

Cognitive and Cultural Functions of Numerical Symbolism

Rejapov Izzatbek Olimbayevich

izzatbekrio@gmail.com

PhD,

Mamun university

Annotation

This article investigates the dual role of numerical units as both quantitative measures and culturally significant symbols within linguistic and national frameworks. Numbers transcend their mathematical utility, embodying sacred and metaphysical connotations that reflect the cognitive structures and value systems of various cultures. The research synthesizes historical, philosophical, and ethnolinguistic perspectives on numerical symbolism, drawing on examples from ancient civilizations such as Babylon, Greece, and China. It emphasizes the role of numbers in structuring cosmological concepts, ritual practices, and classificatory systems. By analyzing the symbolic functions of numbers in language, folklore, and social organization, the study highlights their integrative role in mediating between empirical reality and cultural ideology. The findings contribute to interdisciplinary understanding in fields such as cognitive linguistics, anthropology, and the history of science, underscoring the importance of numerical cognition as a foundational element in human knowledge systems and cultural identity formation. Thus, numbers are interpreted not only as tools of measurement but also as culturally embedded symbols that preserve and transmit collective meanings.

Key words

Numerical symbolism, sacred numbers, cultural cognition, linguistic units, metaphysical meaning, cultural identity, numerology, ancient civilizations, cognitive linguistics, ritual practices

Когнитивные и культурные функции числовой символики

Режапов Иzzатбек Олимбаевич

izzatbekrio@gmail.com

PhD,

Университет Мамуна

Аннотация

В данной статье исследуется не только функция чисел как количественной меры, но и двойственная роль числовых единиц – как количественного измерителя и культурно значимого символа – в языковых и национальных контекстах. Числа выходят за пределы своего математического применения, приобретая сакральные и метафизические значения, отражающие сложные когнитивные структуры и системы ценностей различных культур. Исследование основывается на богатых исторических примерах из древних цивилизаций – Вавилона, Греции и Китая – и глубоко анализирует исторические, философские и этнолингвистические аспекты числовой символики. В статье особо подчеркивается роль чисел в формировании космологических представлений, религиозно-ритуальных практик и классификационных систем. Анализ символических функций чисел в языке, фольклоре и социальных структурах раскрывает их интегративную роль посредника между эмпирической реальностью и культурной идеологией. Полученные

результаты могут быть применены в таких областях, как когнитивная лингвистика, антропология и история науки, демонстрируя числовое мышление как фундаментальный элемент систем человеческих знаний и формирования культурной идентичности. Таким образом, числа рассматриваются не только как инструмент измерения, но и как культурно укоренённые символы, сохраняющие и передающие коллективные значения.

Ключевые слова

Числовая символика, сакральные числа, культурное познание, лингвистические единицы, метафизическое значение, культурная идентичность, нумерология, древние цивилизации, когнитивная лингвистика, ритуальные практики

Sonlar ramziyligining kognitiv va madaniy xususiyatlari

Rejapov Izzatbek Olimbayevich

izzatbekrio@gmail.com

PhD,

Mamun universiteti

Annotatsiya

Ushbu maqola sonlarning nafaqat kvantitativ o'lchov vositasi sifatidagi, balki son birliklarining ikki tomonlama – miqdoriy o'lchov vositasi va madaniy ahamiyatga ega ramz sifatidagi – rolini til va milliy kontekstlarda atroflicha o'rganadi. Sonlar o'zining matematik qo'llanish chegarasidan chiqib, turli madaniyatlarning murakkab kognitiv tuzilmalari va qadriyat tizimlarini aks ettiruvchi muqaddas hamda metafizik ma'nolarga ega bo'ladi. Tadqiqotda Bobil, Yunoniston va Xitoy kabi qadimiy sivilizatsiyalardan olingan boy tarixiy misollar asosida sonlar ramziyligining tarixiy, falsafiy va etnolingvistik jihatlar chuqur tahlil qilinadi. Maqolada sonlarning kosmologik tushunchalarni, diniy-marosim amaliyotlarini va tasniflash tizimlarini shakllantirishdagi o'rne alohida ta'kidlanadi. Til, folklor va ijtimoiy tuzilmalardagi sonlarning ramziy funksiyalarini tahlil qilish orqali tadqiqot ularning empirik reallik va madaniy mafkura o'rtasida vositachilik qiluvchi integrativ rolini keng yoritadi. Topilmalar kognitiv lingvistik, antropologiya va fanlar tarixining turli sohalarida qo'llanilishi mumkin bo'lib, sonli tafakkurni inson bilim tizimlari va madaniy identitet shakllanishining asosiy elementi sifatida namoyon etadi. Shunday qilib, sonlar nafaqat o'lchov vositasi, balki jamoviy ma'nolarni saqlab va uzatib keluvchi madaniy jihatdan singdirilgan ramzlar sifatida ham talqin qilinadi.

