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SPEECH – A PSYCHOPHYSIOLOGICAL AND INTELLECTUAL PHENOMENON

Abstract. This article analyzes psychophysiological and intellectual speech aspects emphasizing its complex nature, and also a key role in a human being. Speech is presented not only as means of information transmission, but also, as a dynamic phenomenon deeply rooted in different processes as cognitive, emotional, and social. The authors research how speech functions as a link between individual mechanisms and social context, showing the important role in communication and personal identity.

Special attention is given to the neurophysiological basis, including the brain structures and the other processes which are responsible for language perception and speech articulation. Based on current research in such disciplines as neuroscience, psychology, and linguistics, the authors indicate that speech brain activity reflects a wide range of higher cognitive abilities like reasoning, decision-making, and emotional regulation.

In addition, the role of speech in intellectual development is tested: how it contributes to learning, abstract concepts formation and critical thinking ability. The relationship between language and thinking is analyzed from psychological and philosophical points of view, and the thesis is put forward that language not only expresses ideas, but also shapes the perception of reality.

The social and cultural aspects of speech are also being researched, including its importance for self-expression, interpersonal communication, and the transmission of collective knowledge, and cultural values. The article offers new scientific approaches for understanding the speech nature, and emphasizes its integrative role, uniting biological, mental, and social aspects of human existence, as well as its importance as a driving force in the civilization development.

Keywords: speech, psychophysiology, intelligence, cognitive process, social interaction, emotion, language nature.

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(Қазақстан, Алматы қ.), e-mail: alkebaeva@mail.ru***Сөз – психофизиологиялық және интеллектуалды құбылыс**

Аңдатпа. Бұл мақалада сөйлеудің психофизиологиялық және интеллектуалдық қырлары қарастырылады, сонымен қатар оның күрделі табиғаты мен адам өміріндегі маңызды рөлі атап өтіледі. Сөйлеу тек ақпарат жеткізу құралы ретінде ғана емес, сондай-ақ когнитивтік, эмоциялық және әлеуметтік процестерге терең тамыр жайған динамикалық құбылыс ретінде ұсынылады. Авторлар сөйлеудің жеке тұлғаның ойлау механизмдері мен кең әлеуметтік орта арасындағы дәнекер рөлін қалай атқаратынын зерттейді, ол қарым-қатынас пен жеке тұлғалық болмысты қалыптастыруда маңызды орын алады.

Мақалада сөйлеудің нейрофизиологиялық негіздеріне ерекше назар аударылған, атап айтқанда, тілдік қабылдау, артикуляция және түсінуге жауапты ми құрылымдары мен процестері қарастырылады. Жаңа нейроғылым, психология және лингвистика салаларындағы зерттеулерге сүйене отырып, авторлар сөйлеуге қатысты ми белсенділігі ойлау, шешім қабылдау және эмоциялық реттеу сияқты жоғары деңгейдегі когнитивтік функцияларды бейнелейтінін көрсетеді.

Сондай-ақ, сөйлеудің зияткерлік дамудағы рөлі талданады: оқуға, абстрактілі ұғымдарды қалыптастыруға және сыни ойлауға қалай ықпал ететіні қарастырылады. Тіл мен ой арасындағы күрделі байланыс психологиялық және философиялық тұрғыдан сараланып, тіл тек ойды жеткізетін құрал ғана емес, сонымен қатар шындықты қабылдау тәсілін қалыптастыратыны зерделенеді.

Мақалада сөйлеудің әлеуметтік және мәдени маңызы да қарастырылып, оның тұлғааралық қарым-қатынас және ортақ білім мен мәдени құндылықтарды жеткізудегі рөлі сипатталады.

Мақалада сөйлеудің табиғаты туралы жаңа ғылыми көзқарастар ұсынылып, оның биологиялық, психологиялық және әлеуметтік қырларын біріктіретін тұтас күш ретінде әрекет ететіні және адамзат өркениетінің дамуына ықпал ететін іргелі фактор екені айқындалады.

Кілт сөздер: сөз, психофизиология, интеллект, когнитивті процесс, әлеуметтік қарым-қатынас, эмоция, тілдің табиғаты.

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(Казахстан, г. Алматы), e-mail: alkebaeva@mail.ru***Речь – психофизиологическое и интеллектуальное явление**

Аннотация. В данной статье рассматриваются психофизиологические и интеллектуальные аспекты речи, подчёркивается её сложная природа и ключевая роль в существовании человека. Речь представляется не только средством передачи информации, но и динамичным феноменом, глубоко укоренённым в когнитивных, эмоциональных и

социальных процессах. Авторы исследуют, как речь функционирует как связующее звено между индивидуальными мыслительными механизмами и более широким социальным контекстом, играя важную роль в коммуникации и формировании личностной идентичности.

