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ETHNOLINGUISTIC FEATURES OF TRADITIONAL UZBEK MEASUREMENT SYSTEMS AND THEIR CONCEPTUAL REFLECTION OF REALITY

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Abstract

This article examines the ethnolinguistic characteristics of traditional Uzbek measurement systems and their role in conceptualizing reality. The study analyzes how indigenous measurement units reflect the worldview, cultural practices, and cognitive patterns of the Uzbek people. Through ethnographic and linguistic analysis, the research demonstrates that traditional measurement systems are not merely practical tools but complex cultural constructs that embody historical experience, environmental adaptation, and social relations. The article explores various categories of traditional measurements including length, weight, volume, time, and their metaphorical extensions in the Uzbek language and culture.

Keywords

ethnolinguistics, traditional measurements, Uzbek culture, conceptualization, linguistic worldview, folk metrology

Introduction. Traditional measurement systems represent a significant component of any culture's ethnolinguistic heritage, serving as cognitive tools through which communities organize and interpret their physical and social environment. The Uzbek people, with their rich history as traders, farmers, and craftsmen along the Silk Road, developed sophisticated measurement systems that reflect both practical needs and deeper cultural values. These indigenous units of measurement, while largely replaced by the metric system in official contexts, continue to exist in everyday speech, proverbs, and traditional practices, preserving unique ways of perceiving and categorizing reality.

The study of traditional measurement systems from an ethnolinguistic perspective reveals how language and culture interact to create meaningful frameworks for understanding the world. As Sapir and Whorf suggested in their linguistic relativity hypothesis, the categories embedded in language influence how speakers perceive and think about reality. Traditional Uzbek measurements

exemplify this principle, demonstrating how culturally specific units encode particular ways of experiencing space, time, quantity, and quality.

This research aims to document and analyze the ethnolinguistic features of traditional Uzbek measurement systems, examining how these units reflect environmental conditions, social structures, economic activities, and philosophical concepts. By investigating the semantic fields, etymologies, and contextual uses of traditional measurement terms, this study contributes to understanding the Uzbek linguistic worldview and the processes of cultural conceptualization. Furthermore, this investigation highlights the importance of preserving ethnolinguistic knowledge in an era of globalization and standardization.

Traditional Linear Measurements and Spatial Conceptualization

Linear measurements in traditional Uzbek culture were predominantly anthropomorphic, based on human body parts and human-scale activities. The most fundamental unit was the **qarich** (span), measuring the distance from the tip of the thumb to the tip of the little finger when the hand is fully extended, approximately 20-23 centimeters. This unit reflects the primacy of human physical experience in organizing spatial reality. The qarich was not merely a measurement tool but a cognitive reference point, as evidenced by expressions like "bir qarich yer" (a span of land), which metaphorically refers to a small but significant portion of territory.

Another essential linear unit was the **gaz** (yard or cubit), typically measured from the elbow to the tip of the middle finger, approximately 70-75 centimeters. The gaz held particular importance in textile trade and construction, domains central to Uzbek economic life. Interestingly, the term "gaz" also appears in Persian and other Central Asian languages, reflecting historical commercial and cultural exchanges. The standardization of the gaz varied by region and trade guild, demonstrating how measurement systems adapted to local practices while maintaining conceptual consistency.

The **qadam** (step or pace) represented a larger linear unit, approximately 70-80 centimeters, based on an adult's walking stride. This measurement connected spatial perception to human movement and kinesthetic experience. The qadam appears frequently in traditional route descriptions and land measurements, as in "ming qadam narida" (a thousand steps away), which conveys not just distance but the experiential quality of traversing space. This unit illustrates how traditional measurements embedded temporal and physical effort into spatial concepts, creating a more holistic understanding of distance than abstract metric units provide.

Longer distances were measured by the **chaqirim** or **farsakh** (parasang), representing the distance a person could walk in one hour, approximately 5-6 kilometers. This unit explicitly connected space and time, reflecting the integrated nature of these dimensions in traditional thought. The chaqirim demonstrates how measurement systems encoded practical knowledge about travel, trade routes, and territorial extent. In contemporary Uzbek, the term survives primarily in literary and historical contexts, but its conceptual framework—linking distance to experiential time—remains embedded in spatial cognition.