Kalit so'zlar

Sonlar ramziyligi, muqaddas sonlar, madaniy idrok, lingvistik birliklar, metafizik ma'no, madaniy identitet, numerologiya, qadimiy sivilizatsiyalar, kognitiv lingvistik, marosim amaliyotlari

A special place among the fundamental national-cultural components that shape a society's conceptual world picture is occupied

by linguistic units denoting numbers. Numerical terms are not merely mathematical symbols; they often carry culturally embedded

meanings, historical connotations, and symbolic associations that reflect the worldview and value systems of a particular linguistic community. Their usage in language, folklore, rituals, and everyday expressions underscores their role as both cognitive and cultural constructs. As such, the study of number-related units provides valuable insights into the interplay between language, cognition, and national-cultural identity. "Numbers do not rule the world, but they show how the world is ruled," wrote Johann Wolfgang Goethe (Goethe, 1957).

In addition to the ordinary numbers employed in everyday speech for purposes such as enumeration, ordering, and basic counting, many cultures also recognize a class of numbers regarded as "sacred". These numbers possess symbolic and often metaphysical significance, extending beyond their quantitative function. Sacred numbers are imbued with cultural, religious, or philosophical meaning and are frequently perceived as having a "magical" or transcendent quality. This article explores the concept of sacred numbers, their origins, functions, and roles within various cultural and spiritual systems.

The term "sacred" (from the Latin "sacrum") refers to that which is associated with the divine, religious ritual, or the veneration of culturally significant ideals. Related concepts include "sacramental" – denoting what is sanctified, holy, or revered. In cultural and theological contexts, the sacred is traditionally contrasted with the secular or profane – that is, the mundane, everyday world. What is designated as sacred commands unconditional reverence and is typically preserved, protected, and ritualized through various societal mechanisms.

Within many philosophical and aesthetic traditions, number is viewed not only as a tool of measurement but also as a fundamental principle of cosmic order and proportionality. In disciplines such as architecture, visual arts, music, and poetry, numerical structures serve as foundational elements that convey harmony,

rhythm, and balance. Thus, numbers function both quantitatively and qualitatively, serving as carriers of symbolic meaning that reflect deeper structures of thought and belief within a given culture.

"Everything is arranged according to numbers," said Pythagoras. Pythagoras' numbers have both quantitative and qualitative features. In the interaction of even and odd numbers, Pythagoras saw the action of the universal principle of the unity of opposites: finite and infinite, straight and curved, square and round. For Plato, numbers are the "harmony of the Universe." For Aristotle, number was the beginning and essence of things, their interaction and state. "Sacrifices to the heavenly gods are odd numbers, and to the earthly gods – even," wrote Plutarch. In a word, the greatest mathematicians and philosophers of Ancient Babylon, Ancient Greece and, later, India believed that numbers can demonstrate the principles on which the universe is based, as well as the laws of time and space.

Numerical values have long served as a foundation in music, poetry, architecture, and art. The concept of numbers possessing sacred qualities and relationships emerged in early human societies, as primitive tribes utilized numerical systems. Throughout history, certain specific, significant, and symbolic numbers with unique meanings have played a critical role in the evolution of civilization and spiritual culture, spanning archaic, ancient, medieval, and modern times. Whether knowingly or unknowingly, we tend to follow numerical symbolism: an odd count of flowers in a bouquet, a dining set for six or twelve individuals, and repeating actions three times. Each single-digit numeral is linked with specific traits, concepts, and imagery. Numerical values are utilized in assessing an individual to identify traits, inherent talents, advantages and disadvantages, forecast what lies ahead, select the ideal location for residence, and find the most opportune moments for decision-making and taking action.