Особое внимание уделяется нейрофизиологическим основам речи, включая структуры и процессы мозга, отвечающие за восприятие языка, речевую артикуляцию и понимание. Основываясь на современных исследованиях в области нейронауки, психологии и лингвистики, авторы показывают, что речевая активность мозга отражает широкий спектр высших когнитивных способностей, таких как рассуждение, принятие решений и эмоциональная регуляция.

Дополнительно рассматривается роль речи в интеллектуальном развитии: как она способствует обучению, формированию абстрактных понятий и способности к критическому мышлению. Взаимосвязь языка и мышления анализируется с психологической и философской точек зрения, выдвигается тезис о том, что язык не только выражает идеи, но и формирует восприятие реальности.

Также затрагиваются социальные и культурные аспекты речи, включая её значение для самовыражения, межличностной коммуникации и передачи коллективных знаний и культурных ценностей.

Статья предлагает новые научные подходы к пониманию природы речи и подчёркивает её интегративную роль, объединяющую биологические, ментальные и социальные аспекты человеческого бытия, а также её значение как движущей силы в развитии цивилизации.

Ключевые слова: речь, психофизиология, интеллект, когнитивный процесс, социальное взаимодействие, эмоции, природа языка.

Introduction

Speech represents one of the most intricate and significant aspects of human society. It serves not only as a means of communication but also as an expression of human consciousness, thought processes, and individual traits. Through speech, individuals convey emotions, share ideas, and exchange information, all of which rely on psychophysiological and intellectual mechanisms. For instance, neuro-linguistic research has explored speech abilities in individuals with aphasia - a condition caused by damage to specific brain regions. In such cases, individuals may struggle with speech motor functions (associated with Broca's area) or with comprehending speech (linked to Wernicke's area). The results underscore the direct link between language production and neural structures. Moreover, investigations in relationship between intellect and language have revealed how verbal and associative functions impact speech during tasks that demand creativity. As a result, contemporary research focuses on understanding the significance of speech in neuro-linguistic frameworks and its relevance within diverse cultural settings [1, p. 58].

Research methods and materials

In order to explore language as both a psychophysiological and cognitive phenomenon, it is crucial to utilize a broad range of research techniques. It includes neuropsychological methodologies, cognitive psychological tools, linguistic assessments and also observational strategies. This combination allows for a comprehensive study of language and mental processes.

Results and discussion

Speech represents a cognitive process through which human produce, exchange, and interpret information via language. In human society the speech fulfills different functions, such as: communication (exchanging messages, cognition), designation(giving names to things and phenomena), pointing out (indicate) and adjustment (to establish contacts, express emotions, having an effect on others). The speech appeared as a means of cooperative actions and was historically

formed during the human's material activity. It is a type of communication that is carried out through a system of signs-language, instead of natural sounds and vocalization.

From an individual-psychological point of view, speech allows you to regulate human behavior and control mental processes (intuition, memory, attention, thinking), raising them to a conscious level. And from a socio-psychological point of view, speech serves as a means of mastering cultural, and historical experience, and provide access to collective knowledge fixed in linguistic norms. Investigating the speech is the subject of research of different sciences, such as psychology, linguistics, neurophysiology and psycholinguistics. French philosopher Rene Descartes believed that animal actions are mechanical and regulated by reflexes, while human actions are determined by free will, which is expressed through reason and speech. Medieval philosopher Pierre Abelard noted that human speech is closely related to intelligence, and contributes to its development.

The central feature of humanity is intelligible speech as a process of symbolic information transmission in unity with language and culture. While animals have methods of transmitting information, such as sounds signaling danger or mating calls, their communication is limited to the present moment and is not separate from the specific situation. Human speech, on the other hand, develops in society and depends on the organic development of the brain, as well as the formation of the functional systems responsible for speech development, which is especially important in early childhood. In the field of linguistics, speech was initially viewed as a separate realization of language, with language and speech being contrasted, yet at the same time their unity was recognized. This is reflected in the thesis "speech is language in action". Later, a distinction was made between the dynamic, and static aspects of the contrast between language (linguistic competence) and speech (linguistic performance). The dynamic aspect of speech is the speech act itself, while the static aspect is the result of this act – the text studied by text linguistics. Speech act theory studies the processes of speech formation and perception, the mechanisms of speech errors, communicative situations, the conditions that influence the success of a speech act, and its relationship to pragmatic conditions. This theory was developed at the intersection of linguistics, psychology, psychophysiology, and sociology, and is considered close to psycholinguistics in post-Soviet science. The idea that "speech is a mobile language" suggests that, the development of the vocabulary, grammar, and phonetics of a language is possible only through its active use in direct communication, often in the context of joint activity. The absence of such communication leads to the extinction of a language or its stagnation at a certain level of development, as was the case with Latin and ancient Greek. Although written traces exist, the grammatical rules in these cases remain unchanged, the vocabulary does not reflect current cultural and historical changes, and the phonological structure can only be restored indirectly through comparison with related languages. Speech is therefore a process of transmitting information through language. Language, as a system of symbols, can develop, and grow only through the act of speech.

