

1 Eight Singing Sirens

Heavenly Harmonies in Plato and the Neoplatonists¹

Francesco Pelosi

Introduction

The myth of Er, at the end of Plato's *Republic*, offers the first account of the notion of 'music of the spheres' in a Greek text.² In order to describe the destiny of human souls in the afterlife, Socrates reports the remarkable experience of Er, who comes back from the dead after a marvellous twelve-day journey in the hereafter. Among the impressive things that he witnesses and hears, the most astonishing is certainly the choir of the Sirens and the Fates, which takes place on the spindle of Necessity. The evocative power of sound pervades these pages of the *Republic*, enriching the language of the myth with a fascinating expressivity. The afterworld explored by Er is a landscape characterized by loud acoustic allurements: it is shaken by the rumble of the Tartar and enchanted by the heavenly melodies of the Sirens and the Fates. Presumably for this reason, Er's myth continued to haunt the minds of many Renaissance scholars.

Plato's notion of the harmony of the spheres—introduced in Er's account and then presented in the harmonic construction of the World Soul in the *Timaeus* (see below pp. 16–20)—was destined to have a pervasive and abiding influence in the history of Western thought. The idea that perfect music on earth can effectively express heavenly harmony forms the basis of the concept of music as having a cosmological range. This essay deals with the beginnings of this enduring concept and explores its appearance in the works of several ancient Greek philosophers. It focuses primarily on theories of perception and the relationship between the physical and mental realms in some ancient Greek treatments of the music of the heavens, which exerted considerable influence on Renaissance conceptions of world harmony. In particular, two closely related topics are investigated: first, how heavenly music is conceived of in terms of sensible and intelligible contents, and second, it explores the question of whether it is possible to perceive this music and, if so, how one can determine the significance of this experience. I shall begin with Plato's philosophy of music, which raises some crucial questions about the distinction between a perfect, intelligible, paradigmatic music and

an imperfect, earthly one, and also the role of perception and intellect in musical experiences. After a brief analysis of Aristotle's refutation of the heavenly harmony theory in *On the Heavens*, the second part of this study will explore the notion of celestial music in the Neoplatonic philosophy of Porphyry, Iamblichus, Proclus, and Simplicius.

The Myth of Er and the Cosmogony of the *Timaeus*

The celestial harmony described in Book X of the *Republic* issues from the spindle of Necessity, which hangs from a beam of light, which is straight like a column and stretched throughout the whole of heaven and earth.³ The spindle whorl consists of eight concentric whorls, which fit into each other as a set of rotating spheres nested with one another. As such, they represent the orbits of the heavenly bodies (from the outer to the inner orbits): the fixed stars, Saturn, Jupiter, Mars, Mercury, Venus, the Sun, and the Moon. Plato describes the widths, colours, and speeds of these whorls, as well as their sonorous expression, thus depicting a universe rich in visual and acoustic stimuli. The spindle, as a whole, moves toward the right, while the seven inner whorls move in the opposite direction. On each whorl a Siren follows the movement, while uttering 'a single sound, a single pitch';⁴ from all the eight sounds the concord of a single harmony is produced.⁵ The Fates sit around and 'sing to the Sirens' harmony':⁶ Lachesis sings the past, Clotho the present, and Atropos the future, while they follow with their hands the movements of the whorls.

The Sirens' and the Fates' concert is so captivating that it generates a strong temptation to grasp it, be it by 'listening to it' with human ears or by reproducing it in earthly music. Even so, the myth of Er is so elusive that it escapes a strictly musical reading. The heavenly harmony of *Republic* X derives from the encounter between the Sirens' *harmonia* and the Fates' songs. The relationship between the two performances is not clearly explained. The only clue Plato gives us is the idea that the Fates sing 'to the *harmonia* of the Sirens'.⁷ This could suggest that the Sirens' *harmonia* is like a permanent background track, or a musical drone, for the melody (or melodies) of the Fates. With regard to the Fates' songs, the text does not provide a clear description of their melodies, apart from their verbal content (past, present, and future).⁸

Furthermore, Plato does not explain whether the pitch of the notes uttered by the Sirens depends on the speeds of the orbits or any other material feature of the astronomical system; thus, it is difficult for us to offer a detailed musical interpretation of the passage. As will be seen in subsequent chapters, Renaissance scholars were confronted with this very same problem. We may assume that the pitch of the notes depends on the velocity of the whorls: this is the most obvious hypothesis. It is based on ancient acoustic theories, which often consider the pitch of a sound to be

dependent on its velocity. However, in this case, one would expect the existence of six notes, not eight, because we are told that the Sun, Venus and Mercury move at the same speed. Nonetheless, if we were to take into account Plato's statement that the orbits of the three bodies have different sizes (Mercury's orbit is larger than Venus', which is larger than the Sun's orbit), we would end up with an eight-note scale, as the actual speeds of these three planets would be different.⁹ If we accept this interpretation, another major difficulty emerges: despite the presence of terms such as *harmonia* and *symphonein*, which hint at a delightful melody, in terms of a scale used in earthly music the song of the Sirens would result in a disharmonious cluster, because all the tones of an octave would be sounding simultaneously. From Antiquity to modern times, commentators have sought to solve this aporia. Thus they have suggested that *harmonia* should not be interpreted as simultaneous sounds, but as notes produced in succession, according to the most common meaning in ancient Greek music.¹⁰ Even so, the passage mentioned above undeniably describes a musical performance in which a simultaneous production of notes occurs.¹¹ I propose that both the notions of *simultaneous sounds* and of *sounds in succession* are implicated in the passage. The key term here is *symphonein*, which alludes to the phenomenon of concord and is commonly associated in ancient musical theory with the horizontal development of melody (concord as a significant interval of notes in sequence) and the vertical dimension of the simultaneous production of sounds (concord as the perfect blending of two sounds, where the two sounds are indistinguishable to perception). Furthermore, the word *symphonein* also implies two aspects that are perfectly integrated in the phenomenon of concord: the intellectual dimension of numerical ratios and the perceptive dimension of auditory effects.

