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COGNITIVE MECHANISMS OF AMBIGUITY INTERPRETATION IN ENGLISH DISCOURSE

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Abstract

This article explores the cognitive mechanisms involved in the interpretation of ambiguity in English discourse. Ambiguity is viewed as an inherent feature of natural language that emerges when linguistic units allow multiple interpretations. The study examines the principal types of ambiguity, including lexical, structural, semantic, and pragmatic ambiguity, and analyzes the mental processes underlying meaning construction during communication. Particular attention is devoted to the role of contextual information, conceptual knowledge, grammatical structure, and inferential reasoning in ambiguity resolution. The article also discusses major cognitive approaches such as the Garden Path Model and Constraint-Based Theory, which explain how individuals process ambiguous linguistic expressions in real time. Furthermore, the research emphasizes the significance of ambiguity studies in cognitive linguistics, psycholinguistics, language teaching, and artificial intelligence. The findings demonstrate that ambiguity interpretation represents a dynamic interaction between linguistic structures and human cognitive systems.

Keywords: ambiguity, cognitive linguistics, ambiguity interpretation, lexical ambiguity, structural ambiguity, semantic ambiguity, pragmatic ambiguity, discourse analysis, psycholinguistics, language processing.

Annotatsiya

Ushbu maqolada ingliz diskursida noaniqlikni talqin qilishda ishtirok etuvchi kognitiv mexanizmlar tahlil qilinadi. Noaniqlik tabiiy tilning ajralmas xususiyati sifatida qaralib, til birliklari bir nechta ma’noni ifodalashi mumkinligi bilan izohlanadi. Tadqiqotda noaniqlikning asosiy turlari — leksik, strukturaviy, semantik va pragmatik noaniqliklar ko‘rib chiqilib, muloqot jarayonida ma’no shakllanishining mental jarayonlari tahlil qilinadi. Shuningdek, maqolada kontekstual ma’lumot, konseptual bilim, grammatik tuzilma va inferensial tafakkurning noaniqlikni bartaraf etishdagi o‘rni yoritiladi. Garden Path modeli va Constraint-Based nazariyasi kabi muhim kognitiv yondashuvlar insonning noaniq til birliklarini real vaqt jarayonida qanday qayta ishlashini tushuntirib beradi. Tadqiqot natijalari noaniqlikni talqin qilish til va inson tafakkuri o‘rtasidagi murakkab hamkorlik mahsuli ekanligini ko‘rsatadi.

Kalit so‘zlar: noaniqlik, kognitiv lingvistika, noaniqlikni talqin qilish, leksik noaniqlik, strukturaviy noaniqlik, semantik noaniqlik, pragmatik noaniqlik, diskurs tahlili, psixolingvistika, tilni qayta ishlash.

Аннотация

В данной статье исследуются когнитивные механизмы интерпретации неоднозначности в английском дискурсе. Неоднозначность рассматривается как неотъемлемая характеристика естественного языка, возникающая в случаях, когда языковые единицы допускают несколько интерпретаций. В исследовании анализируются основные виды неоднозначности, включая лексическую, структурную, семантическую и прагматическую неоднозначность, а также ментальные процессы формирования значения

в ходе коммуникации. Особое внимание уделяется роли контекста, концептуальных знаний, грамматической структуры и инференциального мышления в разрешении неоднозначности. В статье рассматриваются такие когнитивные подходы, как модель Garden Path и теория Constraint-Based, объясняющие процессы обработки неоднозначных языковых единиц в реальном времени. Кроме того, подчёркивается значение исследований неоднозначности для когнитивной лингвистики, психолингвистики, методики преподавания языков и искусственного интеллекта. Результаты исследования показывают, что интерпретация неоднозначности представляет собой сложное взаимодействие языковых структур и когнитивной системы человека.

Ключевые слова: неоднозначность, когнитивная лингвистика, интерпретация неоднозначности, лексическая неоднозначность, структурная неоднозначность, семантическая неоднозначность, прагматическая неоднозначность, анализ дискурса, психолингвистика, обработка языка.

