

## **Propositional Analysis of Compound Sentences in the Uzbek Language**

***Otaxonova Gulshirinoy Kanaxatovna***

*Namangan region pedagogical skill center, a teacher of mother tongue and literature*

**Abstract.** This article explores the propositional analysis of compound sentences in the Uzbek language, focusing on their semantic and structural features. By examining the logical relationships between clauses, we aim to provide a deeper understanding of how compound sentences function within Uzbek syntax. Various linguistic theories and previous research on propositional structures are also considered to support our analysis. This study has demonstrated that compound sentences in the Uzbek language exhibit various propositional structures that reflect logical relationships between clauses. Understanding these relations is essential for both linguistic analysis and practical applications in translation and text interpretation. Future research may further explore the interaction of propositional structures with discourse and pragmatics in Uzbek.

**Key words:** propositional analysis, compound sentences, the Uzbek language.

### **Introduction**

This research explores the propositional structures of compound sentences in the Uzbek language, focusing on their semantic and logical relationships. Compound sentences consist of two or more independent clauses that maintain logical coherence through various conjunctions and punctuation. By analyzing these structures through propositional logic, we aim to understand the functional role of coordination, disjunction, and causality in Uzbek syntax. The study integrates linguistic theories and previous research to demonstrate how logical relations define the meaning and structure of compound sentences. Language is a structured system where meaning is conveyed through various syntactic and semantic mechanisms. One of the essential aspects of syntax is how different clauses are connected to form complex expressions. Compound sentences, which consist of two or more independent clauses, play a crucial role in communication by establishing logical relations between statements.

According to Carnap, "a proposition is a declarative sentence that expresses a state of affairs and can be evaluated as either true or false." When analyzing compound sentences, propositional logic provides a framework to examine how independent clauses interact logically.<sup>1</sup> In Uzbek, compound sentences often involve coordinating conjunctions (va - "and", yoki - "or", lekin - "but", chunki - "because"), which structure the logical relations between propositions.

Matyoqubov describes Uzbek compound sentences as "syntactic structures where two or more independent propositions are linked through coordination, maintaining logical and semantic coherence." This study applies a propositional analysis to classify and evaluate these structures, exploring how they contribute to meaning in Uzbek syntax.<sup>2</sup>

<sup>1</sup> Carnap, R. (1956). *Meaning and Necessity: A Study in Semantics and Modal Logic*. University of Chicago Press.

<sup>2</sup> Matyoqubov, M. (1995). *O'zbek tili grammatikasi*. Fan.

The research addresses the following questions:

1. What are the primary types of compound sentences in Uzbek?
2. How do logical relations (e.g., conjunction, disjunction, implication) function in these sentences?
3. What role do conjunctions and punctuation play in propositional structure?

By answering these questions, we aim to provide a comprehensive understanding of Uzbek compound sentences from a logical and linguistic perspective.

In linguistic studies, propositional analysis plays a crucial role in understanding the logical and semantic structures of sentences. A proposition, as defined by Carnap is "the content of a statement that can be either true or false." When applied to compound sentences, propositional analysis helps to determine the logical connections between clauses.

Compound sentences in the Uzbek language consist of two or more independent clauses connected by coordinating conjunctions. As Lyons states, "compound sentences are composed of structurally equal propositions that maintain logical independence while expressing a unified idea." This study examines the types of propositional relations in Uzbek compound sentences, focusing on conjunctions, coordination, and semantic interpretations.<sup>3</sup>

## 2. The Nature of Compound Sentences in Uzbek

According to Matyoqubov, compound sentences in Uzbek are divided into two main types:

1. Syndetic Compound Sentences – Clauses are connected by conjunctions such as va (and), yoki (or), lekin (but), chunki (because).
2. Asyndetic Compound Sentences – Clauses are connected without conjunctions, relying on punctuation or intonation.

The propositional structure of these sentences depends on the relationship between the clauses. For example:

U keldi va biz suhbatlashdik. (He came, and we talked.)

This sentence consists of two independent propositions joined by the coordinating conjunction va (and), which suggests a sequential relationship.

U keldi, biz esa ketdik. (He came, but we left.)

Here, the conjunction esa (but) introduces a contrastive propositional relation.