According to my interpretation, Plato's statement that the Sirens' melody produces a concord means that they produce a music whose perfection emerges from a complex system of values, linked to both the intellectual and perceptive contents of the musical phenomena. Therefore, what is described here is a *sonorous* music and not a sort of conceptual arrangement of the heavens based on harmonics or music theory. In other words, the movements of the heavenly bodies are meant to produce *audible* effects, and this *sonorous* music is conceived of as pleasant. It is highly significant, as Guthrie pointed out, that the argument of the cacophony produced by all the tones of an octave sounding simultaneously does not appear in any ancient criticisms of the theory of universal harmony: the extraordinary aesthetic qualities of heavenly music are not under discussion.¹²

The idea that heavenly harmony is a *sonorous* and *pleasant* music of the spheres characterizes most ancient speculations on the doctrine.¹³ Often highly sophisticated both from a musical and an astronomical point of view, these speculations are richer in musical details than Er's account—some of

them attempt to explain Er's celestial music so as to provide a consistent interpretation of this complex passage. Music theory, as well as astronomical doctrines, might well have shaped the idea of a universal harmony, but the development of this notion is not linked to any specific musical and astronomical doctrines.¹⁴ These doctrines are rather a rich reservoir on which all ancient philosophers could draw when expressing philosophical ideas about the cosmos and the soul's faculties. Thus, the philosophical questions that derive from conceptions of world harmony deserve the same attention as the musical ones.

A crucial philosophical point in ancient speculations on heavenly harmony is the relationship between intelligible, perfect musical structures and their sensible, sonorous expressions. According to Plato, the sensible contents of music, especially in the case of a heavenly music, are only imperfect manifestations of an ideal intelligible order. The perfection of the Sirens' melody is expressed by the musical notion central in *Republic* 617b4–7: the octave that is at once a perfect concord and a system of perfect concords.¹⁵ The octave, with its perfect system of intervals, is the musical core of another famous Platonic passage based on astronomical and musical notions: the creation of the World Soul at *Timaeus* 35a–36d. This passage shares numerous analogies with the cosmological system described in Book X of the *Republic*, and in both cases, the web of astronomical and musical notions cannot be unravelled into detailed and consistent astronomical and musical systems.¹⁶ The best way to define these passages is to view them as descriptions of the 'harmonies and movements of the universe'—to borrow an expression from *Timaeus* 90d3–4. Better than any other Platonic dialogue, the *Timaeus* explores the relationship between the order of the cosmos, the psycho-physical structure of human beings, and the role of music. The World Soul, that is, the order of the universe, and the structure of the human rational soul are essentially the same, and they are based on precise musical intervals. The creation of the Soul involves a complex process of division, according to precise musical intervals that describe a diatonic octave. The outcome of the whole process is a psychic structure made up of two orbits, characterized by circular movements, the orbit of the Same and the orbit of the Different. The Same, the outside circle with the role of command, proceeds in a uniform and constant manner towards the right; it represents the fixed stars. The Different is divided, according to precise intervals, into seven unequal circles moving in opposite directions to each other; they represent the orbits of the Sun, Venus and Mercury, the Moon, Mars, Jupiter, and Saturn. Three of them move at a similar speed (as in *Republic* 617a8–b1: the Sun, Venus, and Mercury), while the other four move at different speeds, but always in relation to precise ratios (36c–d).

Certainly, there are striking analogies between this passage and the more poetical account of Er's myth. While the *Timaeus* does not hint

at a sonorous expression of this cosmic music, this does not mean, to my mind, that the heavenly harmony described in the dialogue is just an abstract construction based on musical numerology.¹⁷ Leaving aside the question as to whether the World Soul actually produces a sound, the passage in *Timaeus* 35b–36b gives the sensible human experience of listening to music a metaphysical significance: listening to music is a means for the human soul to tune itself with the cosmic order. The analogy between the motion of cosmic harmony and the movements of the rational soul is the basis for the ordering action that harmony exercises over the soul. In earthly music, the rational soul can perceive perfect harmonic ratios that constitute both its inner nature and also the essence of the cosmic order (*Timaeus* 47c–e). The idea of a similarity between the heavenly music and the harmony of the human soul was highly influential in Pythagorean and Platonic theories. Some two thousand years later, it appeared in many Renaissance texts, such as, for example, in Lorenzo’s words at the beginning of Act V of Shakespeare’s *Merchant of Venice*.¹⁸

The process undertaken by the soul to recover the intelligible by starting from sense perception is very similar to the one described in the *Phaedrus* (250c7–e1). This passage highlights the extraordinary effect produced by the encounter between the most acute of the senses, sight, and the form of Beauty. It can be noted that Iamblichus draws on, and combines, these passages from the *Phaedrus* and the *Timaeus*, in his *On Mysteries* (3.9.120.6–14) to describe the process of acoustic recollection. Prior to entering into the body, the soul hears divine harmony; when it is embodied, it is capable of recognizing those melodies that best preserve traces of the divine harmony, and strives to return to the heavenly harmony.¹⁹