Professor K. Zubanov is an outstanding scientist who has studied many areas of linguistics. His works are of theoretical importance and form the basis of the fields of linguistics. The importance of his deep research, and valuable ideas is evident in his constant solution of theoretical issues related to modern linguistics. Among the works of K. Zubanov, his research on the history of language, specifically the history of words, deserves special attention.

The history of speech is a mirror of the history of the country. Since language is a "living" phenomenon, the Kazakh national language has not existed in its current form for centuries. Active words gradually became less and less used, and became passive, while words borrowed from the languages of neighboring people entered our language. While the meanings of some words have expanded, the horizons of others have narrowed. In this regard, R.Syzdykova says: "...the evolution of the meaning of words is not limited only to improvement and development, but also includes

such phenomena as obscuration, oblivion, transformation, expansion and contraction of meaning. She says: "...this word expresses the continuous movement of nature" [2, p. 165].

Language goes through several stages of development, which lead to changes in its structure and content. Therefore, there is reason to say that language is a social phenomenon: innovations occurring in society are primarily reflected in the language. These innovations lead to the creation of new nouns, the disappearance of active words, and sometimes to the revival of passive words.

The interaction of people also affects the language. K. Zhubanov said about this: "...since all the people of the world are Quranic, their language will also be Quranic," and noted that in order to deeply master the language, it is necessary to study the changes it has undergone during its long historical path, the stages of its emergence and development [1].

The significant diversity of speech and current problems of lexicology have been analyzed in the works of prominent speech researchers as K. Bijomart, D. Alkebayeva, and U. Nurgeldy. They believe that linguistics should be viewed from the perspective of the human factor, its system should be reformed, and its interaction with other scientific fields should be deepened. Furthermore, according to D. Alkebayeva, complex areas of word science are emerging in connection with the applied function of language, particularly word culture, linguistic-ecological education, word ecology, spiritual ecology, and other areas. Human speech is considered a living, and meaningful phenomenon and the main goal is to explain its inherent characteristics and key features. A thorough mastery of the speech culture of each representative of a people is not limited only to respect for one's own language, but also to knowledge of one's identity. In any spoken text, the structure of oral and written forms of discourse allows us to understand fully the speaker's personality, behavior, and essence, as well as their intellectual, emotional, and social characteristics. In real life, a person's speech reflects their personal qualities, education, upbringing, culture, and life principles. The culture of speech is based on a certain order and systematized linguistic norms.

The psychophysiological basis of speech includes neurophysiological processes. The psychophysiological aspects of speech are based on the structure and functions of the brain, and these processes organize human speech, ensuring its perception and interpretation. Let's analyze this in more detail:

1. Neurophysiological processes

1. Speech motor skills: Speech motor skills begin in Broca's area, which controls speech motor skills. This area determines the grammatical structure of a word and thus allows for correct sentence construction. Defects can, for example, lead to aphasia, causing speech disturbances.

2. Meaningful interpretation: Understanding the meaning of words is provided by Wernicke's area. Only if this area functions properly can we understand auditory information at the lexical and semantic levels. If Wernicke's area is damaged, words may become unintelligible and language may lose its meaning.

3. Sensory integration: The sensory system (hearing, vision, and touch) is responsible for processing information and linking it to the act of speaking. For example, language content is completed by receiving visual signals via associative brain regions.

4. Neural connections: The process of articulating and understanding language requires interaction between different brain regions. For example, the verbal and nonverbal components of language (gestures and emotions) are implemented through neural synchronization.

The emotional aspect of language is conveyed through intonation, pitch, and speech rate. Human emotions directly influence the sound parameters of language.

- The role of intonation: Different intonations can change the meaning of a word. For example, "Are you here?" is interpreted differently using a question or surprise tone.

- Voice timbre and speech rate: Emotional states (anger, joy, sadness) affect voice timbre and speech rate. Changes in timbre directly affect the listener's emotional perception [3, p. 55].

