Introduction

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In the last forty years, two fields of research have progressively emerged with an initially pioneering and then central role in the scholarly debate on Antiquity: ancient music on the one hand, and post-Hellenistic and late antique philosophy on the other. This volume is the first attempt to discover the huge links between these two fundamental areas in the study of the ancient world by drawing a thorough and complex picture of the various ways in which musical notions entered the philosophical debate during the first centuries of the Christian era and contributed to shaping its content.

After decades of non-systematic enquiries, in the Eighties two groundbreaking volumes on ancient Greek music brought to classicists' attention an extraordinary collection of literary and philosophical texts concerning music, from Homer to Late Antiquity (Barker 1984, 1989). Andrew Barker's seminal works made many technical, and somewhat obscure, issues related to ancient musical culture completely accessible to non-specialists and initiated a process that in a couple of decades was to lead to the stable inclusion of ancient music among the branches of classical studies. Following Barker's inspiration, many scholars have embarked on in-depth enquiries into music in Antiquity, by unveiling the religious, political, and social values embedded in musical experience, the theoretical background of harmonic theories, and the historical development of musical culture.[1] As a result, topics such as contexts and practices associated with musical performances, the educational and social role of music, and its scientific study have become common in Classical scholarship nowadays.

[1] Two fundamental technical and historical surveys are West 1992 and Hagel 2009. On harmonics, the reference work is Barker 2007. The essays collected in Murray and Wilson 2004 provide a wide-ranging enquiry into the social, political, and religious role of music in Classical Athens. On the interesting yet undeveloped branch of ancient Greek musical historiography, see Barker 2014.

Recent decades have also witnessed the flourishing of studies on Imperial and late antique philosophy as a momentous phase in the history of the ancient thought. Also in this case, crucial aspects of post-Hellenistic and late antique thought have emerged in an intriguing development of the field of enquiry, from the critical engagement with the major philosophical traditions of the Classical and Hellenistic periods to some cultural exchanges of paramount importance (above all the encounter of ancient Greek philosophy with Judaism and Christianity), and from exegetical strategies to the focus on specifically philosophical issues. As a consequence, the actual intellectual import of these centuries for the history of philosophy has come to the forefront.[2]

Despite these impressive advances in our knowledge both of ancient music and of post-Hellenistic and late antique philosophy, the intersection between these two fields still remains unexplored to a large extent. Before delving into the reasons why it deserves special consideration, let us add a few remarks on how the study of the interplay between music and philosophy can generally contribute to our knowledge of Antiquity. The main contributions can be illustrated by considering three points – the first two are preliminary and related to our appreciation of the sources, the third is more strictly related to the goal of this book. First, our knowledge of ancient Greek music relies heavily on philosophical texts: ancient philosophers discuss at length many issues concerning both the theory and practice of music, and this rich amount of evidence is one of the principal sources for the reconstruction of musical culture throughout Antiquity. A rather clear picture of this phenomenon emerges as soon as one skims through fundamental books in the field, for instance Andrew Barker's above-mentioned collection (especially vol. 2, 1989) or David Creese's *The Monochord in Ancient Greek Harmonic Science* (2011). Both authors extensively draw upon philosophical texts, whose contribution to our understanding of ancient Greek music and its scientific study is crucial not only quantitatively, but also qualitatively: philosophical accounts such as those by Archytas, Philolaus, Plato, Aristotle, and Porphyry provide

[2] After the classic monographs by Baltes 1976, Dillon 1977, and Donini 1982, interest in post-Hellenistic philosophy has been considerably increasing, especially with respect to the Peripatetic and the Platonist traditions. As to the former, the study of Alexander has advanced considerably, and we have at our disposal a fundamental sourcebook on Peripatetic philosophy (Sharples 2010). Research on post-Hellenistic and late antique Platonism is even better developed: along with reference books such as Gerson 2010, Tarrant et al. 2018, and Boys-Stones 2018, and the ongoing project *Der Platonismus in der Antike*, several works have shed light on the philosophy and exegetical methods of post-Hellenistic and late antique Platonism (see Bonazzi 2003 and 2015, Ferrari 1995 and 2001, Gersh 1986, Hoenig 2018, Michalewski 2014, Opsomer 1998, O'Meara 2003, Petrucci 2018a).