The possibility of grasping traces of a paradigmatic music in human music relies on the human soul’s capacity to find a proper balance between the sensible and the intelligible worlds. This is not a universal ability: in the *Timaeus*, this capacity is only given to some gifted people, the *emphrones*, who are able to grasp that the earthly music reproduces the divine harmony, an insight which results in the deepest musical pleasure (*Timaeus* 80a–b). The essential feature of world harmony is its intelligible and paradigmatic value, which permeates, moulds, and gives sense to earthly music.²⁰ The capacity to grasp traces of the intelligible music in sensible music is the ultimate aim of the harmonic science mentioned in Book VII of the *Republic*, which forms part of the preparatory curriculum to dialectics (530d–531c). More specifically, the study of astronomy and harmonics (called ‘sister sciences’ by Socrates, following the Pythagorean tradition) requires a sharp capacity to go beyond sensory objects and grasp intelligible objects, which are the real objects of these disciplines. We can connect this passage to the astronomical and musical account of the myth of Er in that they both deal with the astronomical and musical order of the heavens and also raise, albeit with

very different language and images, the question about the existence of an exemplary music and the experience of grasping it. Apart from the mythical context of the story of Er where sensory perception of the heavenly music seems possible, the experience of grasping the harmony of the cosmos takes the shape of a complex cognitive activity, a genuinely ‘demonic undertaking’ (*daimonion pragma*) as Socrates’ interlocutor defines it (*Republic* 531c5). What the paradigmatic music represents and what the experience of grasping it means are questions raised by Plato, but never resolved. As we shall see, he leaves it to his successors to try to solve these issues in their speculations about the heavenly harmony.

Aristotle’s Soundless Universe

In *On the Heavens* (2.9.290b–291a), Aristotle famously rejected the Pythagorean idea that the movements of the heavenly bodies produce audible music. This represents the most authoritative refutation of the existence of cosmic harmony, and thus influenced many subsequent reflections on the subject in the Middle Ages and the Renaissance.²¹ Concerning the theme of world harmony, the passage in Aristotle’s *On the Heavens* is important for at least three reasons: first, it raises the question of the Pythagorean origin of the concept; secondly, it gives a description of the theory and its implications; and thirdly, it presents a refutation of the theory.²² I shall focus on the last two points.

In Aristotle’s view, the main problem with the notion of cosmic harmony is that it rests on the following assumption: since sound is caused by motion and the stars themselves are in motion, the stars’ enormous bodies must produce a sound while moving (290b15–23). According to Aristotle, it is perfectly possible for stars to move without making a sound, because—as he argues in the previous chapter—the movement of the stars is not self-caused but a consequence of their being a part of the revolving heavens. Furthermore, since a sound is produced only when something moves in something that is unmoving (291a16–17)—i.e. when an impact or friction occurs—it is possible, indeed necessary, that the movement of the stars does not produce any sound. According to Aristotle, this physical observation is sufficient to undermine the very foundations of the theory of heavenly harmony. From the erroneous assumption that stars produce sound, and the subsequent theory that Aristotle ironically defines as ‘tunefully and musically conceived’ (290b30–1), two difficulties emerge: first, we do not hear this cosmic music; and secondly, there are no traces of the destructive effects that these enormous sounds should produce.

Aristotle examines the Pythagoreans’ attempt to account for the human inability to hear the celestial melody (it seems that the Pythagoreans confronted only the first difficulty and ignored the second). In their opinion, the music of the heavens is not perceptible because it represents

a continuous background that accompanies man since birth: the music of the spheres is never broken by silence, which would make it appear to be sonorous. With regard to the harmony of the heavens, human beings are in a situation similar to that of a blacksmith, who is so accustomed to the din around him that he becomes deaf to it (290b24–9). According to this explanation, therefore, in some way we listen, so to speak, to the harmony of the heavens in every instant of our life: namely, the cosmic harmony is an acoustic background which men have grown so accustomed to that they perceive it as silence. Aristotle does not discuss this explanation, for he is not interested in considering why we do not hear the music of the heavens, as he believes that there is no music to hear at all. Nevertheless, it is worth considering that the analogy with the blacksmith fails to provide a convincing explanation for the lack of distinction between sound and silence, which is essential for perceiving a sound: whilst it is a matter of habit in the case of the blacksmith, in the case of men and the heavenly harmony, it is a physical reality. Unlike the blacksmith, who can leave the noisy atmosphere of his workshop at any time, a human cannot exit from his earthly life, and therefore cannot experience the existence of a real silence, which would enable him to tune his hearing to the music of the spheres. Strictly speaking, immersion in world harmony since birth does not entail a process of habituation, but the incapacity to perceive it.

Let us compare this explanation with another famous, albeit controversial Pythagorean justification for the human incapacity to perceive the music of the heavens. Archytas contends that loud sounds cannot be heard because of the excessive magnitude impeding their access to the ears, just as a large amount of water cannot enter a narrow-mouthed vessel.²³ An explicit reference to the harmony of the heavens does not appear in the passage; however, it is possible that Archytas has this notion in mind,²⁴ and it is exactly how Porphyry interprets the passage (*Commentary on Ptolemy's Harmonics* 80.28–81.16, see below pp. 22–23). Archytas' account is mainly focused on the characteristics of cosmic harmony, in particular its extraordinary loudness.²⁵ Conversely, Aristotle's Pythagorean explanation seems to emphasize the perceptive and cognitive mechanisms involved in listening to this specific music. However, one should stress here a relevant similarity between the two explanations: both of them refer to the limitations of the human sense of hearing, and connect it to the characteristics of world harmony, be it its excessive magnitude, or its eternal presence.

As we shall see, the theme of the limits of human sensory and cognitive faculties is widely exploited in subsequent, especially Neoplatonic, reflections on cosmic harmony, mostly in connection with fundamental issues of Plato's philosophy: corporality, sense perception, and cognition. The perception of the cosmic music is envisioned as an extraordinary perceptive and intellectual act by both ancient and Renaissance

Neoplatonists. Given that Renaissance discussions of the existence of world harmony are largely shaped by Neoplatonic views, we will retrace here their origins in detail. For the sake of clarity, in the following section we will divide Neoplatonic approaches of the question of the human inability to perceiving the music of the spheres into a Pythagorean approach and a Platonic approach.