The following areas of research are relevant to understanding the psychophysiological foundations of language:

- Neurolinguistic research: Structural and functional changes in the brain during language regulation. Dictionaries are important for structuring the components of grammar and context. At the intellectual level, humans select words based on their meaning and use them in a specific situation. The theory of linguistic domains is of great importance in this sense, as the meaningful connections between words contribute to their correct understanding and use. Furthermore, psycholinguistic studies determine how the semantic structure of a word is stored in memory and how it is used effectively.

Intellectual speculation reflects an individual's creative capacity. The aesthetic and creative aspects of a word are reflected in fields such as, literature, poetry, and rhetoric. This is the associative and syntactic thinking that distinguishes humans. Similarly, neurobiological studies have revealed activity in the dopamine system in the brain during creativity, which positively influences the ability to work with words. Flexibility and the formation of ideas are of great importance in human thought. Dictionaries are important for structuring the components of grammar and context. At the intellectual level, humans select words based on their meaning and use them in a specific situation. The learning process varies depending on life experiences and personality traits.

You will then undertake various studies in the humanities and intersections (basic psychology, language studies, culture, and language). The profound interest of scholars from various fields in the phenomenon of “linguistic personality” and speech behavior is due to the so-called “linguistic turn” that occurred in the decades 2019-2040. This shift arose from certain principles of postmodern philosophy, which promoted the view of language and text as the basis of human consciousness and activity. The focus of research shifted to the linguistic nature of human consciousness and activity [4, p. 78].

For example: the tradition of genealogies and hero poems, which are often found in the oral literature of the Kazakh people, clearly demonstrate the national characteristics of the linguistic personality. Through their representation, genealogies shape life experiences, a person's place in society, and their identity. This is not only a manifestation of linguistic art, but also the foundation of knowledge and worldviews passed on from generation to generation through language. According to scholars, people shape their own lives and experiences, and tell stories about themselves in the form of texts. This story is based on the abilities and properties of the language they master. Based on these concepts, the term “linguistic identity” was coined.

“Black Words” by the Great Abay is a rare work that provides a deeper understanding of the linguistic character of the Kazakhs. His ideas and views reflect not only the richness of the language but also the cognitive and pragmatic characteristics of Kazakh society at that time.

The term “linguistic personality” was first introduced by V.V. Vinogradov and later popularized by Y.N. Karaulov, who defined it as the set of abilities and characteristics that enable an individual to create and recreate their speech works (texts) [5]. These works are:

- structurally and linguistically complex
- offer a deep and accurate representation of reality
- are aimed at achieving a specific goal.

Karaulov also proposed a three-level model of the linguistic personality:

1. Verbal-Semantic Level: This level shows how well a person has mastered everyday language.

Example in Kazakh: A person who has mastered their native language since childhood can clearly express their thoughts in everyday communication by using ancient Kazakh words and proverbs.

2. Cognitive Level: This level involves updating, and aligning socially relevant knowledge and concepts. It reflects the linguistic worldview, thesaurus, and culture of a person.

Example in Kazakh: The concept of “seven treasures” in Kazakh culture demonstrates the worldview, and culture of the people reflecting the cognitive level of the linguistic personality.

3. Pragmatic Level: This level involves identifying the goals and motives in the development of the linguistic personality.

Example in Kazakh: The oratory skills of Kazakh judges (bi) serve as a vivid example of the pragmatic level of the linguistic personality. Through their words, they resolved social conflicts, and achieved specific societal goals.

These levels allow for a deeper understanding of Kazakh spiritual heritage, the characteristics of the linguistic personality, and its national identity.

The hierarchical model of the linguistic personality reflects the generalized type of the individual. However, real linguistic personalities can vary greatly, with each one differing based on the significance of the levels within the person's structure. Thus, the linguistic personality is a multi-layered and multi-component paradigm, composed of a set of speech personas.

Example in Kazakh:

In Kazakh oratory, the words of the judges (bi) represent a clear manifestation of a speech personality. Here, the thinking peculiarities based on national culture, rhetorical techniques, and personal traits are evident. Through oratory, the judge conveyed important values to the people and was able to educate them.

Speech personality is the manifestation of the linguistic personality in specific communication situations and functions. It is at this level of the speech personality that the national-cultural and individual characteristics of the linguistic personality are revealed. Researchers suggest adding the following components to the content of the linguistic personality:

1. Value and Worldview Component

This is the system of values or life meanings embedded in the content of education.

Language shapes a person's initial and deep perspective of the world, forming the linguistic image of the world, which is foundational to national identity and the hierarchy of spiritual understanding.

