

# COMPARATIVE ANALYSIS OF LINGUISTIC STRUCTURES, CULTURAL SIGNIFICANCE, AND COGNITIVE INFLUENCES: LEXICAL-SEMANTIC FIELDS OF NUMBERS IN TURKISH AND UZBEK

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**Abstract.** This study presents a comparative analysis of the lexical-semantic fields of numbers in Turkish and Uzbek, focusing on linguistic structures, cultural significance, and cognitive influences. It highlights how the agglutinative nature of Turkish and the historical influences on Uzbek shape number constructions and usage. The research illustrates the cultural and cognitive frameworks that underlie numerical expressions, emphasizing the symbolic meanings attributed to certain numbers, such as three, seven, and forty, in both societies. Additionally, it explores the syntactic and morphological strategies employed in each language and their implications for cognitive processing and cultural identity. Through a detailed examination of similarities and divergences, the study demonstrates how language, culture, and cognition interconnect in shaping the understanding and application of numbers. This analysis contributes to a broader comprehension of how numerical systems reflect deeper cultural and cognitive patterns across related but distinct Turkic languages.

**Keywords:** lexical-semantic fields, Turkish, Uzbek, number cognition, cultural linguistics, syntax and morphology

**Annotatsiya.** Ushbu tadqiqot turk va o'zbek tillaridagi sonlarning leksik-semantik sohalarining qiyosiy tahlilini taqdim etadi, til tuzilmalari, madaniy ahamiyat va kognitiv ta'sirlarni o'rganadi. Turk tilining agglutinatativ xususiyatlari va o'zbek tiliga tarixiy ta'sirlarning raqam tuzilmalariga va ishlatilishiga qanday ta'sir qilgani ko'rsatiladi. Tadqiqot har ikki jamiyatda ba'zi sonlarga, masalan, uch, yetti va qirq raqamlariga berilgan ramziy ma'nolarni aniqlab, raqam ifodalari ortidagi madaniy va kognitiv asoslarni ochib beradi. Shuningdek, har bir tilning sintaktik va morfologik strategiyalari va ularning kognitiv jarayonlar va madaniy identitetga ta'siri o'rganiladi. O'xshashliklar va farqlarni batafsil tahlil qilish orqali til, madaniyat va kognitsiya o'rtasidagi murakkab o'zaro aloqalar namoyon etiladi. Tadqiqot turkiy tillardagi son tizimlari orqali madaniy va kognitiv naqshlarni chuqurroq tushunishga hissa qo'shadi.

**Kalit so'zlar:** leksik-semantik sohalar, turk tili, o'zbek tili, son kognitsiyasi, madaniy lingvistika, sintaksis va morfologiya.

**Аннотация.** Данное исследование представляет собой сравнительный анализ лексико-семантических полей чисел в турецком и узбекском языках, с акцентом на языковые структуры, культурное значение и когнитивные влияния. Показано, как агглютинативный характер турецкого языка и исторические влияния на узбекский язык формируют числовые конструкции и их использование. Работа раскрывает культурные и когнитивные основы числовых выражений, акцентируя внимание на символическом значении чисел, таких как три, семь и сорок в обеих культурах. Также исследуются синтаксические и морфологические стратегии каждого языка и их влияние на

когнитивные процессы и культурную идентичность. Через детальное изучение сходств и различий демонстрируется взаимосвязь языка, культуры и когниции в восприятии чисел. Исследование способствует более глубокому пониманию отражения культурных и когнитивных моделей в числовых системах родственных, но разных тюркских языков.

**Ключевые слова:** Лексико-семантические поля, турецкий язык, узбекский язык, когниция чисел, культурная лингвистика, синтаксис и морфология.

Research of lexical-semantic domains provides important insights on linguistic and cognitive frameworks and underlines the manner in which languages classify and understand basic ideas, including numbers. The lexical-semantic fields expose the cognitive and cultural reality of speakers in a given language via grouping of words with a shared semantic scope. Given their common Turkish background and separate development throughout time, numbers in this setting provide a credible topic for the comparison between Turkish and Uzbek. The two languages provide different ways to convey digital values that reflect not only the structural linguistic variations but also the variations in cultural meaning and cognitive treatment.