Heavenly Harmonies in Neoplatonism

Before examining the most important Neoplatonic treatments of this topic, I shall introduce two other interesting passages that influenced later interpretations of the concept of world harmony. In *Table Talk* (9.14.745e), Plutarch reports Ammonius' interpretation of Plato's heavenly harmony. Concerning the difficulty humans have in grasping this music, he says that a feeble echo of the harmony reaches their souls and makes them remember what they experienced before incarnation. The ears of most humans are hindered by bodily obstructions and affections; only those who are gifted with a particular innate quality (*euphuia*) can perceive this melody, thus triggering the subsequent process of anamnesis, i.e. recalling the perfect harmony from before one's birth. As in the above passage from Iamblichus' *On Mysteries* (p. 19), a process of acoustic recollection is described here. It can be noted that the human sense of hearing does not seem to be defective in itself; rather, it fails because of bodily hindrance and affections.

Interestingly, we find a similar notion in a passage from Book III of Aristides Quintilianus' *On Music* (120.8–24), a treatise that bears numerous similarities with Neoplatonic doctrines.²⁶ As in Plutarch, this passage expresses the idea that the inability to hear the heavenly music results from the dulling caused by the corporeal world. Aristides explains that human hearing cannot perceive celestial sounds because of the impure mixture with the body. Listening to the universal harmony depends on the possession of a good fate (*eumoiria*), which determines both a moral and an intellectual good disposition. There are evident analogies with Plutarch's account: namely, the idea that the possibility of grasping the heavenly music is dependent on an innate ability (*euphuia*, *eumoiria*), and the idea that the faculty of hearing is not defective in itself, but is made deaf when it mixes up with the body.

Both passages from Plutarch and Aristides give a clear example of the Platonic approach to the theme of the common impossibility and the exceptional ability of perceiving the world music; that is to say, the theme is addressed within the Platonic framework of the problematic relationship between mind and body. Far more interesting is the case of Porphyry, who presents both the Platonic and the Pythagorean approaches. In his *Commentary on Ptolemy's Harmonics* (80.28–81.16), he quotes and comments on Archytas' observation on excessive sounds,

stating that according to the Pythagoreans, the cosmic harmony *exceeds* (*hyperballei*) our hearing because ‘the limit of sounds would be greater than the limits of hearing’.²⁷ It is highly interesting to note that Porphyry does not interpret this in terms of volume, but rather in terms of pitch: the harmony of the heavens comprises the highest and the lowest sounds,²⁸ which are beyond the limits of the human sense of hearing. The cosmic harmony, which Porphyry significantly describes as an ‘intelligible ordering of melody’, increases to the infinite, but when transferred to our voice and hearing, it is limited by human abilities.

In the *Life of Pythagoras* (30), Porphyry also deals with the experience of perceiving the harmony of the spheres. He attributes to Pythagoras the practice of soothing the passions of the soul and body by rhythms and melodies, and the ability to listen to the cosmic harmony produced by the spheres and the heavenly bodies. This harmony is not heard by human beings because human nature is too mediocre to perceive it.

In Iamblichus’ *On the Pythagorean Life* (65–6), we are told that Pythagoras did not need to use musical instruments or songs to soothe and order his soul, since he had the divine capacity of perceiving and understanding the heavenly harmony. To his followers, who were incapable of perceiving the music of the spheres, Pythagoras provides a kind of image that produces the imitation of that music by either instruments or the voice. The similarity between the testimonies of Porphyry and Iamblichus is evident, especially from a terminological point of view. Both Porphyry and Iamblichus attribute to Pythagoras the experience of listening to the cosmic harmony, linking the theme to practices of music therapy, which will become a major focus of interest in the theories of Renaissance Neoplatonic physicians. Furthermore, both describe the grasping of the heavenly music as an extraordinary quality, which is characterized by perceptive and rational aspects. Finally, each stresses the contrast between Pythagoras, an extraordinary man able to grasp this music, and his disciples, who are common men who cannot hear the world harmony. However, all these points are emphasized to greater extent in Iamblichus’ description, in particular the exceptionality of Pythagoras’ listening. Iamblichus’ tendency to Pythagoreanize Plato’s philosophy is particularly clear in his treatment of the heavenly music in Pythagoreanism.²⁹ Furthermore, the influence of Nicomachus of Gerasa, who combines Pythagorean and Platonic elements in his reflection on music, should also be taken into account.³⁰

Two of the most important subsequent treatments of cosmic harmony in late Antiquity—those by Proclus and Simplicius—develop the themes that emerge from Iamblichus’ *On the Pythagorean Life*: namely, what kind of reality cosmic music represents and what the perceptive and cognitive mechanisms involved in grasping this reality are.

In his commentary on Plato’s *Republic*, Proclus analyses in detail the astronomical and musical implications of the myth of Er. At 2.241.9–243.27,

he asks how Er can see the Fates and hear their songs. The core of his answer (242.29–243.3) is that the Fates' song is an 'impassive activity' (*apathous... energeias*), that is, an intellectual activity that produces a passive movement, or a movement of affection (*pathetiken... kinesisin*). In order to clarify the concept, Proclus introduces a useful simile (243.3–7). Let us imagine the situation in which the human soul experiences a feeling of shame or fear, and consequently the face blushes or turns pale: neither the blush nor the pallor are in the soul, but they arise in the face starting from the colourless movement of the soul. Similarly, when the Fates sing 'intellectually' (*noeros*), their intellectual activity produces a perceptive act (*aisthesis*) in Er (243.7–9). The soundless movement turns into sound, and an acoustic apprehension derives from the intellectual consciousness. In other words, the intelligible object becomes an acoustic object—the latter being the appearing of the former—and the intellection becomes an auditory act: Er hears what he has previously been grasping through the intellect.³¹ Proclus had previously linked Er's unusual visual and acoustic experiences to the famous doctrine of the vehicle of the soul (*ochema*).³²

