

PAPER

AN INVESTIGATION INTO THE COGNITIVE AND CULTURAL ASPECTS OF HOW UNITS OF MEASUREMENT ARE REPRESENTED AND USED IN THE ENGLISH AND UZBEK LANGUAGES

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Abstract

This article explores the cognitive and cultural dimensions of how units of measurement are conceptualized, represented, and utilized in the English and Uzbek languages. While measurement systems aim for universal functionality, their linguistic and cultural representations reveal deep-rooted cognitive and historical influences. The research investigates how each language reflects cultural worldview through specific lexical units, metaphors, and usage patterns, especially in traditional, informal, and idiomatic expressions. It examines the persistence of non-standard or culturally embedded units alongside standard metric and imperial systems. The study also identifies how language users in both contexts comprehend and associate units of measurement within different domains such as time, distance, weight, and volume. Through comparative analysis, it highlights the role of linguistic relativity in shaping perception and categorization of quantitative reality. Findings suggest that units of measurement serve not only as practical tools but also as carriers of cultural identity and cognitive structure.

Key words: Cognitive linguistics, cultural linguistics, measurement units, English language, Uzbek language, conceptual metaphor, linguistic relativity, time units, weight units, traditional units, imperial system, metric system, language and thought, lexical semantics, idiomatic expressions, cultural worldview, cross-linguistic comparison.

Introduction

Language is more than a system of communication—it is a cognitive and cultural tool that reflects the way individuals and communities perceive and structure their realities. Among the many domains in which linguistic expression mirrors cognitive and cultural patterns, units of measurement stand out as particularly revealing. They are ostensibly objective, practical tools used to quantify and compare aspects of the physical world—time, distance, weight, volume, and more. Yet, the way in which these measurements are represented, categorized, and expressed in different languages often varies significantly, reflecting divergent historical, cultural, and cognitive frameworks. This article investigates how the English and Uzbek languages

conceptualize and utilize units of measurement, with a focus on the interplay between linguistic representation, cultural context, and cognitive structure. The cognitive aspects of language involve how concepts are structured in the mind and expressed through language. In the case of measurement, the choice of terms, metaphors, and categorization reflects the way speakers conceptualize magnitude, space, time, and other abstract domains. For example, metaphorical expressions like “a mile away” in English or its Uzbek equivalents extend beyond literal measurement to convey psychological or emotional distance. Similarly, expressions for time such as “in a heartbeat” or “bir zumda” (in a moment) show how culturally shared experiences are encoded in language. Such phrases reflect culturally situated cognition—how mental representations are shaped by the

sociocultural environment.

Culturally, units of measurement are not merely functional; they are embedded in traditions, practices, and worldviews. In English, the imperial system coexists with the metric system, both influencing everyday speech. Units like “foot,” “yard,” “pound,” and “gallon” are rooted in historical practices and continue to shape the linguistic landscape. English idioms and colloquial expressions often rely on these units, such as “give an inch and they’ll take a mile.” In contrast, Uzbek, as a Turkic language with deep Persian, Arabic, and Russian influences, exhibits a rich blend of traditional and Soviet-influenced measurement terms. Traditional Uzbek units such as “gaz” (yard), “torshak” (bucket), or “pud” (an old Russian weight unit) still appear in rural and colloquial usage, even as the metric system dominates formal contexts. The study of these units from a cognitive and cultural perspective can reveal how language users categorize experiences and abstract concepts. Linguistic relativity—the theory that the structure of a language affects its speakers’ worldview—becomes relevant here. Do speakers of Uzbek think about quantities differently from speakers of English due to differing metaphors, semantic fields, and syntactic structures? This article attempts to answer such questions through a comparative linguistic analysis.