The ethnolinguistic significance of these anthropomorphic measurements extends beyond their practical utility. By grounding spatial concepts in human bodily experience, traditional Uzbek measurements created an intimate, human-centered understanding of the environment. This contrasts sharply with the abstract, universal orientation of the metric system. The body-based measurements reflect a worldview in which humans are the measure of all things, a philosophical position with deep roots in Islamic and pre-Islamic Central Asian thought.

Weight and Volume Measurements in Economic and Social Contexts

Traditional Uzbek weight measurements reveal sophisticated understanding of material properties and economic relations. The **pud** (approximately 16.38 kilograms) served as a standard unit for heavy goods, particularly grain, cotton, and metals. Borrowed from Russian during the 19th century, the pud became fully integrated into Uzbek commercial vocabulary, demonstrating the adaptive nature of measurement systems. However, indigenous units persisted alongside borrowed terms, creating a layered metrology that reflected diverse cultural influences.

The **batman** (approximately 2.5-3 kilograms) represented a medium-weight unit used primarily for foodstuffs and household goods. The term derives from Persian and appears throughout Central Asian languages, indicating shared commercial culture across the region. Interestingly, the batman was not uniformly standardized; its exact weight varied by commodity and locality, reflecting a contextual approach to measurement where the nature of the material being measured influenced the measurement system itself. This flexibility contrasts with modern standardization but reveals a nuanced understanding of different materials' properties.

For lighter goods, particularly spices, medicines, and precious materials, the **misqol** (approximately 4.5 grams) served as the standard unit. This term, derived from Arabic, reflects the historical importance of Islamic scientific and commercial practices in Central Asia. The misqol connected Uzbek measurement practices to broader Islamic civilization, where standardized weights facilitated trade across vast territories. In traditional pharmacy and jewelry making, the misqol remained

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the preferred unit well into the 20th century, demonstrating the persistence of specialized professional measurement systems.

Volume measurements for dry goods centered on the **chorak** (approximately 7-8 liters), used primarily for grain. The term literally means "quarter" in Uzbek, suggesting derivation from a larger base unit, likely the **pud** in volumetric terms. This etymological connection illustrates how measurement systems formed coherent conceptual networks rather than isolated units. The chorak appears frequently in traditional agricultural contexts and folk narratives, where it represents not just a specific volume but the concept of sufficiency—as in the expression "chorak bug'doy bilan bir yil yashash mumkin" (one can live a year with a chorak of wheat), which conveys both practical measurement and cultural values regarding subsistence and moderation.

For liquids, the **choynak** (teapot) and **piyola** (cup) served as informal but widely understood units. These container-based measurements reflect the central role of tea culture in Uzbek social life. While not precisely standardized, these units were sufficiently consistent within communities to facilitate everyday transactions. More significantly, they demonstrate how measurement systems embed social practices; the piyola, for instance, carries connotations of hospitality, social bonding, and proper behavior, extending its meaning far beyond simple volumetric measurement.

The ethnolinguistic analysis of weight and volume terms reveals how measurement systems encode economic structures and social values. The variety of units for different commodities reflects specialized knowledge about material properties, trade practices, and quality assessment. Furthermore, the semantic fields surrounding these terms—including verbs of measuring, weighing, and comparing—constitute a rich vocabulary for discussing fairness, value, and exchange, fundamental concepts in any commercial society.

Temporal Measurements and Cyclical Time Concepts. Traditional Uzbek temporal measurements reflect an understanding of time as cyclical rather than linear, closely tied to natural phenomena and agricultural cycles. While modern standardized time units (seconds, minutes, hours) are now universally used, traditional temporal concepts persist in language and cultural practices, revealing alternative ways of conceptualizing duration and sequence.

The agricultural calendar provided the fundamental framework for annual time reckoning. Seasons were divided into specific periods marked by agricultural activities: **ekin vaqti** (planting time), **o'rim vaqti** (harvest time), and **qishloq tinchlik vaqti** (village rest time). These periods varied in absolute duration depending on weather and climate but represented consistent conceptual divisions

of the year. This agricultural temporality embedded human activities within natural cycles, creating a time system responsive to environmental conditions rather than abstract mathematical divisions.