a clear image of the development of the reflection on music and harmonics from both a technical and a methodological point of view. This picture indicates how pressing a properly philosophical analysis of these musical passages is: even if one focuses only on the philosophers' contributions to musical theory, it is of paramount importance to have adequate knowledge of their philosophical use of music – and this is a crucial contribution of this book. Second, and very interestingly, it is not simply the case that philosophers develop discussions on music and harmonics: what has also emerged is that music theorists fully exploit philosophical notions and adopt specific philosophical approaches which lie at the basis of their technical works on music. This is the case with Aristoxenus, Ptolemy, and Aristides Quintilianus, just to mention three prominent figures, whose intellectual enterprises in musical fields presuppose specific philosophical theories. Indeed, the philosophical background of these music theorists strongly influences the way in which they contribute to shaping the technical domain of music and harmonics and to interpreting its study: this clearly emerges, for instance, when one focuses on Aristoxenus' conception of harmonics as an 'Aristotelian' science, or once Ptolemy's methodological revolution is investigated by considering not only its final technical outcome but also, and above all, its philosophical assumptions and aims.[3] This leads us to the third point (the most important one for our purposes): in Antiquity music is not a topic occasionally dealt with by philosophers but rather a *philosophical* topic, inasmuch as it plays a role in argumentative and exegetical strategies. As a matter of fact, although it would be difficult to argue that *all* ancient philosophers regard music as a fundamental topic, it is quite fair to say that there has not been a moment in the history of ancient philosophy when leading figures have not reflected on a number of aspects of harmonics and music, and have not exploited musical notions for philosophical purposes. This is blatantly true for the Pythagoreans, Plato, Aristotle and the Early Peripatetics, the Stoics and the Epicureans (especially, but not only, Philodemus), and – as recent scholarship has shown – for a Platonist such as Porphyry, if we wish to leap directly from the late Hellenistic age to the third century AD. Taking into account how and why ancient philosophers deal with music has suggested innovative ways of approaching much-debated questions concerning some major philosophical figures and movements (e.g. Pythagoreanism and Plato's philosophy, especially his ethics and psychology) and has led to the project of a comprehensive survey of the interplay between music and

[3] On Aristoxenus, see Bélis 1986 and Barker 2007, 136–259; on Ptolemy, see especially Barker 2000a.

philosophy in Antiquity.[4] However, even though a systematic interest in musical topics has become increasingly common among scholars of ancient philosophy, there is still much work to be done. This is particularly true in relation to the post-Hellenistic and late antique philosophical use of, and debate on, music and harmonics, which has received little attention compared to the consideration given to the interplay between music and philosophy in the Classical and Hellenistic periods.[5]

The point is even more astonishing if one considers that from the Imperial Age to Late Antiquity, especially in the context of the Platonist tradition, music and harmonic theory are mostly exploited from a philosophical point of view. During these centuries music becomes a privileged instrument to conceptualise philosophical doctrines and discuss them. Notions borrowed from the musical culture are employed in the investigation of fundamental philosophical fields, such as ethics, cosmology, and metaphysics, and strongly contribute to shaping them. More specifically, in works from this period, an interest in music lies at the core of fundamental philosophical activities, from exegetical practices to the development of ethical, epistemological, and cosmological doctrines. This makes an enquiry into the philosophical use of music and harmonics in this period not only promising but also crucial for getting to the core of the links between music and philosophy in Antiquity and for exploring a new and effective path towards a fresh understanding of post-Hellenistic and late antique philosophy.

The present volume is designed to fill this gap in the scholarship by drawing a picture of the relationship between music and philosophy across a long time span, from the work of Philo of Alexandria at the beginning of the Imperial age to that of John Philoponus at the end of Antiquity. All the philosophers and philosophical movements dealt with in the volume make interesting use of musical notions to address crucial philosophical issues and provide some clear examples of how sophisticated the dialogue between music, as a highly technical field, and philosophy was during the last centuries of ancient thought. In particular, the reader will be struck by the presence of some central topics common to different philosophical approaches: the use of musical notions for exegetical purposes, the presence of philosophical accounts in technical works on music, the use of musical

[4] This is the aim of our project for a collection, with a translation and commentary, of texts testifying to a philosophical use of music from the Presocratics to Middle Platonism: Pelosi forthcoming; Pelosi and Petrucci forthcoming.

[5] Some remarkable, yet isolated, attempts to survey the links between music and philosophy in Late Antiquity can be found in O'Meara 2005 and 2007, and Sheppard 2005.

images and notions in argumentative accounts with the aim of demonstrating the superiority of a particular philosophical view or way of life, and the use of concepts borrowed from the musical field as paradigms in the description and interpretation of ethical, ontological, cosmological, and metaphysical elements. This is an entirely new narrative, whose development really sheds light on the philosophical debates and theoretical constructions of a fundamental period of ancient thought.

