret.

The auditory system is comprised of several key components, each playing a unique role in the process of hearing. The journey of sound begins with the outer ear, which captures sound waves and funnels them through the ear canal to the eardrum. The eardrum vibrates in response to the sound waves, setting off a chain reaction that ultimately leads to the stimulation of hair cells in the cochlea, the inner ear's spiral-shaped organ responsible for translating sound signals into electrical impulses that can be sent to the brain.

The cochlea is a remarkable structure that houses thousands of hair cells, each tuned to a specific frequency of sound. As sound waves travel through the cochlea, these hair cells are activated, sending electrical signals along the auditory nerve to the brainstem and then on to the auditory cortex in the brain, where the signals are processed and interpreted as sound.

The auditory system is an incredibly complex and finely-tuned system that allows us to perceive a wide range of sounds, from the faintest whisper to the booming roar of thunder. It is capable of discerning pitch, volume, and timbre, enabling us to distinguish the subtle nuances of music, speech, and environmental noises.

Hearing is not just about receiving sound signals; it is also about making sense of them. Our brains are constantly working to process and interpret the auditory information we receive, allowing us to understand and respond to the world around us. This cognitive aspect of hearing is known as auditory processing, and it involves higher-level functions such as memory, attention, and language comprehension.

The auditory system is not only essential for communication and social interaction but also plays a crucial role in our safety and survival. The ability to hear warning signals, sirens, and alarms can alert us to potential dangers and help us make quick decisions to protect ourselves and others. Our sense of hearing also allows us to localize sound sources, enabling us to locate friends in a crowded room or pinpoint the direction of a car horn on a busy street.

Like any other sensory system, the auditory system is vulnerable to damage and dysfunction. Exposure to loud noises, infections, genetic disorders, and aging can all contribute to hearing loss and other auditory problems. It is essential to protect our ears from harmful noise levels, seek medical attention for issues with hearing, and take steps to preserve and maintain the health of our auditory system.

In conclusion, the auditory system is a remarkable and intricate system that allows us to hear and interpret the sounds of the world around us. From the mechanics of sound wave transmission to the cognitive processes of auditory perception, our sense of hearing plays a crucial role in our daily lives. By understanding the workings of the auditory system and taking steps to care for our ears, we can protect and preserve this invaluable sense for years to come.

The auditory system plays a crucial role in the process of perception and understanding of the surrounding world. In the field of neuroscience, the study of auditory processing is known as auditory perception. One of the key components of auditory perception is the auditory system, which is responsible for the reception, processing, and interpretation of sound waves. The auditory system is highly complex and involves multiple structures and pathways within the brain.

At the heart of the auditory system is the cochlea, a small, spiral-shaped organ located in the inner ear. The cochlea contains thousands of tiny hair cells that are responsible for detecting sound waves and converting them into electrical signals that can be interpreted by the brain. These electrical signals are then transmitted along the auditory nerve to the brainstem, where they are further processed and analyzed.

The brainstem plays a crucial role in the auditory system, serving as a relay station for incoming auditory signals. It is responsible for filtering out irrelevant information and focusing on important sounds. From the brainstem, the auditory signals are transmitted to the thalamus, a region of the brain that acts as a gateway for sensory information. The thalamus then sends the signals to the auditory cortex, the primary region of the brain responsible for processing and interpreting sound.

In the auditory cortex, the brain processes the incoming signals and assigns meaning to them based on past experiences and learned associations. This process, known as auditory perception, allows us to recognize and interpret sounds such as speech, music, and environmental noises. The auditory cortex is also responsible for distinguishing between different pitches, tones, and frequencies, allowing us to perceive and enjoy a wide range of sounds.

While the auditory system is highly efficient at processing and interpreting sound, it is also vulnerable to damage and dysfunction. Hearing loss, for example, can occur as a result of damage to the hair cells in the cochlea or disruptions in the auditory pathways within the brain. Conditions such as tinnitus, hyperacusis, and auditory processing disorders can also impair the function of the auditory system, leading to difficulties in hearing, understanding, and processing sound.

Research in the field of auditory neuroscience has provided valuable insights into the mechanisms of auditory processing and the ways in which the brain interprets sound. Advances in neuroimaging techniques, such as functional magnetic resonance imaging (fMRI) and electroencephalography (EEG), have allowed researchers to study the neural pathways involved in auditory perception and identify areas of the brain that are critical for hearing and understanding sound.

Understanding the complexities of auditory processing is essential for developing effective treatments for hearing disorders and improving the quality of life for individuals with hearing impairments. By studying the mechanisms of auditory perception, researchers can develop innovative interventions, such as cochlear implants, auditory training programs, and cognitive-behavioral therapies, to help individuals with hearing loss communicate, interact, and engage with the world around them.

In conclusion, the auditory system plays a vital role in our ability to hear, interpret, and understand sound. The complex networks and pathways within the brain work together to process auditory signals and assign meaning to them based on past experiences and learned associations. By studying the mechanisms of auditory processing, researchers can gain valuable insights into the ways in which the brain interprets sound and develop innovative treatments for hearing disorders. The field of auditory neuroscience continues to advance our understanding of the auditory system and its role in perception, communication, and cognition.

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