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**LEXICAL SEMANTICS AND COGNITIVE LINGUISTICS:
INVESTIGATING THE ENCODING OF TEMPORAL CONCEPTS
ACROSS ENGLISH AND UKRAINIAN**

The interplay between language and cognition has long fascinated researchers from various disciplines, prompting investigations into how linguistic structures shape and reflect thought processes. Among the myriad facets of this interrelationship, the encoding of time presents a particularly intriguing area of study. This article aims to explore the nuances of temporal concepts within the lexicons of English and Ukrainian, two linguistically distinct systems, through the lens of lexical semantics and cognitive linguistics.

Temporal expressions in language are not merely tools for communication but also serve as cognitive frameworks that influence how individuals perceive and organize their experiences of time (Altarriba & Basnight-Brown, 2022). The theory of linguistic relativity, or the Sapir-Whorf hypothesis, suggests that the language one speaks directly affects one's thought processes and worldview. Accordingly, this study hypothesizes that the linguistic mechanisms and vocabulary related to time in English and Ukrainian not only differ but also shape temporal cognition in unique ways within each linguistic community.

To approach this complex interrelation, the study employs a comparative analysis of temporal lexicon, including verbs, nouns, adverbs, and phrases that denote time, duration, and sequence. By examining how these temporal elements are lexically and syntactically integrated into everyday language use in English and Ukrainian, the research aims to uncover underlying patterns that may suggest broader cognitive orientations towards the temporal aspect of experience (Syzonov, 2018).

The central problem addressed in this research is the delineation and analysis of how the English and Ukrainian languages encode temporal concepts within their lexicons and how these encodings influence cognitive processes related to time perception and organization (Nykykyporets, 2023). This inquiry is rooted in the broader scientific interest in understanding the impact of language structure on thought, an area that spans across cognitive psychology, linguistics, and anthropology.

1. Cognitive psychology and linguistic relativity. The hypothesis that language influences thought, known as linguistic relativity, provides a theoretical framework for this study. By examining the specific ways in which time is linguistically structured in English and Ukrainian, this research aims to contribute empirical data to debates about how deeply language can shape cognitive functions such as memory, attention, and perception. This is crucial for understanding whether temporal cognition varies significantly between speakers of different languages and how such variations manifest.

2. Language learning and bilingualism. From a practical standpoint, insights into how different languages encode time can inform educational approaches in language teaching and bilingual education. Understanding these differences can aid in developing more effective teaching methodologies that respect linguistic and cognitive diversity, thus enhancing the learning experience for students acquiring second languages that differ structurally from their native tongues.

3. Artificial Intelligence (AI) and computational linguistics. In the realm of artificial intelligence, understanding the natural language processing of time can improve how AI systems, such as chatbots and virtual assistants, interpret and generate human-like responses involving temporal concepts (Kumar, 2023). This has direct implications for the design of more intuitive user interfaces and interaction models that are sensitive to linguistic and cultural nuances in temporal expression.

4. Cross-cultural communication and global collaboration. In an increasingly interconnected world, effective communication across cultural and linguistic boundaries is vital. Insights from this study can enhance cross-cultural understanding by highlighting how different linguistic groups perceive and articulate temporal aspects, which are often a source of misunderstanding in international contexts.

By addressing these connections, the research not only tackles a linguistically grounded cognitive query but also extends its relevance to interdisciplinary applications, affecting both theoretical exploration and practical outcomes in several domains.

The purpose of this article is to examine and compare how temporal concepts are encoded in the English and Ukrainian lexicons, and to investigate the implications of these encodings for temporal cognition in speakers of both languages. This comparative analysis aims to contribute to the understanding of linguistic relativity in cognitive linguistics and enhance cross-disciplinary insights into the relationship between language structure and cognitive processes.

This study systematically examines the encoding of temporal concepts in English and Ukrainian through three specific linguistic features: verb tenses, aspectual markers, and temporal adverbs. These linguistic elements provide a rich source for understanding how time is conceptualized and articulated differently in each language.

1. Verb tenses and aspect. English employs a combination of tenses and aspects to convey time, such as simple past (*I walked*), present perfect (*I have walked*), and past continuous (*I was walking*). In contrast, Ukrainian has a more nuanced aspect system that differentiates between imperfective and perfective aspects. For example, the verb *xodumu* implies an ongoing, repeated, or habitual action (imperfective), whereas *nimu* denotes a completed action (perfective). This aspectual distinction is crucial, as it influences how speakers of Ukrainian perceive and report actions over time, suggesting a cognitive emphasis on the completion or continuation of actions.