The structure of the book aims to bring together both a diachronic perspective, focused on the different philosophical approaches to music across time, and a thematic point of view, centred on the main topics and notions characterising the interplay between music and philosophy in the Imperial age and Late Antiquity. By broadly following a chronological order, the book aims to show how the exchange between music and philosophy unfolds throughout key moments in the history of ancient thought in this period, and what philosophical trends emerged – or remained constant – throughout the centuries. At the same time, the thematic structure of the volume allows the reader to fully appreciate the main concepts at stake when music is intertwined with philosophy: for instance, in the first part of the book, a section including chapters on Alexander of Aphrodisias, Sextus Empiricus, and Ptolemy provides analyses of the role played by musical notions in the conceptualisation of ontological matters, as well as reflections on the very status of music and its scientific study in the post-Hellenistic age. This section is designed to draw attention to some ontological and epistemological issues which prove to be essential tenets underpinning the interplay between music and philosophy in the works of this period (see below, pp. 10–12, for a more detailed introduction to this point).

Before illustrating the main contents of the volume in detail, an overview of earlier philosophical approaches to music may be useful, so as to put our enquiry in the right historiographical perspective. By the dawn of the Imperial age, the philosophical use of music has already undergone crucial developments in different philosophical traditions rooted in the Archaic, Classical, and Hellenistic periods. As is widely known, music plays a pivotal role in the investigations of some Pythagoreans such as Hippasus, Philolaus, and Archytas, who extensively discuss musical notions and lay the foundations for their philosophical use from a range of points of view. Although mainstream views on the Pythagorean approach to music, from Aristoxenus onwards, tend to emphasise its mathematical aspects – that is, roughly speaking, the tendency to analyse musical phenomena in terms of numerical ratios – the Pythagorean investigations, at the crossroads

between music and philosophy, are far more diverse than this feature might suggest. Indeed, they provide insights into central areas of ancient philosophical thought, such as the philosophy of science, and in particular acoustics, epistemology, and cosmology.[6] Therefore, at the beginning of the Classical age the encounter between music and philosophy already shows its thought-provoking potential and produces some important outcomes.

With Plato's reflection, which stands out as the first articulate and sustained analysis of the philosophical import of music, the link between the two fields is further explored and definitively established as the fundamental interaction between two central areas of ancient Greek culture. As is well known, music plays a crucial role in Plato's accounts of ethics and politics, both in the *Republic* (books 2–3) and in the *Laws* (books 2 and 7). Behind these treatments there lies a refined analysis of the psychophysical impact of music, hinging on Plato's view about body and soul and their relationship. By investigating how music stimulates sense-perception, emotions, and cognitive processes, Plato fully exploits the pedagogical and psychagogical qualities of music, not least by making it a valuable resource within a higher educational programme – the one conceived for rulers in *Resp*. 7 – in which harmonics plays an important part. Midway between the sensible and the intelligible, music is a hot philosophical topic in Plato, providing a number of insights into the core of his philosophy (i.e. the distinction between two ontological and epistemological domains). The philosophical relevance of music, and its twofold nature as something both sensible and intelligible, is further explored in the *Timaeus*, where some perceptive analyses of sound and hearing are combined with the notion of an entirely intelligible music, namely the harmonic ratios out of which the world soul is fashioned (*Ti*. 35a-36e). The account of the world soul, which will have an extraordinary influence on philosophers in the Imperial age and in Late Antiquity, as well as on Renaissance conceptions of the links between man and the cosmos, clearly shows how pervasive musical notions are in Plato's philosophy, as they touch upon all areas of his thought – ontology, epistemology, psychology, ethics, politics, and

[6] To summarise the contribution of the three above-mentioned Pythagoreans in a handful of lines (which hardly do justice to them): Hippasus is credited with one of the first experiments in acoustics (18B12 DK), while Philolaus' theories imply complex relationships between music theory and cosmology, based on the notion of *harmonia*, a key concept both in music and in the cosmological theory (44B6 DK); as for Archytas, his works on acoustics and harmonics are landmark ones (47B1 DK, 47B2 DK), and his authority in the musical field is acknowledged throughout Antiquity. On the Pythagorean view and use of music, see especially Burkert 1972, 350–400, Barker 2007, 263–307, Zhmud 2012a, 285–313, and Horky 2013, 222–58.

cosmology. Plato's account provides a key to grasping the close link between the place of music in human life and its role in the intelligible world.[7]