Introduction

Language serves not only as a means of communication but also as a reflection of human cognition and mental activity. One of the most challenging phenomena in linguistic communication is ambiguity, which emerges when a linguistic expression allows more than one interpretation.[1] Ambiguity is deeply connected with cognitive processing because understanding unclear or multiple meanings requires complex mental operations.[2] In English discourse, ambiguity frequently appears in lexical items, syntactic structures, semantic relations, and pragmatic situations.[3]

The growing interest in cognitive linguistics and psycholinguistics has significantly increased attention toward ambiguity interpretation.[4] Modern linguistic studies emphasize that language comprehension is not a passive activity; rather, it involves active cognitive mechanisms such as prediction, conceptualization, inference, and contextual analysis. Consequently, ambiguity processing has become an important field of investigation in linguistics, cognitive science, artificial intelligence, and language education.

In addition, significant contributions to the study of ambiguity and its cognitive interpretation have been made by both international and Uzbek scholars. According to Ronald W. Langacker (1987), one of the founders of Cognitive Grammar, linguistic meaning is inseparable from conceptualization processes occurring in the human mind. He argues that language users interpret ambiguous expressions through cognitive mechanisms that organize and structure conceptual knowledge rather than through purely formal linguistic rules.[5]

In Uzbek linguistics, Nizomiddin Mahmudov has extensively examined the role of context and communicative situations in meaning interpretation. Mahmudov emphasizes that the meaning of linguistic units is often clarified through contextual and pragmatic factors, enabling speakers and listeners to resolve semantic uncertainty and ambiguity during communication.[6]

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[1] Semantics Lyons, J. (1977). *Semantics*. Cambridge University Press. p-25.

[2] Psycholinguistics Field, J. (2003). *Psycholinguistics: A Resource Book for Students*. Routledge. p41.

[3] Linguistics for Non-Linguists Parker, F., & Riley, K. (2010). *Linguistics for Non-Linguists*. Pearson Education. p67.

[4] Cognitive Linguistics: An Introduction Evans, V., & Green, M. (2006). *Cognitive Linguistics: An Introduction*. Edinburgh University Press. p18.

[5] Langacker, R. W. (1987). Foundations of Cognitive Grammar. Stanford University Press. p. 99.

[6] Mahmudov, N. (2013). Til va Nutq. Toshkent: O‘qituvchi. pp. 76–80.

These perspectives demonstrate that ambiguity processing is not solely a linguistic phenomenon but also a cognitive activity involving conceptual knowledge, contextual reasoning, and pragmatic interpretation.

The Concept of Ambiguity in Linguistics

Ambiguity is generally defined as the coexistence of two or more meanings within a single linguistic unit. Linguists consider ambiguity an inherent property of natural languages because human communication constantly relies on flexible and context-dependent structures. Ambiguity may occur intentionally, especially in literary texts, humor, political discourse, and advertising, or unintentionally in everyday communication.[7]

From a cognitive perspective, ambiguity demonstrates the dynamic relationship between language and thought. Human beings are capable of identifying intended meanings rapidly despite the presence of multiple interpretations. This ability reflects the efficiency of cognitive processing systems in the human brain.

Researchers in cognitive linguistics argue that meaning is not fixed inside words themselves; rather, meaning emerges through interaction between linguistic forms, context, and conceptual knowledge.[8] Therefore, ambiguity interpretation requires the activation of various cognitive resources.

Major Types of Ambiguity

Lexical Ambiguity

Lexical ambiguity occurs when a single lexical unit possesses several meaning. It is commonly associated with polysemy and homonymy. Polysemous words contain related meanings, whereas homonyms represent unrelated meanings sharing the same form.

For example, the word “spring” may denote:

- a season of the year,
- a source of water,
- or a sudden jump.