2. Temporal adverbs. The use of temporal adverbs provides insights into how speakers of both languages conceptualize the flow of time. English frequently uses adverbs like *recently*, *soon*, and *previously* to relate actions to the present moment. Ukrainian, on the other hand, often employs adverbs that emphasize the completion or initiation of actions, such as *вже* and *щойно*. This difference highlights a potential cognitive divergence in the perception of time's immediacy and its milestones.

3. Syntactic constructions. English and Ukrainian differ in their syntactic constructions for expressing future intentions or plans, which can reflect different cognitive approaches to the future. English typically uses the *will* future or the *going to* future, as in *I will go* or *I am going to go*, which may imply certainty or premeditation. Ukrainian often uses the present tense forms with future meaning, as in *Я йду* (I go / I am going), suggesting a perception of the future as a continuation of the present.

The differences observed in the linguistic encoding of time between English and Ukrainian suggest that language structure significantly influences temporal cognition. The English system, with its emphasis on tense and the linear progression of time, might encourage a view of time as a sequence of distinct, orderly events. In contrast, the Ukrainian focus on aspect and the state of actions (completed vs. ongoing) may foster a more fluid or segmented perception of time. These linguistic features align with the broader hypotheses of linguistic relativity, wherein language not only serves as a medium for expressing thought but also fundamentally shapes it.

The findings contribute to cognitive linguistics by providing evidence that language-specific features can lead to different ways of thinking about and experiencing time. They also offer practical insights for cross-cultural communication and education, suggesting that awareness of these differences can enhance the effectiveness of bilingual education and reduce misunderstandings in multilingual settings. Furthermore, the results have implications for artificial intelligence, particularly in improving the temporal sensitivity of language processing systems, making them more adaptable to diverse linguistic contexts.

Conclusions

The study's analysis of temporal encodings in English and Ukrainian underscores significant linguistic differences that likely influence temporal cognition in speakers of these languages. English's detailed tense system and linear conceptualization of time contrast sharply with Ukrainian's aspect-focused approach, which emphasizes the state or completion of actions. These structural variations support the notion of linguistic relativity, suggesting that language does indeed play a critical role in shaping cognitive processes related to time perception (Stepanova, 2023).

The differences in temporal expression and conceptualization have profound implications for cross-cultural communication, suggesting that misunderstandings could arise from fundamentally different perceptions of time between speakers of English and Ukrainian. For educators and linguists, these findings highlight the importance of incorporating linguistic and cognitive diversity into language teaching practices and translation studies.

Several avenues for further research emerge from this study. First, expanding the investigation to include other language groups could provide a broader comparative base and help generalize findings across a wider spectrum of linguistic systems. Such

studies could involve languages with even more diverse temporal systems, such as those with minimal grammatical markers for time, to deepen our understanding of the extremes of linguistic relativity.

Second, experimental studies involving bilingual speakers could elucidate how individual brains manage multiple temporal systems and whether cognitive flexibility in temporal perception correlates with language use. This could also explore whether frequent switching between languages with different temporal systems affects temporal cognition.

Third, technological applications, particularly in artificial intelligence, could benefit from these insights. Research could focus on developing language processing algorithms that better understand and generate language in accordance with the native speaker's temporal cognition, improving AI's interaction capabilities.

Ultimately, the field stands to gain a deeper understanding of the cognitive implications of linguistic structures, potentially driving forward both theoretical linguistics and practical applications in education, technology, and cross-cultural communication.

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АНАЛІЗ ТРАДИЦІЙНОЇ ТА НОВІТНЬОЇ МЕТОДИКИ У НАВЧАННІ ІНОЗЕМНИМ МОВАМ

Згідно з освітньою реформою, однією з ключових компетентностей випускників української школи є володіння іноземною мовою. Тобто іноземна мова стає не об'єктом вивчення, а незамінним засобом комунікації. Незнання іноземної мови вузькими спеціалістами чи вченими загрожує українській науці чи освіті інформаційною ізоляцією, що неприпустимо для їхнього професійного розвитку та загального поступу України шляхом науково-технічного прогресу. Водночас,