

SYMBOLS AND SIGNS OF DIFFERENT CULTURES

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Abstract. *This article delves into the ancient and medieval understanding of numbers not just as tools for counting, but as powerful symbols of cosmic and spiritual meaning. Rooted in early civilizations such as Babylon, Egypt, and Canaan, the mystical interpretation of numbers found its most complete expression in the philosophy of the Pythagoreans. For them, numbers reflected the very structure of the universe — a bridge between the finite and the infinite, the material and the divine. The article traces how specific numbers like 1, 3, 7, 10, 12, and 15 held deep symbolic weight across different traditions, from Greek philosophy to early Christian theology and Byzantine teachings. It also reflects on how the symbolic view of numbers gradually gave way to a more abstract and infinite mathematical vision in the modern era, beginning with Descartes. In doing so, the article invites readers to see how the concept of number has shaped not only mathematics, but the way people have understood the world and their place in it throughout history.*

Key words: *Pythagoreanism, sacred numbers, mystical numerology, number symbolism, ancient philosophy, Christian theology, medieval worldview, Descartes, harmony, cosmic order, metaphysical mathematics.*

Introduction. In Babylon, Egypt, Canaan, and the Roman Empire, entire systems of sacred numbers were developed and used in various ways. Perhaps, in its most complete form, numerology as a mystical and philosophical teaching was developed in Greece by the Pythagoreans. In their cosmological constructions, number is the central concept; it was interpreted as a synthesis, a unification of the limit and the infinite, as the divine beginning in the world, the principle of all things and the soul itself. For Pythagoras, number is the eternal essence and the beginning of everything - heaven, earth, nature. Pythagoras said that everything occurs not from number, but in accordance with it. He considered the universal beginning to be "one" and "two", and he also called "two" chaos. As Porphyry writes, "of the two opposing forces, he [Pythagoras] depicted the better as one, light, truthfulness, equality, strength and fortitude; and the worst - duality, darkness, leftism, inequality, instability and changeability"¹.

The Pythagoreans believed in the mysterious, mystical meaning of numbers and numerical relationships. The numbers 1 and 10 were revered by them as symbols of perfection; 5 – as a symbolic designation of the marriage union; 7 – as a sign of the universal world-ruling principle (Pythagoras) or as a symbol of virginity, personified in the image of Athena the Virgin (Philolaus).

According to Aristotle, the Pythagoreans supposed that the elements of numbers are the elements of everything that exists and that the whole heaven is harmony and number. And everything that they could show in numbers and harmonies to be consistent with the states and parts of heaven and with the whole structure of the world, they brought together and brought into harmony with each other ... the elements of number they consider to be even and odd, of which

¹ Лосев А.Ф. История античной эстетики. – М.: Искусство, 1980. – 766 с.

the latter is the limit, and the first is the infinite; the one for them consists of both (namely: it is even and odd), number comes from the one, and the whole heaven, as has been said, is numbers².

The one, or unit for the Pythagoreans, is the beginning of numbers, the first even number for them is two, and the first odd number is three. But why is the even related to the infinite, and the odd to the limit? For the Pythagoreans, number is a visual image, it is not just a quantity, it also has a qualitative characteristic. Probably, this is connected with the fact that ancient mathematicians depicted numbers geometrically. The Pythagoreans distinguished between linear, flat and solid numbers. Thus, one for them is a point, two is a line, three is a plane (triangle), four is a body (the "first" body is a pyramid)³.

The first odd - three - has a beginning, an end and a middle. It, from the point of view of the Pythagoreans, is complete, it is a closed whole. Three is an elementary triangle, a perfect figure. Two has no middle, no center, and it is characteristic of spreading into infinity. Two is the definition of a line, and a line extends indefinitely in both directions.

For the Pythagoreans, the world is a harmonious cosmos, and the law of cosmic harmony is the main subject of knowledge. For them, the scale of numbers is the scale of the strings of the cosmos, with the help of which the knower extracts musical sounds from the world. The Pythagoreans said: "Everything is number." For the Pythagoreans, number is a symbolic tool for knowing the universe, number is the path to truth. The famous Pythagorean Philolaus claimed that a lie never penetrates into a number, because it is disgusting and hateful to its nature, while truth is related to number and is inextricably linked with it from the very beginning. In the minds of the Pythagoreans, number is not just a quantity, it is a mystery, since the properties of musical harmony are expressed in numbers. The moment of mystery, introduced into mathematics itself, turns it into music, and turns those who know into an orchestra (union) of people connected by a single symphony.

Pythagoras said: "Archives and principles do not lend themselves to clear exposition in words, because they are difficult to understand and difficult to express, and therefore, for the sake of clarity of teaching, one must resort to numbers"⁴.

The numerological ideas of early Christian apologists, philosophers and theologians largely determined the specifics of the medieval understanding of numbers in both the West and the East. "If we see everything in God and relate everything to him," said the apologists, "then we read the highest expression of meaning in ordinary objects"⁵.

In the Middle Ages, numerology was studied in schools. For example, in Byzantium, on the basis of the Pythagorean-Platonic traditions, of course, already Christianized, the "secrets of numbers and numerical relationships", their mystical and symbolic meanings were taught⁶.