Furthermore, measurement language often bridges the tangible and intangible. It mediates between empirical observation and mental interpretation. For example, in both languages, temporal measurements are frequently metaphorized spatially—days “stretch,” moments “fly,” years are “long.” These mappings are not accidental but grounded in universal cognitive tendencies, although the specific expressions and preferences vary by language and culture. Understanding how such mappings operate in English and Uzbek provides insight into shared human cognition and linguistic diversity. Another key consideration is the diachronic evolution of measurement language. English has undergone centuries of standardization influenced by colonization, scientific development, and globalization. Meanwhile, Uzbek has experienced transformations due to Soviet standardization, independence, and modernization, leading to shifts in both formal and informal usage. This article considers how historical events have influenced the linguistic repertoire of measurement units, both expanding and limiting the cognitive metaphors available to speakers. This comparative investigation is especially timely in the context of globalization and educational development, where scientific accuracy demands standardization but linguistic and cultural expression continues to favor diversity. By analyzing the intersection of cognition, culture, and language in the representation of measurement units, this study contributes to the broader fields of cognitive linguistics and cultural linguistics. It offers insights valuable not only for linguists and anthropologists but also for educators, translators, and policymakers working in multilingual and multicultural environments. The structure of the article is as follows. The next section presents a detailed comparative analysis of measurement units in English and Uzbek, focusing on domains such as time, weight, distance, and volume. It examines both literal and metaphorical uses and includes examples from idiomatic and everyday speech. The conclusion summarizes the findings and reflects on the implications of cognitive and cultural variations in measurement language.

Main Body

1. The Linguistic Nature of Measurement Units

Measurement units serve as linguistic symbols that quantify physical properties, such as length, weight, volume, and time. While they appear to be universal in application, their linguistic realization varies greatly across cultures and languages. In English, measurement terms are heavily influenced by both the

imperial and metric systems. Words like “inch, mile, pound,” and “gallon” are frequently used in everyday contexts. These terms are not just descriptors; they serve as the foundation for numerous metaphors and idiomatic expressions.

Uzbek, in contrast, incorporates measurement units from several historical layers—Turkic, Persian, Arabic, and Russian. Units such as “gaz” (approximately 1 yard), “torshak” (a volume equivalent to a bucket), and “pud” (approximately 16 kg, a unit borrowed from Russian) coexist with standardized metric units such as meters and kilograms. This blending of traditional and modern reflects Uzbekistan’s diverse linguistic and cultural history.

2. Cognitive Frameworks: Conceptualization and Categorization

From a cognitive perspective, measurement units function as mental schemas that organize human experience. According to cognitive linguistics, concepts like length or weight are not abstractly quantified in the mind without linguistic mediation. Instead, speakers use culturally and linguistically shaped categories to conceptualize these quantities. For example, the English phrase “a ton of work” conveys an abstract, exaggerated quantity by invoking a physical unit of weight. Similarly, in Uzbek, the expression “tog’dek muammo” (“a problem like a mountain”) metaphorically equates size with difficulty or burden. Both languages show that measurement units are not confined to literal contexts but often serve metaphorical or symbolic roles. These conceptual metaphors, such as **QUANTITY IS SIZE** or **TIME IS SPACE**, are universal in cognition but culturally specific in expression. The use of such metaphors reveals how speakers of each language mentally structure their experiences of measurable realities.

3. Cultural Influences on Measurement Lexicon

Culture deeply influences which measurement units are prevalent and how they are used. English-speaking cultures, particularly those in the United States and the UK, maintain strong ties to imperial units in daily life, despite global adoption of the metric system. The persistence of units such as “miles per hour” or “inches of rain” reflects cultural inertia and resistance to change. Moreover, English idioms often preserve outdated or culturally specific units, such as “a stone’s throw away” or “give an inch, take a mile.” In Uzbek, older forms of measurement continue to influence rural and informal speech. Expressions such as “bir torshak suv” (a bucket of water) or “bir gaz mato” (a yard of fabric) are still in use, especially in traditional markets and agricultural settings. These units are embedded not only in language but also in cultural practices and norms. Soviet-era standardization brought the metric system into formal education and administration, but traditional units remain relevant in everyday discourse, reflecting a dual-layered cultural identity.