Proclus' explanation provides an answer, albeit problematic, to the two crucial questions raised by the notion of heavenly music from Plato to late Neoplatonism: (1) What is the ontological and epistemological status of the concept of cosmic harmony, and how can one define the concept in sensible and intelligible terms?; (2) What does it mean to perceive this music in terms of sensible and intellective processes? With regard to the first point, by defining the Fates' song as a soundless intellectual activity, Proclus clearly identifies the essence of the heavenly harmony as a pure intellectual reality; nonetheless, he recognizes that it has a sensible expression: it is the way in which the intellective activity of the Fates becomes perceptible. Here, Proclus establishes a link between the sensible expression of the heavenly music and the perceptive process, in that the former does not seem to exist independently from the latter. The Fates' song is their intellective activity when it is heard. It is far from clear how this process occurs, and it is very significant that Proclus tries to explain it by a simile which raises a thorny question for philosophers of all ages, that is, the relation between mental states and physical manifestations. As for the second point—namely, how the perception of that music occurs and what it is—the doctrine of the vehicle of the soul (*ochema*) provides an interesting solution, as it rests on the primordial relation between the soul and the heavenly bodies.

Several decades later, Simplicius presents a similar solution to explain the perception of heavenly music by the embodied soul of an extraordinary man, Pythagoras. In his commentary on Aristotle's *On the Heavens* (2.9.463.13–470.26), Simplicius pinpoints a difficulty in the Pythagorean explanation according to which we do not hear the heavenly harmony because we are accustomed to it. Simplicius notes that if this is the case, then it is very difficult to explain how Pythagoras

could hear the heavenly harmony, since he was as accustomed to it as everybody else. Simplicius attempts to create a consistent picture to reconcile the idea of the extraordinary essence of the celestial music and Pythagoras' experience of listening to it. This attempt displays numerous analogies with the aforementioned passage from Proclus. The heavenly sound is somewhat analogous to the sound that characterizes the movement of mortal bodies, but it is an impassive activity (*energeia... apathes*, 469.15–16). The possibility of perceiving this sound depends on the presence of the luminous and heavenly vehicle of the soul (*ochema*), provided that the senses are purified by e.g. a good fate,³³ a good life, or ritual perfection (469.7–11). According to Simplicius, this is what makes Pythagoras able to perceive the harmony of the cosmos.

By applying the theory of ethereal audition to earthly perception of heavenly music, Simplicius needs to specify that the senses of the mortal body must be purified in order to make the vehicle of the soul capable of perceiving the world harmony. Whilst Proclus had to explain how a human soul with no ears can listen to the heavenly music, Simplicius is facing the problem of explaining how a soul can listen to the cosmic music despite having ears. The issue is far more complex, and Simplicius does not seem to be fully satisfied with the solution we have just mentioned. In fact, a few lines later, he proposes another explanation that offers a metaphoric interpretation of Pythagoras' experience of listening to heavenly music: the 'listening' of Pythagoras should be interpreted as a mental grasping of the harmonic ratios in numbers and what is audible in these ratios.³⁴ Pythagoras' experience seems to be closer to the study of harmonic science undertaken by the future dialecticians in Book VII of the *Republic* rather than to Er's hearing of the Sirens' and the Fates' voices. At the end of a long and lively tradition of thought about the heavenly harmony, 'listening to the music of the spheres' remains an expression lacking a precise connotation.

Conclusion

For centuries, the concept of world harmony continued to stimulate debate about important philosophical questions, which were formulated in the sources discussed above. Attempts to understand the ancient doctrines of the harmony of the spheres discussed in this chapter led to innovative speculations about the world, man, and music. Above all, a justification for this kind of speculation was often found in the Pythagorean association of the musical intervals with arithmetic ratios. Moreover, the connection between music and astronomy made the subject of world harmony a fascinating theme for subsequent generations of scholars and artists. Despite or perhaps due to its vagueness, medieval and Renaissance philosophers, theologians, music theorists, poets, and artists kept listening to the music of the spheres by passing down and

interpreting ancient Greek sources on the relationship between human life and a harmonically ordered universe. The question of whether, and how, visions of perfect harmony (as explored in Plato's *Republic* and *Timaeus*) could be used as models to shape both human life and music on earth continued to haunt the minds of many Renaissance scholars, as we will see in the following chapters.