## Methodology

To conduct this study, we used a qualitative linguistic analysis approach, examining examples from Uzbek literature, textbooks, and everyday speech. The research was structured as follows:

1. Data Collection: Sentences were extracted from Uzbek grammar books (e.g., Matyoqubov, 1995), linguistic corpora, and written texts.
2. Classification: Sentences were categorized based on their logical relations: conjunctive, disjunctive, causal, and contrastive.
3. Propositional Analysis: Each sentence was analyzed according to formal logic, identifying its truth-functional properties.

The study also incorporated comparative analysis by referencing works on English and general linguistic theories, particularly those by Quirk et al. and Huddleston & Pullum.<sup>4</sup>

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<sup>3</sup> Lyons, J. (1977). Semantics. Cambridge University Press.

<sup>4</sup> Quirk, R., Greenbaum, S., Leech, G., & Svartvik, J. (1985). A Comprehensive Grammar of the English Language. Longman.

This study employs a qualitative linguistic analysis approach, focusing on semantic and logical structures. As Creswell states, "qualitative research allows for an in-depth exploration of linguistic patterns within natural language data."<sup>5</sup>

Our methodology is grounded in propositional logic as described by Frege (1879), which provides a formal way to analyze meaning. By examining truth-functional properties of Uzbek compound sentences, we identify how independent clauses interact logically.

The study is based on data from multiple sources:

1. Uzbek Grammar Books – Sentences were selected from works such as Matyoqubov, which provides comprehensive descriptions of Uzbek syntax.
2. Written Texts – Examples were gathered from newspapers, academic texts, and literary works to ensure a diverse representation of compound sentences.
3. Spoken Uzbek Corpora – Authentic spoken language examples were analyzed to observe real-life usage.

To ensure validity, at least 100 compound sentences were selected, covering various propositional relations.

Once collected, sentences were categorized based on their logical relationships:

1. Conjunctive Relations ( $p \wedge q$ ) – Sentences that express additive meaning.
2. Disjunctive Relations ( $p \vee q$ ) – Sentences that present alternatives.
3. Causal Relations ( $p \rightarrow q$ ) – Sentences where one clause leads to another.
4. Contrastive Relations ( $\neg p \wedge q$ ) – Sentences that express opposition.

As Huddleston & Pullum (2002) note, "classification is a fundamental step in linguistic analysis as it allows researchers to identify patterns and formulate generalizations."

The propositional analysis followed these steps:

1. Identifying Propositions – Each independent clause was treated as a distinct proposition ( $p, q$ ).
2. Determining Logical Connectives – Conjunctions and punctuation were analyzed to determine logical operators ( $\wedge, \vee, \rightarrow$ ).
3. Evaluating Truth Conditions – Each sentence was examined to determine how its meaning depends on the truth values of its propositions.

For example, consider the sentence:

"Men kitob o‘qidim va do‘stim musiqa tingladi." (I read a book, and my friend listened to music.)

Proposition 1 ( $p$ ): I read a book.

Proposition 2 ( $q$ ): My friend listened to music.

Logical Structure:  $p \wedge q$  (both are true simultaneously).

This method aligns with the logical approach used by Carnap, who stated that "analyzing compound sentences through logical operators helps clarify their truth-functional structure."

To ensure the accuracy of findings, the study employed triangulation, cross-checking data from different sources. As Dörnyei explains, "using multiple data sources enhances the reliability of linguistic research."<sup>6</sup>

Additionally, findings were reviewed by Uzbek linguists to confirm interpretations of logical relations in natural speech and writing.

<sup>5</sup> Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. SAGE Publications.

<sup>6</sup> Dörnyei, Z. (2007). *Research Methods in Applied Linguistics*. Oxford University Press.

## Conclusion

This methodological approach provides a systematic framework for analyzing compound sentences in Uzbek. By applying propositional logic, we can classify different types of logical relations, contributing to a deeper understanding of sentence structure and meaning.

Future research could expand on this by exploring the interaction between propositional structures and discourse markers in Uzbek. The study of propositional analysis of compound sentences in the Uzbek language has provided significant insights into how logical structures shape meaning within Uzbek syntax. By employing propositional logic, we have classified different types of compound sentences based on their logical relationships, such as conjunction ( $p \wedge q$ ), disjunction ( $p \vee q$ ), causality ( $p \rightarrow q$ ), and contrast ( $\neg p \wedge q$ ). The propositional analysis of compound sentences in Uzbek highlights the intricate relationship between logic and language structure. By applying formal logic, we have uncovered systematic patterns in the formation of Uzbek compound sentences, reinforcing the idea that syntax is deeply intertwined with semantic interpretation.

## References:

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