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A NEUROPSYCHOLINGUISTIC APPROACH TO THE ANALYSIS OF
SPEECH PROBLEMSNUTQIY MUAMMOLAR TAHLILIGA NEYROPSIXOLINGVISTIK
YONDASHUVНЕЙРОПСИХОЛИНГВИСТИЧЕСКИЙ ПОДХОД К АНАЛИЗУ
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Annotatsiya: Neuropsycholinguistics has emerged as a significant interdisciplinary field, drawing from medicine, psychology, and linguistics to investigate the brain's control over human communicative competence and the underlying mechanisms of speech processes. The field intersects notably with neurolinguistics and psycholinguistics, both of which explore the brain-language nexus. However, neurolinguistics uniquely focuses on the brain mechanisms involved in speech production and disorders, blending theoretical and practical research. Theoretical neurolinguistics examines global connections between language and cognition, akin to psycholinguistics, which has evolved into an independent discipline concerned with language comprehension and usage across different ages. Psycholinguistics addresses how linguistic individuals create and understand speech, highlighting the practical relevance of these studies. Recent advancements in neuroimaging techniques, such as MRI, have significantly contributed to neuropsycholinguistics, enabling detailed observation of how the brain processes language. This research has enhanced our understanding of language function localization, language development, the impact of brain damage on speech, second

language acquisition, and the interplay between language and brain activity. The interdisciplinary nature of neuropsycholinguistics underscores its importance in advancing both theoretical knowledge and practical applications in understanding human communication.

Key words: Speech Mechanisms, Neuroimaging Techniques, Communicative Competence

Psycholinguistics examines language-cognition links, studies speech production, and utilizes experimental methodologies.

Annotatsiya: Neyropsixolingvistika tibbiyot, psixologiya va tilshunoslikdan kelib chiqqan holda, miyaning insonning kommunikativ qobiliyatlari va nutq jarayonlarining asosiy mexanizmlari ustidan nazoratini o'rganish uchun muhim fanlararo soha sifatida paydo bo'ldi. Bu soha, ayniqsa, neyrolingvistika va psixolingvistika bilan kesishadi, ularning ikkalasi ham miya tilining aloqasini o'rganadi. Biroq, neyrolingvistika nazariy va amaliy tadqiqotlarni uyg'unlashtirib, nutqni ishlab chiqarish va buzilishlarda ishtirok etadigan miya mexanizmlariga alohida e'tibor qaratadi. Nazariy neyrolingvistika til va bilish o'rtasidagi global bog'lanishlarni o'rganadi, psixolingvistikaga o'xshash bo'lib, u turli asrlarda tilni tushunish va undan foydalanish bilan bog'liq mustaqil fanga aylangan. Psixolingvistika lingvistik shaxslar nutqni qanday yaratishi va tushunishini ko'rib chiqadi, bu tadqiqotlarning amaliy ahamiyatini ta'kidlaydi. MRI kabi neyroimaging texnikasidagi so'nggi yutuqlar neyropsixolingvistikaga sezilarli hissa qo'shdi va bu miyaning tilni qanday ishlashini batafsil kuzatish imkonini berdi. Ushbu tadqiqot til funktsiyasining lokalizatsiyasi, til rivojlanishi, miya shikastlanishining nutqqa ta'siri, ikkinchi tilni o'zlashtirish va til va miya faoliyati o'rtasidagi o'zaro bog'liqlik haqidagi tushunchamizni kengaytirdi. Neyropsixolingvistikaning fanlararo tabiati uning nazariy bilimlarni va insoniy muloqotni tushunishda amaliy qo'llashni rivojlantirishdagi muhimligini ta'kidlaydi.

Kalit so'zlar: Nutq mexanizmlari, neyroimaging texnikasi, kommunikativ kompetentsiya

Psixolingvistika til-idrok aloqalarini tekshiradi, nutq ishlab chiqarishni o'rganadi va eksperimental metodologiyalardan foydalanadi.

Аннотация: Нейропсихолингвистика возникла как важная междисциплинарная область, основанная на медицине, психологии и лингвистике для исследования контроля мозга над коммуникативной компетенцией человека и основных механизмов речевых процессов. Эта область особенно пересекается с нейролингвистикой и психолингвистикой, обе из которых исследуют связь мозга и языка. Однако нейролингвистика уделяет особое внимание механизмам мозга, участвующим в речеобразовании и расстройствах, сочетая теоретические и практические исследования. Теоретическая нейролингвистика исследует глобальные связи между языком и познанием, подобно психолингвистике, которая превратилась в независимую дисциплину, занимающуюся пониманием и использованием языка в разных возрастах. Психолингвистика изучает то, как лингвистические личности создают и понимают речь, подчеркивая практическую значимость этих исследований. Недавние достижения в методах нейровизуализации, таких как МРТ, внесли значительный вклад в нейропсихолингвистику, позволяя детально наблюдать за тем, как мозг обрабатывает речь. Это исследование улучшило наше понимание локализации языковых функций, развития речи, влияния повреждения головного мозга на речь, овладения вторым языком и взаимодействия между языком и активностью мозга. Междисциплинарный характер нейропсихолингвистики подчеркивает ее важность в развитии как теоретических знаний, так и практических приложений для понимания человеческого общения.