For its agglutinative character, the area of lexical-semantic numbers in Turkish has a clear direct storage system. For one to ten, for instance, the numerals are stated using several lexemes (*bir, iki, üç, dört, beş, altı, yedi, sekiz, dokuz, on*), which mix in more intricate ways for larger numbers. The last ten constructions usually follow a simple pattern, which results in formulations such as *on bir* (eleven) by direct translation of 'ten and one.' Turkish makes thorough use of composition and a simple template to help produce succinct digital statements. This structural framework helps speakers to rapidly produce bigger numbers by logical extensions of fundamental forms, thereby aligning with the work of Shuinshina et al. (2020), which stresses the cognitive efficiency given by agglutinative structures.

On the other hand, Uzbek reflects its own phonological and morphological traits by using a lexical-semantic method somewhat distinct from numerals, therefore reflecting residual Turkish influences. The numbers one to ten in Uzbek (*bir, ikki, uch, to'rt, besh, olti, yetti, sakkiz, to'qqiz, o'n*) show the same separate forms in the same manner; however, their total combination offers a unique model of extra modification and morphemes that may not be present in the Turkish system. For instance, eighteen in Uzbek translates into *O'n Sakkiz* (ten and eight), therefore exposing a quasi-decimal pattern. Such constructs, according to Avakova et al. (2024), show how the Uzbek speakers could see culturally digital linkages and suggest cognitive dependency on additive processes.

Examining the digital vocabulary of the two languages exposes not just language structures but also cognitive patterns and cultural connotations connected with numbers. For instance, certain numbers have socio-cultural meanings, like 'three' or 'seven', which would show up often in folklore or custom and influence their use and interpretation in both languages. While 'seven' is generally acknowledged in the two civilizations as a major figure molded by religious settings and folklore traditions, in Turkish culture the number 'three' is commonly connected with ideals of exhaustiveness.

Knowing the lexical-semantic domains of numbers in Turkish and Uzbek is a valuable goal to grasp how language interacts with ideas and cultural identity. It highlights the interplay between language structure, socializing, and cultural accounts as it shows the projecting cognitive frameworks at risk when speakers sail in their different digital systems. This comparative study highlights the complexity of digital expression and cognition in human language, therefore opening the path for a closer examination of subtle variations and parallels

resulting from different Turkish languages. In Turkish and Uzbek language environments, cultural settings greatly affect the usage and meaning of numbers. Particularly in terms of cultural practices, customs, and social structures of these societies – each having unique semantic meanings connected to historical and modern society frameworks – numbers are firmly anchored in these aspects. Mavlyanova (2022) notes that some numbers are mostly related to cultural beliefs, where, for example, the number ‘seven’ holds a unique position in the two civilizations. In Turkish communities, it is often linked with luck and completion; in Uzbek culture, it resonates with spiritual meaning linked with traditional stories and folklore. Such cultural interpretations help to define how people see and use numbers in everyday life, rituals, and celebrations, therefore increasing their social functions.

Furthermore, the digital vocabulary of Turkish and Uzbek reflects the aims and values of every business rather than just a list of leaders. Certain numbers often call for certain historical narratives that highlight previous events and help to shape modern identities by means of knowledge. For instance, the ‘forty’ number is important in the two civilizations, connected with endurance and transition ideas, although linked tales vary by stressing traditions and local events (Kholmatova, 2025). This junction of numerology and culture shows how the use of numbers surpasses mere quantification, profoundly linked with the identity and common experiences of the societies.

Furthermore clarifying the complexity of the figures in both languages and stressing the way speakers see and interpret them in their cultural frames are the cognitive points of view. Agostini et al. (2021) contend that language structures and the cultural environment greatly influence digital cognition; it is not homogenous everywhere. Cognitive research indicates that, depending on cultural familiarity and contextual usage, figures may generate different interpretations that affect both computation procedures and cognitive representations of amounts. Research shows, for instance, that language speakers with complex morphological structures – such as Turkish – can use many approaches when processing numbers depending on the morphological affixes connected with them, therefore permitting a greater spectrum of interpretations.