Notes

- 1 I would like to thank the editors and organizers of the Venice conference, Jacomien Prins and Maude Vanhaelen. I am also grateful to Charles Burnett, Federico Petrucci, Massimo Raffa, Donatella Restani, and Maria Michela Sassi for their helpful comments and criticisms.
- 2 The precise expression 'music (or harmony) of the spheres' does not appear in the myth of Er; we find it in relatively few ancient Greek writings (see e.g. Porphyry, *Life of Pythagoras* 30 and Iamblichus, *On the Pythagorean Life* 65: both speak of 'the universal harmony of the spheres and the stars that move with these', τῆς καθολικῆς τῶν σφαιρῶν καὶ τῶν κατ' αὐτὰς κινουμένων ἀστέρων ἁρμονίας). Usually, expressions such as 'cosmic concord' (see Nicomachus of Gerasa, *Manual of Harmonics* 242.15–16: τῆς κοσμικῆς συμφωνίας), 'harmony of the universe' (see Porphyry, *Commentary on Ptolemy's Harmonics* 81.1: ἡ τοῦ παντὸς ἁρμονία) and other analogous periphrases are used.
- 3 Plato, *Republic* 616b–617d. The light column has been interpreted variously in Antiquity and in modern times: see Thomas Little Heath, *Aristarchus of Samos, the Ancient Copernicus. A History of Greek Astronomy to Aristarchus*, 2nd edition (Oxford: Clarendon Press, 1959), pp. 150–152. For instance, in his commentary on Plato's *Republic*, Proclus reports three interpretations: it could represent the Milky Way, the Zodiac (2.194.19–20), or the axis of the universe (2.199.31–200.2). See also Theon of Smyrna, *Mathematics Useful for Understanding Plato* 143.9–10.
- 4 617b6: φωνὴν μίαν ἰεῖσαν, ἓνα τόνον. ἓνα τόνον seems to be confirmed by Plutarch, *On the Generation of the Soul in the Timaeus* 1029c; Theon of Smyrna, *Mathematics Useful for Understanding Plato* 146.1–2; Proclus, *Commentary on Plato's Republic* 236.27–237.3; and Proclus, *Commentary on Plato's Timaeus* 3.67.8–11. The alternative readings in the extant manuscripts are ἀνὰ τόνον and ἀνατόνον, which do not make much sense. ἓνα τόνον is not redundant, as it specifies that the sound emitted by each Siren has a precise musical intonation (see Adam, *The Republic of Plato, ad loc.*; on the musical meaning of τόνοϛ, also with reference to *Republic* 617b6, see Eleonora Rocconi, *Le parole delle muse. La formazione del lessico tecnico musicale nella Grecia antica* (Rome: Quasar, 2003), pp. 22–23). For ancient interpretations of the Sirens in Er's account, see Theon of Smyrna, *Mathematics Useful for Understanding Plato* 146–147; Proclus, *Commentary on Plato's Republic* 2.237.16–239.14; and Macrobius, *Commentary on Scipio's Dream* 2.3.1. On the role of Sirens and Muses in ancient theories on cosmic harmony, see Pierre Boyancé, 'Les Muses et l'harmonie des sphères', in *Mélanges dédiés à la mémoire de Félix Grat*, vol.1 (Paris: Mme Pecqueur-Grat, 1946), pp. 3–16, and the recent Irini-Fotini Viltanioti, *L'harmonie des Sirènes du Pythagorisme ancien à Platon* (Berlin: De Gruyter, 2015), which provides a detailed investigation of the Sirens' harmony from ancient Pythagoreanism to Plato.

- 5 617b6–7: ἐκ πασῶν δὲ ὀκτῶ οὐσῶν μίαν ἄρμονίαν συμφωνεῖν.
- 6 617c3–4: ὑμνεῖν πρὸς τὴν τῶν Σειρήνων ἄρμονίαν.
- 7 This is the most appropriate translation of ὑμνεῖν πρὸς τὴν τῶν Σειρήνων ἄρμονίαν, since ὑμνέω πρὸς—analogously to ᾄδω πρὸς (αὐλόν, λύραν)—means ‘singing to’: see Barker’s translation (Andrew Barker, *Greek Musical Writings*, vol. 2, Harmonic and Acoustic Theory (Cambridge: Cambridge University Press, 1989), p. 58) and Bloom’s translation (Allan Bloom, *The Republic of Plato, Translated with Notes and an Interpretative Essay* (New York: Basic Books, 1991), p. 300). Shorey’s version (Paul Shorey, *Plato, Republic, with an English Translation* (Cambridge, MA: Harvard University Press, 1963), p. 505)—‘sang in unison with the music of the Sirens’ (my italics)—could be misleading: if ‘in unison’ is taken in its musical meaning, it describes a relation between the Fates’ and the Sirens’ melodies, which is hardly the one present in the passage.
- 8 For an attempt to reconstruct the Fates’ song and its close relationship with the Sirens’ harmony, in the light of the ethical and psychological doctrines of the *Republic*, see Viltanioti, *L’harmonie des Sirènes*, pp. 132–177.
- 9 On these astronomical features, see James Adam, *The Republic of Plato, Edited with Critical Notes, Commentary and Appendices* (Cambridge: Cambridge University Press, 1902), pp. 452–453; Heath, *Aristarchus of Samos*, pp. 109–110 and 156–158. Barker, *Greek Musical Writings*, vol. 2, p. 57, n. 9; Anne Gabrièle Wersinger, ‘Un élément musical inaperçu dans le Mythe d’Er: l’hymne des Moires et l’heptacorde inversé’, in *Musique & Antiquité. Actes du colloque d’Amiens (25–26 octobre 2004)*, ed. by Odile Mortier-Waldschmidt (Paris: Les Belles Lettres, 2006), pp. 145–164: pp. 151–153.
- 10 On this point, see the discussions in Théodore Reinach, ‘La musique des sphères’, *Revue des Études Grecques* 13 (1900): pp. 432–449: pp. 445–446; William K. C. Guthrie, *A History of Greek Philosophy*, vol. 1, The Earlier Presocratics and the Pythagoreans (Cambridge: Cambridge University Press, 1962), pp. 299–300; and Bonnie MacLachlan, ‘The Harmony of the Spheres: *dulcis sonus*’, in *Harmonia mundi. Musica e filosofia nell’antichità*, ed. by Robert W. Wallace and Bonnie MacLachlan (Rome: Edizioni dell’Ateneo, 1991), pp. 7–19.
- 11 Cf. Plutarch’s paraphrase of *Republic* 617b6–7 in *On the Generation of the Soul in the Timaeus* 1029c: ἄδειν δὲ πάσας ἕνα τόνον ἰεῖσας, ἐκ δὲ πασῶν κεράνυσθαι μίαν ἄρμονίαν.
- 12 Guthrie, *A History of Greek Philosophy*, vol. 1, p. 299.
- 13 In addition to the authors treated within this paper, see the following examples: Cicero, *Dream of Scipio* 5.18–19; Pliny, *Natural History* 2.22; Nicomachus of Gerasa, *Manual of Harmonics* 241–242; Theon of Smyrna, *Mathematics Useful for Understanding Plato* 140–147; Ptolemy, *Harmonics* 100–111; Censorinus, *The Birthday Book* 13; Macrobius, *Commentary on Scipio’s Dream* 2.3.12–4, 15; and Boethius, *Fundamentals of Music* 1.27.219.
- 14 See Walter Burkert, *Lore and Science in Ancient Pythagoreanism* (Cambridge, MA: Harvard University Press, 1972), p. 355: the idea of the heavenly harmony is not linked to any specific astronomical system (he goes further by saying that it ‘has nothing to do with mathematical or musical theory’: on this point see Huffman’s criticism in Carl A. Huffman, *Philolaus of Croton: Pythagorean and Presocratic. A Commentary on the Fragments and Testimonia with Interpretive Essays* (Cambridge: Cambridge University Press, 1993), pp. 279–280).