Through the use of numbers, people throughout history not only grasped the surrounding world, encompassing both the micro- and macrocosm, but also abstractly represented its structure and the laws governing existence, as well as identified their own position, role, and actions within it. Numbers held a significant influence in rituals, religious ceremonies, folklore, and ancient literary works. They were revered and attributed with magical characteristics. Scholars suggest that this reverence for numbers, which is typical of all mythological traditions, stems from the idea that "numbers and counting were sacred methods," meaning that through numbers, the "organization of the cosmos and the guidelines for human navigation within it were replicated" (Toporov, 1981).

In Babylon, Egypt, and the Roman Empire, comprehensive systems of sacred numbers were created and utilized. The most advanced form of this mystical-philosophical exploration of the sacred significance of numbers can be found among the Pythagoreans in Greece. In their cosmological theories, numbers were viewed as the fundamental idea, seen as a combination of the finite and the infinite, representing the divine origin within the world, the underlying principle of all existence, and the essence of the soul itself. Consequently, there arose a belief in the enigmatic and mystical significance of numbers, along with the symbolic meanings tied to numerical relationships.

In traditional China, the meaning of numbers is rooted in three core values: 2, 3, and their collective total, 5, which was recognized as early as 510 BC. An ancient Chinese text states: "From birth, things are defined by duality, trinity, quintuplicity." In this context, these figures are associated with the primary ontological triad: humanity, heaven, and earth (humans are dual, possessing the left and right sides of the body; heaven is represented as a trinity with three reference points – the sun, moon, and constellations; earth is quintuplic as it comprises five elements). The necessity of the

numbers 2, 3, and 5 (along with 1) is clear for basic counting tasks. For instance, coins of these values are adequate for various trade transactions. Similarly, in ancient Babylon, these same numbers were utilized for calculations.

In Christian medieval culture, numbers and the sacredness of numbers were interpreted differently. The main source for Christian symbolism of numbers was the Bible, where various numerical indicators were present in abundance. The most commonly used numbers were 3, 4, 5, 7 and their multiples 10, 12, 30, 40, 50, 70, 100. Three was considered the number of the Divine Trinity, symbolizing everything spiritual (three annual holidays bequeathed to Moses on Sinai, the resurrection of Christ on the third day, etc.). Seven is the number of men meaning his harmonious attitude to the world, and also as a sensory expression of the universal order. Four is the second most important number after three – a symbol of the world and material things, signifying integrity.

There are different opinions about numbers and their mystical meanings. But be that as it may, both in the Eastern and Western traditions, numbers occupy a significant place in the consciousness of representatives of both civilizations. The symbolic meanings of numbers have reached our days in their original form. Despite the fact that the world has entered a new millennium, society is rapidly developing, ideas about some numbers as something unknown and mystical have been preserved in the consciousness of almost every person, regardless of the culture and traditions of their country.

Since ancient times, numbers have served man not only as a means of counting and calculation, but also had a certain symbolic meaning. Each number, each digit has an internal content and unique semantic significance, and this value is preserved not by mathematics, but by units of communication.

Numbers are the factor of reality that determines individual and national

characteristics of the linguistic personality, reflects cultural customs and traditions, social status and the spiritual world of a person. Each linguistic personality exists in the space of linguistic and conceptual pictures of the world, in the forms of public consciousness, conceptual and linguistic pictures of the world are interconnected, they form the type of a person's attitude to the world, determine the norms and rules of communicative behavior. Language, through the system of its meanings, synthesizes and reflects the national and cultural specificity of the picture of the world, preserves and transmits it from generation to generation.

Language functions as a cognitive and cultural tool through which abstract concepts are codified, often utilizing numerical lexemes as symbolic anchors. Numerical designations in a given linguistic system emerge from and are shaped by the sociohistorical conditions of the speech community, becoming embedded in the collective linguistic consciousness. The semantic significance of numbers is internalized by the linguistic personality via associative connections with elements of the physical environment, historical events, and the broader national and cultural worldview. In this capacity, numbers transcend their primary quantitative function to serve as cognitive schemata that organize, classify, and transmit culturally salient knowledge. Their presence in both oral and written traditions ensure the intergenerational continuity of cultural memory, regardless of the mode of transmission.