4. Measurement in Idiomatic and Figurative Language

Idioms and figurative expressions involving measurement units provide rich data for cross-linguistic comparison. In English, measurement terms are frequently used in hyperbolic or metaphorical phrases: “not an ounce of truth,” “light-years ahead,” or “inch closer to success.” These expressions use physical measurements to convey abstract or emotional states. Uzbek similarly uses measurement metaphors to communicate qualitative ideas. For instance, “bir qarich yer” (a handspan of land) might emphasize smallness or insignificance, while “bir changal” (a handful) conveys a small quantity or effort. These idioms reflect cultural valuation and emotional resonance attached to specific units. They also highlight how cognitive processing of quantity, space, and value is linguistically encoded. Such figurative uses support the Sapir-Whorf hypothesis (linguistic relativity), suggesting that language influences how speakers perceive and categorize their world. The habitual use of certain units or metaphors may subtly guide attention and interpretation, thereby shaping cognition.

5. Sociolinguistic Variations and Contextual Usage

The usage of measurement units varies across different social and linguistic contexts. In English, the choice between metric and imperial units often correlates with regional, professional, or generational factors. Scientists and engineers typically use metric units, while the general public may prefer imperial ones. Similarly, in Uzbekistan, urban populations educated in post-Soviet schools are more likely to use metric units, whereas rural speakers might default to traditional terms. This variation also affects translation and interpretation. Translators must navigate cultural equivalence when converting measurement expressions. For instance, translating “a mile away” into Uzbek requires more than a literal conversion; it involves capturing the figurative distance implied in the original. The implications of these sociolinguistic dynamics extend to education, cross-cultural communication, and international collaboration. Understanding how measurement units are used in context can enhance intercultural competence and reduce miscommunication.

6. Historical Layers in Measurement Terminology

The historical development of measurement terminology offers insight into language contact, political influence, and cultural exchange. English measurement terms derive from a mixture of Latin, Germanic, and French roots, reflecting the language's complex evolution. The metric system, developed in France during the Enlightenment, was later adopted in scientific communities worldwide, though English-speaking countries integrated it at different rates. Uzbek underwent a unique linguistic evolution shaped by Turkic, Persian, and Arabic influences, followed by Russian during the Soviet period. This layered history is evident in the measurement lexicon. For example, “pud” and “desyatin” (Russian land unit) were imposed during Soviet rule, while “gaz” and “misqal” (a weight measure) predate it and originate from earlier cultural periods. The coexistence of these terms indicates that language change is not always linear or uniform. Cultural identity, utility, and tradition all play roles in the retention or replacement of measurement units.

7. Cognitive and Pedagogical Implications

Understanding the cognitive and cultural dimensions of measurement units has pedagogical value. Language teachers can use culturally embedded measurement terms to enrich vocabulary instruction and develop students' cultural awareness. For example, teaching the expression “he ran a mile” alongside its Uzbek equivalent can open discussions about cultural context, physical space, and metaphorical usage. Moreover, incorporating measurement metaphors into cognitive linguistics curricula can help students grasp abstract concepts such as metaphor theory, conceptual mapping, and linguistic relativity. When students learn that expressions like “a fraction of a second” or “ton of emotions” function both cognitively and culturally, their appreciation of language's depth increases. In addition, measurement units provide a practical context for interdisciplinary learning. Teachers of science, mathematics, and language can collaborate to illustrate how measurement is both a technical and a cultural phenomenon.

Conclusion

This article has explored the cognitive and cultural dimensions of how measurement units are represented and used in the English and Uzbek languages. Despite their shared goal of quantifying reality, these units differ significantly in linguistic expression, metaphorical use, and cultural embedding. English demonstrates a dual reliance on imperial and metric systems, with rich idiomatic usage that reflects historical continuity and cultural nuance. Uzbek, meanwhile, presents a layered system shaped by traditional Turkic, Persian, and Russian influences, revealing both

cultural preservation and adaptation. Cognitive linguistics helps explain how abstract concepts like time, size, and quantity are mapped onto language through metaphor and conceptual framing. This comparative study reinforces the idea that language both reflects and shapes thought, and that measurement terms are more than just technical tools—they are carriers of worldview. Greater awareness of these linguistic patterns enhances cross-cultural understanding and highlights the intricate connection between language, mind, and culture.