Daily time was traditionally divided according to the five Islamic prayer times: **bomdod** (dawn), **peshin** (noon), **asr** (afternoon), **shom** (sunset), and **xufton** (night). These divisions created a temporal structure synchronized with solar movement and religious practice. Significantly, the exact clock time of these periods shifted daily with the sun's position, making traditional daily time inherently variable and connected to celestial phenomena. This contrasts sharply with the fixed hours of modern timekeeping, reflecting different conceptualizations of temporal regularity and human relationship to cosmic order.

For measuring shorter durations, traditional expressions relied on experiential benchmarks rather than precise units. **Choydek vaqt** (tea-time, approximately 15-20 minutes) referred to the time needed to brew and drink tea, embedding temporal measurement in social ritual. **Bir namoz vaqti** (one prayer time, approximately 30-40 minutes) connected duration to religious practice. **Sut sog'ish vaqti** (milking time, approximately 20-30 minutes) linked temporal measurement to pastoral activities. These units demonstrate how traditional time concepts integrated multiple domains of experience—social, religious, economic—into a holistic temporal framework.

The concept of **payt** (moment, occasion, appropriate time) deserves special attention for its ethnolinguistic significance. Unlike clock time, which treats all moments as equivalent, payt refers to qualitatively distinct temporal occasions, each with specific characteristics and appropriate activities. The expression "har narsaning o'z payti bor" (everything has its proper time) encapsulates a worldview in which time is not a neutral container but a structured medium with inherent qualities. This concept of kairological time—time as meaningful occasion—contrasts with chronological time and reflects a philosophical orientation toward temporal experience.

Cyclical temporal concepts are particularly evident in traditional expressions and proverbs. **Yil kelsa boshi, kun kelsa tushi** (when the year comes, its head; when the day comes, its noon) suggests that time cycles have inherent structure and significance. **Qish qor ko'rsa, yoz qor ko'rmaydi** (if winter sees snow, summer won't see snow) reflects understanding of seasonal complementarity and temporal balance. These expressions demonstrate how temporal concepts carry metaphysical and ethical dimensions, embedding time measurement within broader cultural meaning systems.

Metaphorical Extensions and Cognitive Patterns. The influence of traditional measurement systems extends far beyond literal quantification into the metaphorical and conceptual domains of Uzbek language and thought. Measurement terms frequently appear in figurative expressions, proverbs, and conceptual metaphors, revealing how these units structure abstract thinking about relationships, qualities, and values.

Anthropomorphic linear measurements commonly metaphorize closeness, accessibility, and relationship quality. **Bir qarich masofa** (a span's distance) suggests proximity, intimacy, or easy attainability, as in "muvaffaqiyatgacha bir qarich qoldi" (success is just a span away). Conversely, **ming qadam narida** (a thousand steps away) connotes distance, difficulty, or separation, both physical and emotional. These metaphorical extensions demonstrate how spatial measurement concepts structure social and psychological understanding.

Weight measurements frequently metaphorize importance, burden, and value. **Og'ir gaplar** (heavy words) refers to serious, consequential speech. **Bir misqol sabr** (a misqol of patience) suggests the preciousness and scarcity of this virtue, conceptualizing abstract qualities through concrete measurement. **Pud-pud yuk** (pud after pud of load) describes accumulating responsibilities or problems, using weight measurement to conceptualize psychological and social burdens. These metaphors reveal how material measurement concepts transfer to abstract domains, providing concrete frameworks for discussing intangible experiences.

Temporal measurement metaphors often involve agricultural and natural cycles, reflecting traditional lifestyle patterns. **Ekin ekib o'rmagan kishi** (a person who hasn't planted and harvested) describes someone lacking life experience, using agricultural temporality to conceptualize maturity. **Bahorda ekilmaganini kuzda o'rib bo'lmaydi** (what isn't planted in spring cannot be harvested in autumn) uses seasonal cycles to express causality and consequence in human affairs. These metaphors demonstrate how temporal measurement concepts extend to ethical and philosophical domains.

