THE APPLICATION OF COGNITIVE MECHANISMS AND ARTIFICIAL INTELLIGENCE IN DISCOURSE ANALYSIS

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Abstract. This study explores how cognitive mechanisms- metaphor, frame, and prototype- shape evaluative discourse in media and politics. Drawing on qualitative analysis, it integrates artificial intelligence (AI) as a tool that identifies patterns and enhances interpretation of value-laden language. AI-assisted discourse analysis reveals how abstract moral and ideological meanings are constructed and transmitted through language. The paper emphasizes the importance of cultural scripts and conceptual categories in shaping public perception. These findings provide insights into both linguistic theory and practical applications in political communication and education.
Keywords: cognitive mechanisms, metaphor, frame semantics, prototype theory, discourse analysis, artificial intelligence

Аннотация. В статье рассматривается, как когнитивные механизмы- метафора, фрейм и прототип- формируют оценочные высказывания в медийном и политическом дискурсе. Особое внимание уделяется роли искусственного интеллекта в выявлении скрытых концептуальных структур. Применение ИИ позволяет более точно интерпретировать метафоры и культурные фреймы, лежащие в основе идеологических оценок. Работа сочетает теоретические положения когнитивной лингвистики с современными цифровыми подходами, что делает её актуальной для политической коммуникации и образования.
Ключевые слова: когнитивные механизмы, метафора, фреймовая семантика, теория прототипов, дискурс-анализ, искусственный интеллект

Annotatsiya. Ushbu maqolada kognitiv mexanizmlar- metafora, freym va prototip- media va siyosiy nutqdagi baholovchi ifodalarni qanday shakllantirishi ko'rib chiqiladi. Sun'iy intellekt vositasida baholovchi tildagi mavhum g'oyalar va qadriyatlar aniqlanadi hamda ularning nutq orqali qanday uzatilishi tahlil qilinadi. Tadqiqot madaniy ssenariylar va kontseptual kategoriyalarning ommaviy idrokni shakllantirishdagi o'rnini yoritadi. Bu yondashuv tilshunoslik nazariyasi va amaliy kommunikatsiyada dolzarb hisoblanadi.
Kalit so'zlar: kognitiv mexanizmlar, metafora, freym semantikasi, prototip nazariyasi, nutq tahlili, sun'iy intellekt

Introduction

Discourse is a central medium through which social reality is constructed, often revealing underlying value systems. Cognitive mechanisms—metaphor, frame, and prototype—provide key insights into how evaluative meanings are encoded in language (Lakoff & Johnson, 1980; Fillmore, 1982). With the advancement of artificial intelligence (AI), especially in natural language processing, scholars can now systematically identify and categorize such mechanisms in large corpora (Bender & Koller, 2020). AI enriches traditional analysis by detecting subtle evaluative patterns that may escape human coders. This study investigates the role of cognitive mechanisms in evaluative discourse while incorporating AI as a supportive analytical tool.

Methods

This research employed qualitative discourse analysis enhanced with AI-assisted pattern recognition. Texts from media and political speeches were selected and processed using language models to identify metaphorical expressions and semantic frames. For instance, metaphors like "justice is balance" or "corruption is a virus" were detected using automated semantic clustering. These expressions were analyzed contextually to determine the frames they invoked, such as the "disease" frame for corruption, which implies social contagion. Prototype analysis focused on how typical traits of categories (e.g., "hero" or "criminal") are reinforced or challenged across discourses. AI helped in comparing these patterns across diverse datasets, improving consistency and scalability of analysis.

Results

The findings of the study, supported by artificial intelligence (AI)-enhanced analysis, reveal that the application of cognitive mechanisms—metaphor, frame, and prototype—plays a pivotal role in shaping evaluative meanings within public discourse. Metaphors serve as powerful cognitive tools that allow complex and abstract societal issues to be interpreted through more tangible and familiar domains. For instance, the metaphor "corruption is a virus" frames unethical behavior as a threat to societal health, activating emotional responses and reinforcing urgency in public perception. Frames further contextualize these metaphors, embedding them in culturally resonant narratives such as the "nation-as-family" or "state-as-business" frameworks. These frames help structure public understanding by appealing to shared moral values, responsibilities, and social expectations. Meanwhile, prototypes delineate category boundaries by defining which features are seen as central to concepts like "hero," "enemy," or "citizen." For example, the ideal "model citizen" is repeatedly portrayed as law-abiding, loyal, and productive, while deviations from this prototype lead to implicit or explicit negative evaluation. The role of AI in this process is particularly significant: by automatically identifying frequent metaphorical mappings, recurring frames, and common prototype structures, it enables large-scale comparative analysis across different discourse genres and

sociopolitical contexts. This technological support allows researchers to detect subtle evaluative patterns that may otherwise remain unnoticed in traditional close-reading methods. Overall, the study confirms that the interaction of cognitive mechanisms, supported by intelligent computational tools, systematically guides how audiences interpret, judge, and emotionally react to public communication. This confirms the central hypothesis that evaluative language is not arbitrary but follows predictable, culturally shaped cognitive patterns that can be rigorously analyzed.

Conclusion

This study reaffirms that metaphor, frame, and prototype are central to evaluative discourse, functioning simultaneously to shape interpretation and judgment. The integration of AI enhances this analysis by automating the detection of conceptual structures, making evaluation more precise and scalable (Cambria et al., 2020). These insights have applications in media literacy, critical pedagogy, and political discourse analysis. Future research should explore cross-cultural variations in these mechanisms and further integrate multimodal elements such as visuals and gestures to build a holistic model of evaluative communication.

References:

1. Lakoff, G., & Johnson, M. (1980). *Metaphors We Live By*. University of Chicago Press.
2. Fillmore, C. J. (1982). Frame Semantics. In *Linguistics in the Morning Calm* (pp. 111–137). Hanshin.
3. Rosch, E. (1978). Principles of Categorization. In E. Rosch & B. B. Lloyd (Eds.), *Cognition and Categorization* (pp. 27–48). Lawrence Erlbaum Associates.
4. Bender, E. M., & Koller, A. (2020). Climbing Towards NLU: On Meaning, Form, and Understanding in the Age of Data. *Proceedings of ACL*, 5185–5198.
5. Cambria, E., Poria, S., Bajpai, R., & Schuller, B. (2020). SenticNet: A Cognitive Approach to Sentiment Analysis. *IEEE Intelligent Systems*, 35(1), 68–76.