The interpretation depends heavily on contextual information. During cognitive processing, several meanings may initially become activated before the brain selects the most contextually appropriate option.

Structural Ambiguity

Structural or syntactic ambiguity emerges when a sentence permits more than one grammatical interpretation. English syntax often creates ambiguity because phrase attachment and sentence organization may be interpreted differently.[9]

For instance:

“Students discussed the problem with the professor.”

This sentence may indicate:

- the students used the professor to discuss the problem,
- or the professor participated in the discussion.

[7] Metaphors We Live By Lakoff, G., & Johnson, M. (1980). *Metaphors We Live By*. University of Chicago Press. p74.

[8] Cognitive Linguistics: An Introduction Evans, V., & Green, M. (2006). *Cognitive Linguistics: An Introduction*. Edinburgh University Press. p33

[9] The Study of Language Yule, G. (2020). *The Study of Language*. Cambridge University Press. p54

Psycholinguistic experiments demonstrate that readers typically prefer the simplest grammatical interpretation first.[10] However, if additional information contradicts the initial understanding, reanalysis becomes necessary.

Semantic Ambiguity

Semantic ambiguity arises when conceptual relationships inside a sentence remain unclear. Unlike syntactic ambiguity, semantic ambiguity concerns interpretation at the level of meaning rather than structure.

For example:

"The baby is too hot to eat."

Although grammatically correct, the sentence generates semantic uncertainty because the intended logical relation is unclear. Such ambiguities require inferential reasoning and world knowledge for proper interpretation.

Pragmatic Ambiguity

Pragmatic ambiguity depends on communicative intention and situational context. In many cases, the literal meaning differs from the speaker's actual purpose.

For example:

"It's cold here."

Depending on context, this statement may function as:

- a simple observation,
- or an indirect request to close a window.

Pragmatic interpretation therefore involves social cognition and contextual inference.[11]

Cognitive Approaches to Ambiguity Processing

Cognitive theories of language emphasize that ambiguity resolution involves simultaneous interaction between linguistic and mental processes. Human comprehension relies on prediction, memory, conceptual mapping, and contextual integration.[12]

One influential approach is the Garden Path Model, which proposes that individuals initially select the most grammatically economical interpretation. When the interpretation proves incorrect, the cognitive system reconstructs sentence meaning.

For example:

"The horse raced past the barn fell."

Readers initially misunderstand the sentence because they assign an incorrect syntactic structure. Only later does reanalysis occur.

Another important framework is the Constraint-Based Model. According to this theory, ambiguity resolution does not occur sequentially but through simultaneous interaction of multiple constraints, including:

- grammatical information,
- semantic compatibility,
- contextual cues,
- frequency of usage,
- and background knowledge.[13]

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[10] Lyn Frazier Frazier, L. (1987). Sentence processing: A tutorial review. In M. Coltheart (Ed.), *Attention and Performance XII*. Erlbaum. p117

[11] Cognitive Linguistics: An Introduction Evans, V., & Green, M. (2006). *Cognitive Linguistics: An Introduction*. Edinburgh University Press. P71

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This approach explains why contextual information strongly influences interpretation from the earliest stages of comprehension.

Conclusion

Ambiguity remains one of the most intellectually significant phenomena in linguistic and cognitive studies. The interpretation of ambiguous language requires highly sophisticated cognitive mechanisms involving contextual analysis, grammatical processing, conceptual reasoning, and inferential thinking.

Lexical, structural, semantic, and pragmatic ambiguities illustrate the multidimensional nature of language comprehension. Cognitive theories such as the Garden Path Model and Constraint-Based approaches explain how the human mind manages multiple interpretations during real-time communication.

The study of ambiguity processing not only advances theoretical linguistics but also contributes to psycholinguistics, language teaching, discourse analysis, and artificial intelligence research. As modern communication becomes increasingly dependent on digital technologies and multilingual interaction, understanding cognitive mechanisms of ambiguity resolution will continue to play a crucial role in linguistic scholarship.

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