Example: The concept “Hospitality is ingrained in the blood of Kazakhs” reflects the value of hierarchy in society. These values are passed down from generation to generation through linguistic communication.

2. Cultural Component

This refers to the level of mastery over culture as an effective tool of language.

Learning specific cultural facts related to a language (for example, rules of speech or silence) helps develop the skills to positively influence a communication partner and use language tools appropriately in communication.

Example: In Kazakh culture, using polite language when speaking to elders, such as addressing them with “Siz” (formal you), reflects respect and politeness in communication.

3. Personal Component

This represents each individual's unique, and deep internal characteristics. Through the linguistic personality, a person's worldview, emotions, and specific behaviors are expressed.

Example: In the works of Kazakh poets and bards, their personal views and life philosophy are clearly manifested. For example, the philosophical ideas in Abai's “The book of words” highlight his personal characteristics [6].

In the anthropocentric paradigm, the concept of “linguistic personality” and its definition were first developed, and studied in Russian linguistics, although the issue of “language and personality” – that is, the relationship between language's functions, and its existence in connection with the person using it – has always been present in linguistic studies. In European linguistics, the

formation of this theory is historically grounded in the study of the social nature of language, the interrelation of language and speech, and the relationship between individual and collective language (for example, by W. Humboldt, I.A. Baudouin de Courtenay, F. de Saussure, and others). According to V.A. Maslova, one of the first steps in this direction belongs to the German scholar J. Weisgerber. In Russian linguistics, V.V. Vinogradov suggested two main approaches to the study of the linguistic personality: analyzing it from the perspective of the author's personality and the character's personality [7, p. 68].

In the research on linguistic personality, many "competencies" are described, which show different aspects of speech behavior. These studies are carried out within the frameworks of linguistics, linguoculturology, and social sciences (Yu.N. Karaulov, G.I. Bogin, V.I. Shakhovsky, and others). However, in these studies, the psychological characteristics and content of speech competence are often not addressed. The psychological aspects of using speech tools, skills, and constructing one's discourse have not been sufficiently explored [8]. Therefore, analyzing speech competence from the perspective of narrative psychology is of great importance. Research in this area allows for the study of the narrative structure of Kazakh oral literature. For example, the speech actions of characters in epic poems reveal their personal traits and national-cultural characteristics. Scholars such as A. Abilkassimova, R. Omarova, S. Smailov, T. Sabirov, M. Kudaikulov, and S. Begalieva have worked on issues related to the organization of cognitive activity.

The study of linguistic competence, in our opinion, should begin with an analysis of the concepts developed in various scientific fields. One of the most frequently studied abilities of an individual is communicative competence, which is considered a psychological characteristic of a person. This ability is manifested in a person's capacity to engage with others, establish necessary connections, and maintain relationships.

Communicative competence is a set of knowledge, skills, and abilities that ensures the successful execution of communication processes.

Example from Kazakh culture: In Kazakh communication, the etiquette of addressing elders plays an important role. A young person addresses elders with "you" ("Ciz [Siz]") as a sign of respect, and when greeting, they say "Ассалаумағалейкүм! [Assalaumagaleykum]" ("Peace be upon you!"). This phrase is not only a greeting, but also, part of the culture of showing respect. A person with developed communicative competence understands the norms of communication and can apply them appropriately.

Thus, linguistic competence refers to a person's linguistic knowledge base, as well as their ability to understand and apply the rules of analyzing and synthesizing linguistic units. This competence involves the effective use of the language system for communication purposes.

Example from Kazakh language: The phrase "Балам, келші [Balam, kelshi]" ("Child, come here") consists of two simple words, but through them, a request, and a kind invitation are conveyed. Linguistic competence is required to use such constructions effectively, because a person must know grammatical rules, and adapt them to the context of communication.

Speech competence refers to a person's ability to plan, understand, and adapt their own and others' speech actions in accordance with communication goals, situations, and contexts.

Example: For instance, during a formal meeting, a person might begin their speech by saying, "Dear colleagues, the issue we are discussing today..." In this case, the speaker tailors their language to the formal style and adjusts it to meet the audience's expectations. Speech competence involves adapting to such situations. Linguistic and speech competencies are essential in the education system. In the standards of general education, speech competence includes the functional use of language, such as the ability to understand texts, connect information, and present it in a reasoned manner.