- 15 Cf. Proclus, *Commentary on Plato's Republic* 237.6–8: ‘as if the activities of the Sirens were similar to sounds from which the most complete of the concords (the octave) derives’.
- 16 On the relationship between Er's myth in the *Republic* and the construction of the World Soul in the *Timaeus*, see Francis M. Cornford, *Plato's Cosmology. The Timaeus of Plato, Translated with a Running Commentary* (London: Kegan, 1937), pp. 74–75 and 87–89; James Haar, ‘*Musica mundana*: Variations on a Pythagorean Theme’ (PhD dissertation, Harvard University, 1960), pp. 2–3 and 62–69; James Haar, ‘Pythagorean Harmony of the Universe’, in *Dictionary of the History of Ideas. Studies of Selected Pivotal Ideas*, vol. 4, ed. by Philip P. Wiener, vol. 4 (New York: Scribner, 1973), pp. 39–42: pp. 39–40. As we will see in subsequent chapters, many Renaissance scholars tried to make sense of Plato's concept of world harmony by combining the myth of Er with the cosmogonic narrative in the *Timaeus*.
- 17 On the basis of the expression ἀνευ φθόγγου καὶ ἤχῃς (*Timaeus* 37b5–6), Burkert concludes that the image of the World Soul in the *Timaeus* translates ‘into the realm of the immaterial and abstract’ the mythical image of the Sirens in the *Republic* (see Burkert, *Lore and Science in Ancient Pythagoreanism*, p. 354). The sonority of the World Soul in the *Timaeus* cannot be proved; however, it cannot be excluded on the basis of 37b5–6, as the expression concerns the reasoning of the soul in itself and not the movement of the soul in general. Cf. Macrobius, *Commentary on Scipio's Dream* 2.2.19, where the sonority of the World Soul seems to be taken as a natural consequence of its musical structure (‘mundi anima ... necesse est ut sonos musicos de motu quem proprio impulsu praestat efficiat, quorum originem in fabrica suae contextionis inuenit’); for Macrobius this is not inconsistent with the idea that the musical intervals, which constitute the essence of the World Soul, are objects of reason not perception (2.3.12: ‘haec interualla, quae in anima, quippe incorporea, sola aestimantur ratione, non sensu ...’).
- 18 See John Burnet, ‘Shakespeare and Greek Philosophy’, in *A Book of Homage to Shakespeare*, ed. by Israel Gollancz (Oxford: Oxford University Press, 1916), pp. 58–61. Another famous echo of ancient (especially Platonic) ideas on the harmony of the heavens in English literature is Milton's *Arcades*, vv. 61 ff.: ‘...in deep of night when drowsiness/Hath lock'e up mortal sense, then listen I/To the celestial Sirens' harmony,/That sit upon the nine infolded spheres,/And sing to those that hold the vital shears,/And turn the adamantine spindle round,/On which the fate of Gods and men is wound./Such sweet compulsion doth in music lie,/To lull the daughters of Necessity, /And keep unsteady Nature to her law, /And the low world in measur'd motion draw/After the heavenly tune, which none can hear/Of human mold, with gross unpurged ear...’.
- 19 Cf. Macrobius, *Commentary on Scipio's Dream* 2.3.7: the soul ‘in corpus defert memoriam musicae cuius in caelo fuit conscia...’.
- 20 Francesco Pelosi, *Plato on Music, Soul and Body* (Cambridge: Cambridge University Press, 2010), pp. 68–113.
- 21 Gabriela Ilnitchi, ‘*Musica mundana*, Aristotelian Natural Philosophy and Ptolemaic Astronomy’, *Early Music History* 21 (2002): pp. 37–74.
- 22 The Pythagoreans are credited with the theory at 291a8. Aristotle also attributes the notion to the Pythagoreans in *Metaphysics* 986a2–3, if we consider that the expression ‘the whole heaven is harmony and number’ is an allusion to the theory of the heavenly music, as indicated by Alexander of Aphrodisias' interpretation: Alexander of Aphrodisias' *Commentary on Aristotle's Metaphysics* 1 39, 22–24, trans. William E. Dooley (Ithaca,