The numbers 3, 7, 12 were interpreted by almost all Christian writers as sacred, divinely established, legitimately and fully expressing the idea of completeness and perfection, beauty and harmony.

The symbolic semantics of these numbers was oriented towards the most important concepts and values of doctrine and theology. The number three was considered the number of the Divine Trinity, the trinitarian essence of which is reflected in the triad of the material world

² Гайденко П.П. История греческой философии в ее связи с наукой. – М.; СПб.: Центр гуманитарных инициатив, 2012. – 319 с.

³ Гайденко П.П. История греческой философии в ее связи с наукой. – М.; СПб.: Центр гуманитарных инициатив, 2012. – 319 с.

⁴ Лосев А.Ф. История античной эстетики. – М.: Искусство, 1980. – 766 с.

⁵ Хейзинга Й. Осень Средневековья. – М.: Наука, 1988. – 540 с.

⁶ Кириллин В.М. Символика чисел в литературе Древней Руси, (XI–XVI века). – СПб.: Алетей, 2000. – 320 с.

(heaven, earth, water, etc.), and also the number of the human soul (meaning the soul's abilities to knowledge, irritation, attraction, as indicated by Plato), accordingly, the number three symbolized everything spiritual (the three annual holidays bequeathed to Moses on Sinai, the words of Christ about the three-day erection of the temple not made by hands, the resurrection of Christ on the third day, the threefold denial of the Apostle Peter, etc.), and therefore the number three naturally turned out to be involved in many sacraments - sacred rites and prayers.

Seven was thought of as a human number, signifying his harmonious attitude to the world, and also as a sensory expression of the universal order (seven holes in the human head, seven colors of the rainbow, seven tones of Gregorian music, seven celestial spheres, seven days of the week). Seven was associated with the teaching about the properties of the Holy Spirit (seven gifts of the Spirit) and with Christian ethics (seven virtues and seven deadly sins) and therefore, "apparently, it signified the highest degree of knowledge of the Divine mystery and the achievement of spiritual perfection (the seven-branched candlestick, seven sacraments, seven steps of wisdom, seven weeks of Lent); finally, it was used as a symbol of eternal peace and rest that will come with the end of the world"⁷.

The number 12, according to Christian ideas, was associated with the image of the people of God (12 tribes of Israel and 12 apostles) and, in particular, with the image of humanity, renewed by the good news of salvation in the Son of the Lord. The number 12 is a symbol of the Church - earthly and heavenly.

The number 15 was directly related to chronology. The so-called indiction, a period of time calculation introduced in 312 by the Roman Emperor Constantine the Great to replace the previously used "pagan" Olympiads, consisted of 15 years. Byzantine historians used counting by indictions. In the Middle Ages, the number of steps of the Jerusalem Temple was associated with 15 songs of degrees, or songs of ascent, which, according to legend, were performed on the steps of the ancient Jewish sanctuary before the beginning of the service. Literary materials testify to the existence in the world of medieval ideas of an associative connection between the number 15 and the image of the Virgin Mary. The correctness of this conclusion is confirmed by examples from the daily prayer practice of medieval Catholic monasteries.

Descartes' new theory of numbers became the starting point of the progress of mathematics, when the analysis of the infinite became a fact. This was a revolution not only in mathematics, but in the entire structure of Western thinking. The "ancient soul" in the person of Pythagoras, Spengler emphasizes, came to the discovery of its Apollonian number as a measurable quantity, the "soul of the West" in the person of Descartes and his generation "found at exactly the right moment the idea of number, which developed from the passionate Faustian craving for infinity. Addition and multiplication, these two ancient methods of calculating quantities, closely related to the descriptive construction, completely disappear in the infinity of functional processes"⁸.

Abstract mathematics, as Spengler showed, can change the entire worldview. The Pythagoreans considered number to be the measure of all things, a universal and mysterious instrument of knowledge. Ancient number was a measure in contrast to the immeasurable; the irrational, the ugly, the formless had to always remain hidden.

Conclusion. Throughout history, numbers have meant far more than simple tools for counting.

⁷ Кириллин В.М. Символика чисел в литературе Древней Руси, (XI–XVI века). – СПб.: Алетейя, 2000. – С.22

⁸ Шпенглер О. Закат Европы. – М.: Мысль, 1993. – С.228

For ancient thinkers like the Pythagoreans, numbers were filled with meaning — they were symbols of harmony, truth, and the structure of the universe. This deep, almost spiritual connection to numbers carried into early Christian and medieval thought, where certain numbers like 3, 7, and 12 became powerful representations of divine mysteries, human virtues, and the rhythm of life itself.

Over time, this symbolic view began to change. With the rise of modern science and mathematics — especially through the work of Descartes — numbers became more abstract, more focused on precision and infinity than on mystery or symbolism. Yet even today, traces of that older understanding remain. We still attach special meaning to certain numbers, and we continue to search for patterns and order in the world around us.

In the end, the story of numbers is also the story of how humans have tried to make sense of the universe — through wonder, through faith, and through reason. It reminds us that numbers are not just part of math; they are part of how we tell the story of existence itself.

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