Example from Kazakh literature: The thoughts in Abai Qunanbaiuly's "*Qara Sozderi*" (The Book of Words) demonstrate the richness and depth of the Kazakh language. Students reading and analyzing the works of Abai, while focusing on his language, can develop their own speaking and writing abilities. G.A. Muratova, in her study of Abai's linguistic legacy, emphasizes that the classical model of a linguistic personality in Kazakh linguistics can be defined through Abai's role in Kazakh literary language. She argues that in defining the linguistic personality, one must not only recognize the individual's mastery of the national language and culture but also see the person as both a consumer and creator of language. According to G.A. Muratova, studying the linguistic personality in both its *synchronic* and *diachronic* contexts can enrich our understanding of its role in language development, thus solidifying the linguistic personality's status and revealing its full essence [9, p. 79].

In the field of speech studies, speech competence is considered as the level of mastering the basic skills and abilities of speech action in important life areas and communication genres corresponding to a specific age period. Linguists describe speech competence as the ability to create and understand various types of discourse [10]. At the same time, several researchers define speech competence as the practical application of the linguistic system, that is, the ability to convey emotions through simple language tools, as well as the capacity to communicate subtle nuances of intellectual information using the rules of language functioning [10, p. 29].

The concept of speech competence is used in a utilitarian way and is filled with content according to the specifics of different scientific fields. This concept adapts to the particular goals of each subject and has its own interpretation.

In many studies, speech competence is characterized by the following general features:

1. Knowledge of language: A collection of knowledge about the structural features of the language, its functions, laws, rules for using language units, and available linguistic tools.
2. Skills and abilities: Mastery of tools that enable the effective use of a foreign language or one's own language. These abilities include not only creating one's own texts but also understanding other texts and constructing different types of speech programs.
3. These definitions allow us to distinguish speech competence from communicative competence, as the latter includes non-linguistic tools (paralinguistics, extralinguistics). Furthermore, while speech competence encompasses linguistic competence, it is not limited to it. Just as language and speech are not identical, speech competence is not entirely defined by linguistic knowledge.

Speech competence is not only about linguistic tools and knowledge; it has a profound psychological content, which makes it worthy of special study. The psychological content of speech competence forms the basis for effectively understanding and using all linguistic and speech tools that are part of speech competence, as well as for creating various discourses. In discourse, a person engages in processes such as organizing personal experience, presenting their existence, and conveying the results of self-analysis. This term reflects an individual's ability to express themselves through discourse, to translate their experience, and to create a meaningful space [11, p. 158].

One of the key psycholinguistic components of speech competence is the motivational aspect. It is understood as the need, desire, or aspiration to express oneself. For example, a person's ability to create and convey stories about themselves is based on this component. Speech competence is a comprehensive combination of cognitive and communicative abilities. Its psychological content plays a particularly significant role in analyzing personal experience, social relationships, and forms of self-expression. In every person's life, there comes a moment when they feel the insufficiency of socially acceptable forms of communication and face the need to create deep and meaningful texts to fully realize and present themselves. In other words, when a person feels the need to tell stories about themselves and understands that they can do so (more or less effectively), this indicates a

certain level of development in their linguistic abilities, specifically the presence of the motivational component. This component makes it possible for a person to construct and transmit their life and personal experience through discourse (texts).

Several levels of the motivational component can be identified: a) a vague desire to talk about oneself, b) the need to tell one's own story, c) the aspiration to speak, d) actively seeking opportunities and circumstances to share one's story (whether orally or in writing) [12, p. 218].

Psychologically, what is important for us is the presence of a subjective desire to talk about one's life, as well as the understanding of the necessary linguistic skills and abilities to realize it. This demonstrates a more or less conscious understanding of one's linguistic competence. Secondly, the analysis of language action skills and the ability to construct a narrative is necessary. On the one hand, a person understands whether they are psychologically prepared to present their personal experience and perception of the world in a connected narrative form. On the other hand, the person understands whether they possess the skills to construct, narrate, and present the necessary content in the desired form.

These skills include a person's genetically given abilities (language aptitude, creative abilities, associative and abstract-logical thinking skills, general humanitarian intelligence, etc.) and culturally conditioned skills developed during the socialization process (social and cultural norms and rules of storytelling, features of the narrative process specific to each culture, language skills, vocabulary, etc.). Of course, the level and nature of linguistic skills and abilities are directly related to the development level of overall linguistic competence. In our opinion, when analyzing linguistic competence, the ability to connect storytelling skills and thoughts developed during the sociogenesis process and systematically convey them through linguistic tools is of particular importance.