Within this symbolic framework, the number seven exemplifies the multifunctionality of numerical symbolism. Universally marked across a wide spectrum of linguistic and cultural systems, seven is frequently conceptualized as a terminal point in a numerical sequence, and as such, it is associated with completeness, harmony, and metaphysical transcendence. Its symbolic valence often encompasses notions of happiness, fortune, and spiritual elevation,

rendering it a key element in the semiotic systems of many religious and mythological traditions. The pervasive recurrence of the number seven in phraseological units, cosmological models, and ritual practices across cultures illustrates the deep cognitive and cultural entrenchment of numerical symbolism and its role in shaping collective belief structures and symbolic representations of reality.

In English, the idiom "*on cloud seven*" (equivalent to "*yettinchi osmunda*" in Uzbek) expresses a state of extreme happiness or euphoria. This conceptual association with spiritual elevation can be traced to religious traditions, particularly within Islam, where the heavens (*arsh al-a'lā*) are structured into seven levels. The seventh heaven is believed to be the closest to God, representing the highest state of divine proximity and bliss. According to Islamic tradition, the Prophet Muhammad (peace be upon him) ascended through these seven levels during the miraculous night journey of *Mi'raj*, culminating in the presence of the divine – symbolizing the ultimate spiritual fulfillment.

The number seven also holds central importance in Christianity. It appears frequently in the Bible, often representing divine completeness or moral order. One of the most well-known biblical references is the concept of the "seven deadly sins": pride, greed, wrath, envy, lust, gluttony, and sloth – each representing a fundamental moral failing. This enumeration reinforces the symbolic use of seven as encompassing totality in ethical constructs.

Historically, ancient civilizations also attributed cosmological and symbolic significance to the number seven. For example, in Roman tradition, the city of Rome was said to be built on *seven hills* – Palatine, Capitoline, Aventine, Caelian, Esquiline, Viminal, and Quirinal – contributing to Rome's mythic and strategic stature. Similarly, the expression "*a cousin seven times removed*" in English denotes a very distant relative, and reflects the idea of

generational separation, where seven serves as a symbolic boundary marking remoteness or completion of a generational cycle.

In English phraseology, the number seven frequently appears to emphasize exaggeration or a sense of completeness:

- *"A fool may ask more questions in an hour than a wise man can answer in seven years."*
- *"One lie needs seven lies to wait upon it."*

These expressions metaphorically use seven to mark the limits of time, patience, or consequence, reinforcing its connotation of full cycles or enduring impact.

In Uzbek cultural and linguistic tradition, the number seven also possesses sacred and mythological dimensions. It reflects cosmological models in which the universe is vertically stratified. According to Islamic cosmology, paradise consists of seven layers, and reaching the seventh level signifies the attainment of ultimate spiritual joy. The idiom *"yettinchi osmon"* (seventh sky) is widely used to indicate overwhelming happiness or transcendental bliss.

Turkic and specifically Uzbek mythologies also conceptualize the earth as composed of seven subterranean layers. The expression *"yetti qat yer osti"* (seven layers underground) denotes the mythological realm where malevolent or inferior spirits dwell. Additionally, the Uzbek expressions *"yetti dengiz oralig'ida"* (between seven seas) and *"[yetti tog' ortida]"* (beyond seven mountains) are used to describe faraway, often inaccessible or fantastical places – common in folklore and fairy tales. These symbolic uses of the number seven-mark thresholds between the known world and the mythical unknown, often associated with quests, trials, and transformations.

Overall, the symbolic meanings attached to the number seven across different cultures and languages reveal its integrative role in structuring cosmologies, spiritual hierarchies, social concepts, and mythic geographies. Its recurrence in religious texts, folklore, and

idiomatic expressions underscores its function as a universal cultural code, mediating between empirical reality and metaphysical belief.

In the epics, myths and fairy tales of peoples of various cultures there are ideas about mysterious, mystical numbers. In the research literature, hypotheses explaining the origin and nature of mystical numbers are mainly based on the religious, cult ideas of ancient people. V.N. Toporov drew attention to the fact that the classification principle underlies the distinction of certain numbers in archaic cultures (Toporov, 1982). According to the classification principle, all objects of the universe are connected by a certain system of hierarchical relations. The classification principle reflects the ideas of people of archaic cultures about the origin of the world and the structure of the world.