Karimova (2024) highlights that the cognitive handling of numbers also interacts with cultural scripts, in which certain numbers might set culturally distinct patterns of thinking. Rituals around birth, marriage, and death clearly show this interplay wherein certain figures are not just symbolic but also frequently loaded with societal expectations and meanings. Thus, the cognitive charge connected with the perception of these figures might vary greatly depending on more general cultural narratives that define the meaning and understanding connected with them.

All things considered, the complex interplay of cultural meaning and cognitive strategies of the figures in Turkish and Uzbek settings exposes how strongly these components are fixed in the language tissue of every civilization. Appreciating the larger consequences depends on an awareness of this link; digital lexicons help to communicate cultural values, identity, and social institutions. A comparative study of language structures connected with Turkish and Uzbek numbers reveals amazing differences and similarities in their syntax, morphology, and semantics, each contributing to unique numerical representation systems reflecting the cognitive and cultural settings of speakers.

Numbers are represented mostly in both languages using a mix of cardinal and ordinal forms under separate morphological guidelines. Turkish, of the Oghuz branch of Turkish languages, has a quite straightforward morphological structure for numbers. Cardinal numbers have a definite foundation derivation pattern; for instance, the numeral "BİR" creates the basis

for higher numbers by means of methodical addition and composition ideas. In Turkish, where numerals like *on beş* (fifteen) stem from *on* (ten) + *beş*, the composition of the numbers is very clear.

Conversely, Uzbek, housed in the Karluk company of Turkish languages, has a somewhat more complicated morphological structure for number expressions. Uzbek numbers likewise rely on a base derivation system; however, historical interactions clearly show effects of Persian and Russian. For instance, although Turkish *bir* matches *bitta* in Uzbek, the way numbers mix might vary, especially in higher numerical forms. Notably in the intricate construction of tens and hundreds, as seen in *Yigirma Besh* (twenty-five), the Uzbek numeral system employs native roots and borrowed components, notably in terms of lexical words mixed with an exclusive construction.

Analyzing numerical expressions in both languages adds yet another level of complexity to the syntax. In Turkish uses an object-object structure (SOV), which influences the way the numbers are combined into bigger syntactic constructions. Semantic interpretation and its connection with surrounding noun phrases are typically influenced by numerical position. For instance, in sentences like *üç elma var* (there are three apples), the number expression comes before the noun, therefore preserving coherence and meaning.

Although Uzbek grammar generally follows an SOV pattern, the effect of changing sentences and possessive structures causes variances in the numerical arrangement. In a sentence like *Mening uch kitobim bor* (I have three books), the numerical affirms the possessive element more than in its Turkish equivalent. This syntactic orientation captures cognitive attitudes regarding property and quantification, hence adding significance to basic number statements.

Semantically, both languages have significant cultural connotations connected with numbers, which greatly influences interpretive frameworks. Turkish numerals have historical and cultural implications that remain via idioms and proverbs, therefore impacting the usage of common language as provided by Rasulov (2023) and Zhalmakhanov & Salkynbay (2022). For instance, the number ‘seven’ in both languages has philosophical connotations usually connected with spirituality and folklore, therefore reflecting similar Turkish cultural aspects.

Uzbek speakers, on the other hand, could show unique numerical interpretations influenced by Islamic traditions, which respect certain numbers above simple count. This captures a cognitive quality that goes beyond numerical expressions' philosophical weight based on mathematical applications.

In essence, the language patterns seen in Turkish and Uzbek expose common Turkish traits as well as unique cultural modifications. Not only does the interplay of syntax, morphology, and semantics show itself in formal structures, but cultural cognition greatly influences them as well. These levels of complexity provide a rich terrain to grasp the nature of numerical semantics within these two linked but distinct language traditions.

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