Thirdly, it is important to focus on the linguistic tools used to convey specific content accurately and correctly in the form of a story. These are "I-narrative" tools, through which the speaker achieves their goal: precisely describing the content in their mind, structuring the story according to its genre and structure, influencing both the listener and the speaker, and eliciting emotional and cognitive reactions from the listener. These tools include the special style of narration, sentence types, syntax and punctuation, as well as specialized vocabulary. Additionally, paralinguistic and extralinguistic tools and individual speech features can also be included. For example, by analyzing the unique syntactic structures and words used in the poetry of Abai Kunanbayev in Kazakh literature, one can observe the high level of his linguistic skills. Each sentence of his works has a unique emotional impact and immerses the listener in thought. Moreover, Abai's writings play an important role in the social and cultural context as well. The role and development level of the motivational component in linguistic actions, as well as the different forms of linguistic tools, are key aspects in a person's self-expression [13].

We believe it is important to distinguish the individual style as a significant feature of linguistic competence. This refers to the unique features of storytelling (speech), individual differences in linguistic competence, and qualities that ensure the uniqueness and individuality of personal style, which are linked to each person's socialization characteristics, their unique experience, and psychological features. As we have discussed, the aspects of linguistic competence are closely related to the need to narrate content that is important in a person's life through texts.

The nature of the content being narrated (such as personal experience, life events, or understanding the world and oneself) becomes more complex and deeper through the formation of linguistic skills and mastering various linguistic tools. Of course, this content results from the person's long or short-term internal psychological work and reflection. A person's level of reflection and self-analysis skills play a crucial role in constructing their stories effectively. To select content that could later be presented in a story, a person needs to understand where it fits in

their experience, how important it is to their identity, whether it holds significance for others, and how it affects the process of understanding life and themselves [14, p. 68].

Having understood all of this, a person can choose linguistic tools and narrative features to present their story. In this regard, we believe it is necessary to highlight the structural features of constructing one's own narrative. The plot and genre chosen for storytelling are very important. The more proficient a person is in the linguistic field, the better they are familiar with the literary plots and stories used in their culture. These plots are consciously or unconsciously used by the individual to build their own narratives. Similarly, the selection of narrative genres is also connected to this.

Moreover, another important aspect is the awareness of linguistic competence itself. This refers to a person's intuitive understanding that they have the ability and skills in the linguistic domain to tell stories. They feel themselves as a "speaker and narrator subject" and are able to select topics for their narratives, giving meaning and significance to those topics. Understanding linguistic competence in this way makes its psychological interpretation crucial, as these aspects have been insufficiently addressed in other researchers' works.

Thus, linguistic competence can be viewed broadly, encompassing the mastery of certain linguistic resources, the acquisition of skills in using language and linguistic tools socially and ethnoculturally, as well as the ability to convey various psychological contents, conduct communication, and regulate and construct speech behavior through linguistic activity. This concept includes understanding others' texts and effectively constructing one's own texts. Furthermore, it allows for self-expression by recognizing oneself as a "speaking subject" and mastering speech skills in accordance with specific linguistic and social norms. The experimental developments in the study of linguistic competence, particularly the research conducted by L.S. Vygotsky, and his colleagues in Moscow, as well as studies carried out at the Ukrainian Psychoneurological Academy in Kharkiv [14, p. 69], have allowed us to draw new conclusions about thinking and speaking issues. These studies have provided deeper insights into the practical aspects of human mental development and intellectual activity. Therefore, we chose historical narration rather than systematic narration of experimental material, as this method allows us to demonstrate the intellectual development of a child while accepting the concept of mental development. Based on the above statements, we have divided the presented material into three main sections:

1. Investigating the role of speech in the development of practical intellectual operations.
2. Studying speech in the resolution of mechanical connections and relationships.
3. Addressing the issues of human general thinking ability and the development of practical intellectual activity.

We initially proposed a psychological concept based on several key principles in conducting research on the relationship between thinking and speech. Specifically, by considering human thinking as a unique form inherent to it, the central issue of our study was the interrelation of thinking and speech. Contrary to views that suggest thinking, and speech are either independent or identical, we concluded that thinking and speech are interrelated and exist in complex relationships. V. Preyer's statement, "Speech does not form the mind, but speech is necessary for its development," made over 60 years ago, is still being confirmed in contemporary psychology through every new study. However, the relationship between thinking and speech is not fixed; it evolves and changes during the ontogenetic process [15].