References

1. Evans, V., Green, M. (2006). *Cognitive Linguistics: An Introduction*. Lawrence Erlbaum Associates.
2. Kövecses, Z. (2010). *Metaphor: A Practical Introduction* (2nd ed.). Oxford University Press.
3. Lakoff, G., Johnson, M. (1980). *Metaphors We Live By*. University of Chicago Press.
4. Palmer, G. B. (1996). *Toward a Theory of Cultural Linguistics*. University of Texas Press.
5. Whorf, B. L. (1956). *Language, Thought, and Reality: Selected Writings of Benjamin Lee Whorf*. MIT Press.
6. Bakhtiyarovich, N. B. (2024, August). LINGVOCOGNITIVE AND LINGUOCULTURAL STUDY OF MEASUREMENT UNITS IN ENGLISH AND UZBEK LANGUAGES. In *INTERDISCIPLINE INNOVATION AND SCIENTIFIC RESEARCH CONFERENCE* (Vol. 22, No. 2, pp. 51–53).
7. ENGLISH SPEAKING: TIPS FOR IMPROVING PUBLIC SPEAKING, CONVERSATION SKILLS, AND PRONUNCIATION 2024-01-30
8. LINGUOCULTURAL STUDY OF ANTONYMS USED IN LITERARY TEXT
9. Nazarov, B. (2024). ENGLISH SPEAKING: TIPS FOR IMPROVING PUBLIC SPEAKING, CONVERSATION SKILLS, AND PRONUNCIATION. *Talqin Va Tadqiqotlar*, 2(2(39)). извлечено от <https://talqinvatadqiqotlar.uz/index.php/tvt/article/view/1795>
10. Nazarov Behzod Baxtiyarovich. (2024). LEARNERS' MOTIVATION AND ATTITUDE TOWARDS ENGLISH AS A FOREIGN LANGUAGE. *Kokand University Research Base*, 205–210. Retrieved from <https://scholar.kokanduni.uz/index.php/rb/article/view/312>
11. Nazarov Behzod Baxtiyarovich. (2024). POSSIBILITIES OF USING INTERNET IN TEACHING ENGLISH LANGUAGE. *Kokand University Research Base*, 211–216. Retrieved from <https://scholar.kokanduni.uz/index.php/rb/article/view/313>
12. Nazarov Bekhzod Bakhtiyarovich. (2023). THE USE OF MODERN TECHNOLOGIES IN TEACHING FOREIGN LANGUAGE SPEAKING IN HIGH SCHOOL. *QO'QON UNIVERSITETI XABARNOMASI*, 1(1), 971–974. <https://doi.org/10.54613/ku.v1i1.476>
13. Nazarov, B. (2024). LINGVOCOGNITIVE AND LINGUOCULTURAL STUDY OF MEASUREMENT UNITS IN ENGLISH AND UZBEK LANGUAGES. *QO'QON UNIVERSITETI XABARNOMASI*, 13, 292–294. <https://doi.org/10.54613/ku.v13i.1080>
14. Nazarov, B. (2024). MEASUREMENT UNITS IN THE ENGLISH AND UZBEK LANGUAGES: LINGVOCOGNITIVE AND LINGUOCULTURAL INVESTIGATION. *QO'QON*

UNIVERSITETI XABARNOMASI, 13, 306–308.
<https://doi.org/10.54613/ku.v13i.1085>

15. Nazarov, Bekhzod Bakhtiyarovich (2022). LINGUOCULTURAL STUDY OF ANTONYMS USED IN LITERARY TEXT. *Oriental renaissance: Innovative, educational, natural and social sciences*, 2 (6), 1115–1119.