Plato's analyses of musical phenomena – and particularly his interpretation of the ethical and political role of music – have a great impact on Aristotle, who acknowledges that music can significantly shape a person's character and dwells at length on the social and political impact of music in the eighth book of the *Politics*. More originally, perhaps, he also makes room for the non-educational purposes that music can be used for, such as amusement and catharsis. Besides the extensive account of *Politics* 8, some important references to musical notions and theories appear in the treatises *On the soul*, *On sense and the sensible*, and *On the generation of animals*, where Aristotle deals with the physics of sound – that is, its production and propagation – and with the process by which sound, with its specific qualities, is perceived. This side of Aristotle's interest in music exerts a strong influence within the Peripatetic milieu, where his research on sound and hearing is further developed – as is especially evident from *Problems* 11 and 19, from the treatise *De audibilibus*, and from Theophrastus fr. 716 FHS&G.[8] Most importantly, Aristotle's thought (his conception of science and knowledge more than his 'philosophy of music', so to speak) deeply influences the most renowned music theorist of Antiquity: Aristoxenus of Tarentum, whose work on harmonics is thoroughly imbued with Aristotle's ideas on scientific knowledge and its principles. Aristoxenus' enterprise of theorisation in the field lies at the basis of the substantial technical development of music and harmonics in the Hellenistic age. On the one hand, Aristoxenus' establishment of harmonics as an Aristotelian science determines the progressive canonisation of an empirical model of music. On the other, especially through the *Sectio canonis* and the first technical exegeses of the *Timaeus* (e.g. Crantor's),[9] a different approach to harmonics is developed, one based on pure calculus and heavily depending on Platonic assumptions. The divergence between these approaches underlies the (often implicit) debate between a rationalistic and an empirical approach to harmonics characterising the following centuries.[10]

[7] On Plato's appeal to, and discussion of, music see Barker 1984, 124–69, 1989, 53–65, 2007, 308–27, and Pelosi 2010.

[8] See Barker 1984, 190–204, 1989, 85–118, 2007, 411–36, Pelosi 2009, and Petrucci 2011 (especially on the relevant sections of the *Problems*); on Theophrastus see now Raffa 2018.

[9] On the *Sectio canonis* see Barker 1989, 190–209, 2007, 364–410, Barbera 1991, and Busch 1998. On Academic and Platonist exegeses of Plato's *divisio animae*, see Petrucci 2019a.

[10] On Aristoxenus, see the references provided in footnote 3 above.

Interest in music undergoes obvious transformations in the Hellenistic age, reflecting the peculiar philosophical traits of this period. Of course, the main issue becomes the epistemological and ethical value of music (i.e. whether music has a real impact on the soul and, if so, of what kind). The scarceness of extant testimonies strongly limits our possibility of investigating this issue, but at least one valuable witness has been transmitted, testifying to the fact that there was an intense debate on these questions: it is, of course, Philodemus' *De musica*, which illustrates the intriguing interlacement of ethics and epistemology which distinguishes the quarrel about music between the Stoics and the Epicureans.[11]

In the period that is the focus of our narrative, then, music on the one hand lies at the centre of an advanced technical debate, while on the other it is already a fundamental philosophical topic of discussion and a means of philosophical elaboration, although its impact on the various parts of philosophy varies from case to case. Interestingly enough, in Philo of Alexandria – the point of departure for our story – one encounters a rich use of musical notions as philosophical paradigms, where both the influence of previous approaches and the presence of a new and pervasive use of music in philosophical argumentations are remarkable. Philo's interest in music is as known as it is overlooked in its philosophical implications. As **Carlos Lévy**'s contribution shows, the importance of the musical paradigm in Philo's thought clearly emerges by means of a comparison with the other complementary model adopted by the philosopher: the pattern of the *scala naturae*, inherited from Stoicism. Lévy's analysis reveals that the musical paradigm turns out to be the most powerful expression of the notion of transcendence, from both a philosophical and theological point of view, as it describes – in a way that the model of the *scala naturae* cannot do – the harmony of the world and its distance from God. More specifically, Philo's appeal to the notion of harmony introduces the idea of an orderly discontinuity in nature, implying both the transcendence of God and the limited condition of men: the world is indeed governed by harmony, but only in the very qualified sense that it implies harmonically defined relationships between very distant entities. This 'vertical' harmony, however, is combined with a 'horizontal' one, for God also exerts his providence according to harmony, while, in turn, music is the intellectual means allowing human beings to contemplate the heavens and to draw closer to God. Interestingly,

[11] See Martinelli 2009 for a collection of essays on music in the Hellenistic age, including some studies on philosophical texts. On Philodemus' *De musica* see especially Delattre's monumental edition (2007). Recently scholars have proposed that music also played some role in Stoic physics: see Scade 2017 and Salles 2017.

these are *not* mere metaphors: rather, music represents now a proper philosophical model, and moreover it is applied to aspects which will prove fundamental in the post-Hellenistic age.