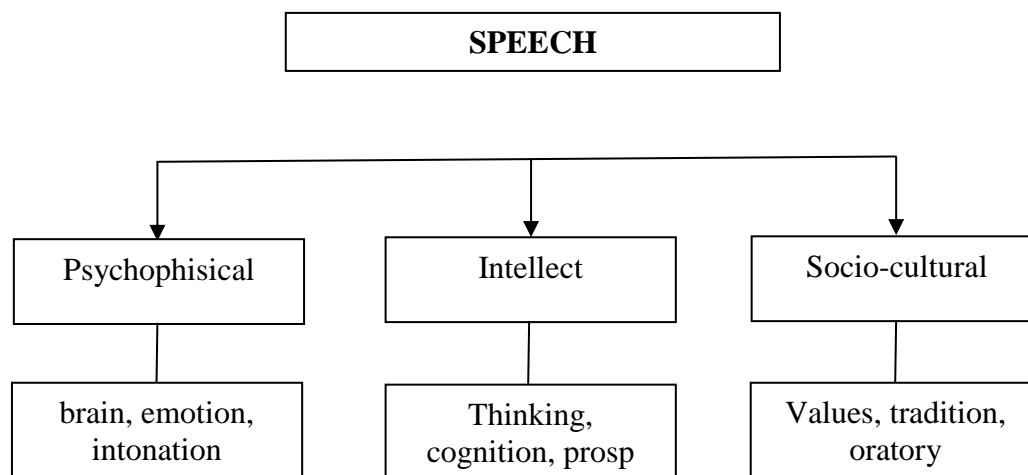
In the initial stage, thinking and speech appear as independent functions, each with its own genetic origins and developmental history. In both the animal world and during children's development, certain intellectual operations emerge that seemingly have no direct connection to the development of speech. This "pre-speech" intelligence and the corresponding "non-intellectual" forms of thinking and speech are first observed in the development of thinking and speech. This

shift signifies the transition to an internal unity in the relationship between thinking and speech. In this phase, speech loses its initial expressive function and begins to serve as a distinctive marker that supports the thinking process. As L.S. Vygotsky noted: "...here, thinking acquires the most important advantage, meaning that thought becomes an external action through speech, and, like other external actions, it can be mastered, controlled, and organized according to our goals".

The transformation of pre-verbal intelligence into speech intelligence essentially represents the historical process through which the initial "natural" forms of intelligence evolve into unique forms of human thinking. When comparing the relationship between thinking, and speech in the animal world and human development, it becomes clear that human cognitive development is not merely a continuation of animal evolution, but rather a transition from biological to historical development.

Based on these principles, the main issue regarding "practical" intelligence is to investigate what fundamental changes the initial intellectual actions undergo under the influence of speech. The acquisition of specific human forms of thinking and the significant role that speech plays in this process became the primary theoretical question that prompted us to study practical intelligence.

The phenomenon of speech, as a psychophysiological and mental phenomenon, is considered in modern science as a meeting point of many disciplines. The complexity of this phenomenon is evident in the close connection between its biological, cognitive, social and cultural aspects. Here is a schematic diagram of the multifaceted nature of speech (Scheme 1):



Scheme 1 - Multifaceted nature of speech

Conclusion

Speech, as a psychophysiological and intellectual phenomenon, describes a complex process closely related to human thinking and speaking abilities. This phenomenon is grounded in the functioning of the human brain and nervous system, as well as psychological aspects, from the formation of language to its use. Speech, in terms of both psychophysiology and intellect, results from the interaction between human cognitive abilities, the nervous system, brain structures, and speech organs. These processes facilitate the individual's interaction with the external world and fulfill the social function of language. Moreover, speech plays a crucial role in an individual's psychological and cognitive development.

Analysis has revealed that speech is not simply a means of conveying information, but a universal phenomenon that combines the psychological, physiological, and intellectual functions of human consciousness. Experimental research confirms the concept of speech from several perspectives: its direct connection to brain structures (neuropsychology); its role in the formation of

cognitive functions (psychology); social influences on emotions and relationships (sociolinguistics); and the development of language through cultural and historical factors (language history). Therefore, speech is a mirror reflecting a person's thought system, emotional experiences, and social identity. For a comprehensive study of speech phenomena in the future, the following scientific directions are needed: neuropsychological research using modern brain scanning methods such as functional magnetic resonance imaging to deeply understand speech processes; cross-cultural comparative research that identifies speech patterns and their national cultural characteristics and compares the speech-cultural characteristics of various ethnic communities; modeling the emotional aspects of speech using neural networks and artificial intelligence methods and quantitatively analyzing its expressive properties; research in the fields of emotion and artificial intelligence that investigates the regularities in the formation of speech abilities in individuals raised in bilingual and multilingual environments and empirically confirms the impact of bilingualism on cognitive processes; Applied linguistics and education that improves methodologies for developing speech culture in education systems and develops innovative approaches to improving students' speech and communication skills.

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