- NY: Cornell University Press, 1989), p. 65: ‘They also said that the whole celestial system (*ouranos*) is composed according to a kind of musical scale (for this is what Aristotle is pointing out when he says, “And the whole heaven is number” [986a2], because it is [made up] of numbers both numerically and musically’). For other passages in which the notion is linked to the Pythagoreans (or in particular to Pythagoras), see Pseudo-Plutarch, *On Music* 1147a; Censorinus, *The Birthday Book* 13. On the question, see Reinach, ‘La musique des sphères’, pp. 432–433; Pierre Boyancé, *Le culte des Muses chez les philosophes grecs. Études d’histoire et de psychologie religieuses* (Paris: De Boccard, 1936), pp. 100–102; Pierre Boyancé, *Études sur le Songe de Scipion. Essai d’histoire et de psychologie religieuses* (Limoges: A. Bontemps, 1936), p. 105; ‘Les Muses et l’harmonie des sphères’, pp. 15–16; MacLachlan, ‘The Harmony of the Spheres: *dulcis sonus*’, p. 8; Huffman, *Philolaus of Croton*, pp. 279–283 (where he discusses, in particular, the attribution to Philolaus).
- 23 47 B1 DK 433.10–13: οὐ γὰρ παραδύεσθαι ἐς τὰν ἀκοὰν ἀμῖν τὼς μεγάλως τῶν ψόφων, ὡσπερ οὐδ’ ἐς τὰ σύστημα τῶν τευχῶν ὅκκα πολὺ τις ἐκχέη, οὐδὲν ἐκχεῖται.
- 24 Carl A. Huffman, *Archytas of Tarentum. Pythagorean, Philosopher and Mathematician King* (Cambridge: Cambridge University Press, 2005), p. 137.
- 25 Cf. Macrobius, *Commentary on Scipio’s Dream* 2.14: ‘... quod musicam perpetua caeli uolubilitate nascentem ideo claro non sentimus auditu, quia maior sonus est quam ut humanarum aurium recipiatur angustius’.
- 26 Aristides Quintilianus’ life and education are not known, but his link to the Neoplatonism of Plotinus and Porphyry has been argued by Thomas J. Mathiesen, *Aristides Quintilianus, on Music. Translation with Introduction, Commentary and Annotations* (New Haven, CT and London: Yale University Press, 1983).
- 27 81.2: μείζων ἂν εἴη ὁ ὅρος τῶν ψόφων τῶν τῆς ἀκοῆς. Cf. Aristotle, *On Soul* 424a28–32, where Aristotle argues that the excesses of the sensible objects destroy the sense organs (τῶν αἰσθητῶν αἰ ὑπερβολαὶ φθείρουσι τὰ αἰσθητήρια): if the movement transmitted to the sense organ is too vigorous, the form (i.e. the sense), breaks up.
- 28 81.3: ὀξυτάτους καὶ βαρυτάτους φθόγγους.
- 29 Dominic J. O’Meara, *Pythagoras Revived. Mathematics and Philosophy in Late Antiquity* (Oxford: Clarendon Press, 1989).
- 30 Nicomachus treats the cosmic harmony in the third chapter of his *Manual of Harmonics*, but it is difficult to reconstruct his explanation for the human inability to perceive this music in the picture we have drawn here. In *Manual of Harmonics* 242.14–17, he promises to give the explanation elsewhere, but it is no longer extant. Dominic J. O’Meara, ‘Hearing the Harmony of the Spheres in Late Antiquity’, in *A Platonic Pythagoras. Platonism and Pythagoreanism in the Imperial Age*, ed. by Mauro Bonazzi, Carlos Lévy, and Carlos Steel (Turnhout: Brepols, 2007), pp. 147–161: p. 149, suggests that an echo of Nicomachus’ explanation could be found in Porphyry, *Life of Pythagoras* 30. Nicomachus’ model of cosmic harmony had a lasting influence in both the Middle Ages and the Renaissance.
- 31 243.14–16: τοῦ δὴ νοητοῦ γεγονότος δι’ ἐμφάσεως ἀκουστοῦ καὶ ἡ νόησις ἄκουσις γέγονεν καὶ ἤκουεν ὧν ἐνόει πρότερον.
- 32 Proclus, *Commentary on Plato’s Republic* 2.154.23–155.11, cf. 2.166.16–167.23. Here, one should bear in mind Proclus’ fourfold classification of αἴσθησις in his commentary on the *Timaeus* (3.83.16–84.5), where he considers high forms of perceptive acts that are free from affections, as well

as inferior, mostly ‘passive’ perceptive acts. The universe hears its proper harmony through a *noetical* form of perception: ... τὴν ἁρμονίαν τὴν δὲ ὅλων δῆκουσαν διὰ τῆς ἀκοῆς (85.21–3). On perception in Proclus, see Henry J. Blumenthal, ‘Proclus on Perception’, *Bulletin of the Institute of Classical Studies* 29 (1982): pp. 1–11. On the notion of *ochema* in Neoplatonism, see Robert C. Kissling, ‘The Ochema-Pneuma of the Neoplatonists and the *De Insomniis* of Synesius of Cyrene’, *American Journal of Philology* 43 (1922): pp. 318–330; Éric R. Dodds, ‘The Astral Body in Neoplatonism’, in *Proclus, Elements of Theology. A Revised Text with Translation, Introduction and Commentary*, ed./trans. Dodds, 2nd edition (Oxford: Clarendon Press, 1963), Appendix II, pp. 313–321; Maria Di Pasquale Barbanti, *Ochema-pneuma e phantasia nel neoplatonismo: Aspetti psicologici e prospettive religiose* (Catania: CUECM, 1998); and John F. Finamore, *Iamblichus and the Theory of the Vehicle of the Soul* (Chico, CA: Scholars Press, 1985).

33 469.9: εὐμοιρίαν, cf. Aristides Quintilianus, *On Music* 120.23, see above p. 22.

34 469.18–20: ὡς εἰ καὶ τοὺς ἐν τοῖς ἀριθμοῖς ἁρμονικοὺς λόγους ἐννοῶν καὶ τὸ ἐν αὐτοῖς ἀκουστὸν ἀκούειν ἔλεγε τῆς ἁρμονίας.