Indeed, a wide-ranging use of musical notions and a tendency to build up a philosophical system by appealing to them are among the major features emerging from the Middle Platonists' treatment of music. This is especially the case with the writings of one of the most prolific authors of the early Imperial age, namely Plutarch. Through an in-depth enquiry into the *Moralia*, **Bram Demulder** emphasises that Plutarch's notion of cosmic and divine music represents a paradigm for all kinds of sensible music. Indeed, in Plutarch's view the existence of a cosmic and divine music implies that there is a paradigm–image relationship between this dimension and all sensible instances of music. Two conclusions follow from this. On the one hand, it is somewhat misleading to draw too strict a comparison between sensible and cosmic music inasmuch as cosmic music is intrinsically pure and perfect; on the other hand – and most interestingly – even if sensible music as such is impure and potentially damaging, it can be used as a therapy for the human soul precisely because it complies with the embodied condition of the latter. In other words, music plays a fundamental role in all dimensions of reality, although in each case its status and effectiveness have distinctive features and mechanisms. This paves the way for focused enquiries into the philosophical use of music with respect to specific – and crucial – philosophical issues. Now, it would be hard to find an issue which is more important for a Platonist than the status of God and his relationship with the world, and, interestingly, such a relationship concerns music, for a Platonist could hardly fail to regard the world as being harmonically arranged. Theology is, in effect, one of the fields in which the appeal to musical notions proves most effective and powerful, as the paper by **Federico M. Petrucci** shows. Middle Platonists developed different theological models in order to build up philosophically consistent cosmologies, and one of the main tools applied to achieve these models is the use of two specific notions of cosmic harmony and divine harmonisation. On the one hand, a dynamic notion of harmony is crucial for those authors who regard God as a divine craftsman and uphold a temporal cosmogony, for it ensures God's direct engagement in the *production* of harmony between opposite cosmological powers. On the other hand, a static notion of harmony paves the way for a sempiternalistic cosmology and a non-artisanal theology, as it ensures the intrinsic order of the world. Harmony is, in both cases, a philosophical model, and by understanding its role in each Middle Platonist doctrine one

is in a position also to enter an intriguing debate on the sense in which God is to be regarded, according to the Middle Platonists, as the harmoniser of the world. At the same time, music is seen as a philosophical key to interpret reality not only by the Middle Platonists, but also by the Peripatetics, as **Laura M. Castelli** shows. By focussing on Alexander of Aphrodisias' use of two essential musical notions – *harmonia* and *symphōnia* – as paradigms in non-musical fields, she demonstrates that Alexander resorts to harmonics in order to shape a specific philosophical model, namely an ontological one. Alexander rejects the idea that harmony can play a role in the constitution of being, and thus engages in a polemic against a view which, in its strongest formulation, has clear Pythagorean and Platonist echoes. But Alexander goes much further than this, for he rethinks the role of harmonic patterns in the constitution of beings by transforming it into an ontological model according to which it is possible to state that harmonic relations – that is, proportional ones – can grasp specific quantitative aspects of reality. Through a close reading of some relevant passages from Alexander's *De anima* and his commentaries on Aristotle's *Metaphysics* and *De sensu*, Castelli demonstrates that Alexander's enquiry – with its adoption of some Pythagorean elements and rejection of others – interestingly bears traces of a debate on formal causes within the Peripatetic tradition.

From a more general perspective, however, these Platonist and Peripatetic treatments of musical notions are framed within a broader intellectual context. As a matter of fact, the wide-ranging treatment of and appeal to music also highlight the need for a new and deeper understanding of the very status of music: *if* thinkers of the post-Hellenistic age appeal to music and harmonics in order to develop a proper philosophical reflection, what is the status of music itself in their view? It is particularly crucial to answer this question because it is far from clear whether music – and, more generally, the so-called 'liberal arts' – have any epistemic value, any therapeutic function, and – even more radically – any grasp on reality at all. This is what comes to the fore in Sextus' discussion of music, as emerges from **Máté Veres**' detailed analysis, which extensively discusses Sextus' well-known criticism of 'musicologists'. Veres first detects and explains Sextus' argumentative strategy, consisting in a complex synergy of arguments aiming to radically undermine the idea that music can have any ethical function, while at the same time suggesting that fundamental notions of music theory do not correspond to anything in reality, and thus that music itself is no science at all. On the one hand, this discussion is of particular interest as regards Sextus and his Pyrrhonian project, for Veres