

BOETHIUS AND THE SCIENCE OF MUSIC

The treatise *De institutione musica* by Boethius is the work from which the foundations of music theory are drawn throughout the Middle Ages. This work translates the ancient Greek system of organizing sounds into precise proportional relationships within a musical scale, then adapted to the needs of liturgical song and to the modal classification of Gregorian melodies. Although centered on musical mathematics applied to that sector of music that Boethius defines as "instrumental", Boethius' musical treatise is known to the medieval scholars also for the Platonic theme of cosmic harmony, which the Roman philosopher sees as realized in the inaudible music of the spheres .

MUSIC, SCIENCE OF THE "QUADRIVIUM"

In the introduction to the treatise *De institutione arithmetica* Boethius uses, for the first time in the European culture, the term "quadrivium" to indicate the organization of mathematical sciences in four different disciplines: arithmetic, geometry, music and astronomy. This organization is already present in Plato in the Republic, VII, and is followed by successive philosophers who place themselves in the Pythagorean-Platonic tradition, who recognize in the number the founding principle of the rational organization of the world. According to this, we can have scientific knowledge only when the mind is able to understand the numerical aspects that underlie the manifestation of sensitive things. So even the world of sounds, in its plurality and diversity of expressions, can be scientifically investigated by studying the heights of the intervals, reduced into mathematical parameters.

THE MUSIC OF THE SPHERES

According to Boethius, who recalls Platonic philosophy, the physical phenomenon of sound and music is only one aspect of what music really is. Music is in fact the totality of natural phenomena in which order and harmony are present, starting with the highest expression of this order, that is, the regular motion of the skies.

This idea is formalized in the *De institutione musica* by dividing the music itself into three major genres, namely music of the cosmos, of man and of instruments; three different realities, all three connected by the "power of harmony". This famous tripartite division of music into "*mundana*", "*humana*" and "*instrumentalis*" constitutes the best-known notion of Boethius' conception of music since the Middle Age. According to Boethius, the music of the celestial bodies is sonorous, and presents an "ordered relationship" of modulation corresponding to the rational order that determines the motion of the planets.

Together with the celestial reality, the earth reality also presents harmony among its components: in fact, the four Empedoclean elements that form every material substance (earth, air, water and fire) are in balance and proportion. And also the cyclical course of time marked by the celestial rotations presents harmony, manifested on earth by the changing seasons.

Human music, according to the genre in which Boethius divides the totality of music, reflects this cosmic harmony. It is inaudible but can be perceived through an internal analysis from which it emerges that the soul, the body and their combination in the human compound are structured components in admirable proportion. Boethius also demonstrates in this that he follows the Platonic idea of macro and microcosmic harmony exposed in *Timaeus*, but does not neglect to openly mention Aristotle and *De anima*, III, 9, when he emphasizes that the two components, rational and irrational, of the soul must be in perfect balance for the right psychic harmonization: harmony, Boethius reiterates, is always the conjunction of contrary things, and is the presence of opposing elements.