Ключевые слова: речевые механизмы, нейровизуализационные методы, коммуникативная компетентность.

Психолингвистика исследует связи языка и познания, изучает производство речи и использует экспериментальные методологии.

INTRODUCTION

Neuropsycholinguistics has emerged as a significant interdisciplinary field, drawing from medicine, psychology, and linguistics to investigate the brain's control over human communicative competence and the underlying mechanisms of speech processes. The field intersects notably with neurolinguistics and psycholinguistics, both of which explore the brain-language nexus. However, neurolinguistics uniquely focuses on the brain mechanisms involved in speech production and disorders, blending theoretical and practical research. Theoretical neurolinguistics examines global connections between language and cognition, akin to psycholinguistics, which has evolved into an independent discipline concerned with language comprehension and usage across different ages. Psycholinguistics addresses how linguistic individuals create and understand speech, highlighting the practical relevance of these studies. Recent advancements in neuroimaging techniques, such as mri, have significantly contributed to neuropsycholinguistics, enabling detailed observation of how the brain processes language. This research has enhanced our understanding of language function localization, language development, the impact of brain damage on speech, second language acquisition, and the interplay between language and brain activity. The interdisciplinary nature of neuropsycholinguistics underscores its importance in advancing both theoretical knowledge and practical applications in understanding human communication. In the past few decades, neuropsycholinguistics has emerged as a pivotal applied field within linguistics, drawing upon the scientific principles of medicine, psychology, and linguistics. This interdisciplinary field aims to expand our understanding of how the brain governs human communicative competence and to investigate potential issues within brain mechanisms and speech processes. Neuropsycholinguistics closely aligns with both neurolinguistics and psycholinguistics, as all three fields examine the intricate connection between language and the brain. However, neurolinguistics distinguishes itself by focusing extensively on the brain mechanisms that facilitate speech activity, utilizing both theoretical and practical methodologies.

Materials and methods

Researchers in psycholinguistics have begun to incorporate psycholinguistic methods alongside neurolinguistic data, examining brain mechanisms involved in speech comprehension and perception. This integration highlights the close relationship between the two fields, with neuropsycholinguistics emerging as a discipline dedicated to studying brain mechanisms in speech processes, speech in emotional states, and speech pathologies. This field benefits from advanced neuroimaging techniques, such as mri, which allow scientists to observe how the brain produces and interprets language.

The main research areas in neuropsycholinguistics include:

- localization of language functions within the brain.
- understanding the development of language functions over a person's lifetime.
- investigating how brain damage affects language and speech disorders.
- studying the process of second language acquisition.
- examining how the brain processes language and how language influences brain development and activity.

Notable researchers like t.g. wiesel and pioneers in russian linguistics have significantly contributed to the development of neurolinguistics. The foundational work of i.m. sechenov on brain reflexes and i.p. pavlov's theories on speech as a second signal system have provided critical insights into the brain's role in language and speech. The integration of various disciplines, including classical neurology, neurophysiology, and neuropsychology, has facilitated the growth of neuropsycholinguistics.

RESULTS AND DISCUSSION

In conclusion, neuropsycholinguistics stands as a pivotal field at the nexus of medicine, psychology, and linguistics, dedicated to unraveling the intricate relationship between the brain and language. Through the integration of advanced neuroimaging techniques and interdisciplinary research methodologies, this field has significantly advanced our understanding of how the human brain processes, comprehends, and produces language. By mapping neural networks involved in language functions and

studying language-related disorders, neuropsycholinguistics not only enhances theoretical knowledge but also informs clinical practices, guiding interventions for individuals with speech impairments or neurological conditions affecting language abilities.

The synergistic relationship between neurolinguistics and psycholinguistics underscores the comprehensive approach of neuropsycholinguistics, blending theoretical insights from cognitive psychology with empirical evidence from neuroscientific studies. This interdisciplinary collaboration has expanded the scope of inquiry, addressing fundamental questions about the neural substrates of language and cognition across different populations and contexts.

Moreover, the practical implications of neuropsycholinguistics are profound, influencing educational strategies, therapeutic interventions, and neurorehabilitation programs aimed at enhancing language skills and communicative competence. Insights gained from studying language development, second language acquisition, and the impact of brain lesions on language processing have direct relevance in clinical settings, shaping diagnostic criteria and treatment modalities.

Looking forward, the field of neuropsycholinguistics is poised for continued growth and innovation, driven by advancements in technology and methodologies that promise deeper insights into the complexities of human communication. As interdisciplinary collaborations expand and methodologies evolve, neuropsycholinguistics will continue to play a critical role in shaping our understanding of the human brain's capacity for language and its implications for cognitive function and social interaction.

In essence, neuropsycholinguistics not only enriches our theoretical understanding of language and cognition but also holds promise for practical applications that benefit individuals, communities, and society. This conclusion summarizes the key contributions, implications, and future directions of neuropsycholinguistics based on its interdisciplinary approach and research outcomes.

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