Measurement-based conceptual metaphors also structure understanding of abstract concepts like justice, fairness, and balance. The verb **o'lchash** (to measure) extends metaphorically to mean "to consider," "to evaluate," or "to be moderate," as in **o'lchab gap gapir** (speak with measurement, i.e., speak carefully). The concept of **muvozanat** (balance, equilibrium), while expressed through a general term, operationalizes through traditional measurement practices like using balance scales, where visual equality of weight provides a concrete model for abstract fairness.

The ethnolinguistic significance of these metaphorical extensions lies in their demonstration of embodied cognition—how abstract thought builds upon concrete, bodily, and practical experiences. Traditional Uzbek measurement systems, grounded in human physical experience and practical activities, provide cognitive scaffolding for understanding abstract domains. This pattern aligns with broader cognitive linguistic theories of metaphor and suggests that preserving traditional measurement concepts maintains not just linguistic diversity but cognitive diversity—different ways of thinking about and organizing experience.

Conclusion and Cultural Implications. The examination of traditional Uzbek measurement systems from an ethnolinguistic perspective reveals these systems as complex cultural constructs that extend far beyond practical quantification. Traditional measurements encode worldviews, reflect environmental adaptations, structure social relations, and provide cognitive frameworks for conceptualizing both concrete and abstract reality. The anthropomorphic nature of linear measurements, the contextual flexibility of weight and volume units, the cyclical orientation of temporal concepts, and the rich metaphorical extensions of measurement terms all demonstrate how language and culture interact to create meaningful systems of understanding.

Several significant patterns emerge from this analysis. First, traditional Uzbek measurements are fundamentally human-centered, grounded in bodily experience and scaled to human activities. This creates an intimate, experiential relationship with the environment, contrasting with the abstract universalism of metric systems. Second, these measurements are contextually adaptive rather than rigidly standardized, reflecting a worldview that values situated knowledge and local variation. Third, traditional measurements integrate multiple domains of experience—physical, temporal, social, economic, religious—into holistic frameworks rather than treating these as separate spheres.

The metaphorical productivity of measurement terms reveals their cognitive importance. By providing concrete frameworks for abstract thought, traditional measurements shape how Uzbek speakers conceptualize relationships, values, and qualities. The semantic fields surrounding measurement terms constitute rich vocabularies for discussing fundamental human concerns like fairness, sufficiency, proximity, and appropriateness. This cognitive function persists even as literal measurement practices change, suggesting deep embedding of these conceptual patterns in linguistic and cultural cognition.

From a cultural preservation perspective, documenting traditional measurement systems serves multiple purposes. It preserves historical and ethnographic knowledge about past lifeways and practices. It maintains linguistic

diversity by recording specialized vocabularies and semantic networks. It contributes to cognitive and philosophical anthropology by revealing alternative ways of conceptualizing fundamental aspects of experience. Moreover, it provides resources for cultural education and identity maintenance in communities experiencing rapid modernization and globalization.

However, preservation efforts must recognize the dynamic nature of measurement systems. Traditional and modern systems coexist in contemporary Uzbek usage, with speakers fluidly moving between them according to context. Younger generations may use metric units for precise scientific or commercial purposes while employing traditional terms in everyday speech, proverbs, and cultural practices. This layered metrology reflects cultural resilience and adaptation rather than simple replacement or loss.

Future research should expand this analysis to include comparative studies with other Central Asian measurement systems, examining regional variations within Uzbekistan, investigating generational differences in measurement term usage, and exploring how traditional measurement concepts influence modern scientific and mathematical education. Additionally, studies of gender-specific measurement practices, professional specialized measurement vocabularies, and the role of measurement concepts in traditional poetry and literature would enrich understanding of these systems' cultural significance.

In conclusion, traditional Uzbek measurement systems represent valuable ethnolinguistic heritage that illuminates fundamental aspects of Uzbek culture, cognition, and worldview. Their study contributes to broader understanding of how language and culture interact to create meaningful frameworks for experiencing and interpreting reality. As globalization promotes standardization and uniformity, preserving knowledge of traditional measurement systems maintains cognitive and cultural diversity, ensuring that multiple ways of conceptualizing the world remain available to future generations. This diversity constitutes not merely historical curiosity but living cognitive resources that enrich human understanding of the varied ways existence can be measured, experienced, and understood.

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