Counting and the first manipulation of numbers appear at the dawn of human history, with the help of counting and numbers a person masters time and space, lays the foundations of mathematical, astronomical and other natural science knowledge. The evolution of numbers in human thinking is a topic equally interesting for both mathematicians and philosophers. The complexity of understanding this problem, in addition to purely mathematical motives, also consists in the fact that a number can be thought of completely abstractly, but in society a number functions either as a word or as a sign (digit). Without a number, not only any science is unthinkable, but also any knowledge, any attitude to life. A number gives not only a measure of things, but also a simple connection of phenomena, and language here is inevitably connected with a number in the development of human thinking. In order to understand the reasons for which the tradition of operating with numbers as specific integral forms has been preserved for a long time, it is worth recalling that modern mathematicians and logicians, characterizing the nature of a number, say: "each whole number differs from another whole number by

characteristic individual properties – just as people differ from each other.”

“Just like objects of material culture – housing, clothing, food, which, in addition to fulfilling their main function of satisfying essential human needs, are in all cultures without exception loaded with additional symbolic (symbolic, ritual) content. Numbers, numerical sets of objects and concepts always have, in addition to their main counting function, also an additional symbolic, ritual meaning expressing a certain tradition. Different peoples have their own favorite numbers, preferred for such symbolic purposes, and in this, as in other similar phenomena, the uniqueness of local ethnic cultures is clearly expressed.

In addition, number has a special classifying role, a kind of ordering principle, with the help of which it is possible to combine various objects and phenomena of the real and mythological world into some groups, building bridges between them (for example, three categories of time – past, present, future; four cardinal directions – north, south, east, west, etc.)” (Zhukovskaya, 2002).

In conclusion, numerical units represent a critical intersection between linguistic structures, cognitive processes, and socio-cultural systems. Beyond their utilitarian role in quantification and enumeration, numbers function as semiotic signs embedded with culturally specific symbolic meanings, reflecting the ontological and epistemological frameworks of diverse linguistic communities. The conceptualization of numbers as sacred entities underscores their significance in the

construction of cosmological models, ritual practices, and philosophical doctrines, as evidenced in various historical and cultural contexts – from ancient Mesopotamian numerology to Pythagorean metaphysics and traditional Chinese symbolic systems.

The interdisciplinary study of numerical symbolism thus provides a valuable methodological lens for examining how numerical cognition is shaped by, and simultaneously shapes, cultural narratives, collective memory, and social organization. Numbers serve as classificatory and cognitive schemas that facilitate the categorization and interpretation of natural and metaphysical phenomena, reinforcing culturally specific modes of reasoning and world comprehension.

Furthermore, the persistence of sacred and symbolic number systems across time and cultures highlights the integrative role of numerical constructs in linking linguistic expression, cognitive representation, and cultural ideology. This underscores the necessity for continued cross-disciplinary research involving linguistics, anthropology, cognitive science, and the history of science to elucidate the multifaceted functions of numbers within human knowledge systems.

Ultimately, understanding the dual quantitative and qualitative dimensions of numbers enriches our comprehension of their role not only as mathematical abstractions but also as fundamental cultural artifacts that encode and transmit complex layers of meaning integral to human cognition and identity.

References:

1. Ashurova, D. U., & Galieva, M. R. (2018). *Cognitive linguistics*. Tashkent.
2. Rejapov, I. O. (2021). National and linguocultural specifics of numerological phraseological units in Uzbek and English. *O'zMU xabarлари*, (1/5/2), 235–237.
3. Rejapov, I. O. (2023). National and cultural features of phraseological units with number components. *Ta'lim va innovatsion tadqiqotlar: xalqaro ilmiy-metodik jurnal*, (6), 62–66.

4. Goethe, J. W. (1957). *Treatise on colour*. In *Selected works on natural science* (Трактат о цвете. Избранные сочинения по естествознанию). Moscow. (In Russian).
5. Zhukovskaya, N. L. (2002). *Nomads of Mongolia: Culture, traditions, symbolism* (Кочевники Монголии. Культура, традиции. Символика). Moscow. (In Russian).
6. Тороров, V. N. (1982). *Space*. In *Myths of the peoples of the world* (Пространство. Мифы народов мира, т. 2). Moscow. (In Russian).
7. Тороров, V. N. (1981). *Number and text: Symposium theses* (Число и текст. Тезисы симпозиума). Moscow. (In Russian).