PORPHYRY'S COMMENTARY ON PTOLEMY'S *HARMONICS*

Porphyry's Commentary, the only surviving ancient commentary on a technical text, is not merely a study of Ptolemy's Harmonics. It includes virtually free-standing philosophical essays on epistemology, metaphysics, scientific methodology, aspects of the Aristotelian categories and the relations between Aristotle's views and Plato's, and a host of briefer comments on other matters of wide philosophical interest. For musicologists it is widely recognised as a treasury of quotations from earlier treatises, many of them otherwise unknown; but Porphyry's own reflections on musical concepts (for instance notes, intervals and their relation to ratios, quantitative and qualitative conceptions of pitch, the continuous and discontinuous forms of vocal movement, and so on) and his snapshots of contemporary musicmaking have been undeservedly neglected. This volume presents the first English translation and a revised Greek text of the Commentary, with an introduction and notes designed to assist readers in engaging with this important and intricate work.

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PORPHYRY'S COMMENTARY ON PTOLEMY'S *HARMONICS*

A Greek Text and Annotated Translation

ANDREW BARKER





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Introduction

1 Porphyry's life and writings

Almost everything we know about Porphyry's life comes from remarks of his own, scattered here and there in his biography of Plotinus (*Vita Plotini*). The short account in Eunapius' *Lives of the Sophists*,¹ effusive though it is in Porphyry's praise, adds little of any substance, and few other writers tell us anything at all. We know that he was born in Phoenicia in AD 233 or 234, perhaps in Tyre, where he was brought up.² As a young man he studied for several years in Athens, mainly with Longinus, the most distinguished literary scholar and critic of his generation (Eunapius describes him as 'a living library and a walking shrine of the Muses'). Longinus was also a respected philosopher, the leading exponent and interpreter of Platonism in Athens.

In 263/4, at the age of thirty, Porphyry joined the circle of Plotinus in Rome, a city humming with cultural and intellectual activity. Plotinus and Longinus disagreed on substantial issues, and the former apparently regarded the latter as a philosophical light-weight, 'a man of letters but in no way a philosopher'.³ Possibly Porphyry had already formed a similar impression, but his move to Rome cannot have been motivated by a conviction that Plotinus' philosophical opinions were correct. He was not yet familiar with his opinions, let alone persuaded by them; he tells us that he misunderstood Plotinus' lectures when he first heard them, and wrote

¹ *Vit. soph.* 455–7 in Boissonade's 1822 edition; his pagination is reflected in the marginal numbers printed in the Loeb edition (Wright (1921)).

² His original name was Malchos, meaning 'king' in the local language. According to Eunapius it was Longinus who gave him the Greek name Porphyrios, 'purple' or 'crimson', with an eye to the colour's regal connotations (and perhaps also to the shared Phoenician origins of both Porphyry and the famous purple dye). He evidently adopted it as his regular name. Some of his colleagues in Rome called him Basileus, the standard Greek term for a king or emperor, but this was probably just an affectionate nickname used by his friends, including Longinus himself (*Vit. Plot.* 21), after Porphyry had moved from Athens to Rome.

³ Vit. Plot. 14. For Longinus' views on Plotinus and others see Vit. Plot. 19-21.

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an essay trying to demonstrate that his views on one important issue were wrong. It was only after a series of written exchanges with Plotinus' most faithful and long-standing associate Amelius that he finally grasped the force of Plotinus' reasoning and the truth of his conclusions (*Vit. Plot.* 18).

Porphyry stayed with Plotinus for six years; they became close friends, and Plotinus entrusted him with the task of revising his writings for publication (*Vit. Plot.* 7). He devoted himself to the project after his master's death. It cannot have been an easy matter. Plotinus' eye-sight was poor, and Porphyry had to cope with his sprawling handwriting, with his carelessness over spelling and other elementary points of presentation, with problems of sense and coherence arising from his refusal to re-read and polish anything he had written, and with the fact that the corpus was an enormous mass of disconnected essays bundled up in no intelligible order. It seems quite likely that Plotinus chose Porphyry as his editor as much for his literary skills and sensibilities – honed, as presumably they were, during his time with Longinus – as for his philosophical acumen.⁴ But whatever his reasons were, Plotinus chose well, at least in picking an editor who would not shirk his responsibilities. The outcome is the work we know as the *Enneads*.

By the end of his first six years in Rome Porphyry faced a personal crisis whose exact nature and causes we do not know, and from his brief statements in *Vit. Plot.* II we might infer that he did not know them himself. A modern doctor might have diagnosed his condition as clinical depression. He was contemplating suicide, but Plotinus dissuaded him, advising him that he might recover his zest for life if he left Rome for a time. He took the advice and travelled to Sicily, where it seems that he found that Plotinus (as always) had been right.

News of Plotinus' death (AD 270) reached him there a few months later. Whether he went back to Rome immediately or extended his absence is unclear, nor can we be sure whether he inherited the headship of a formally established 'school' from Plotinus on his return; but he evidently came to be recognised as the leading figure among Plotinus' followers and as the foremost philosopher in the city. Apart from the record of his copious writings and his work on the material Plotinus had left, we know few details of this phase of his career except that he married a friend's widow, Marcella, to whom one of his essays is addressed. (According to Eunapius,

⁴ Eunapius writes in glowing terms of the clarity and beauty of Porphyry's style. He himself is no stylist and he may be an unreliable judge; and no one reading Porphyry's surviving works now will find these virtues on every page (they are conspicuously absent from much of the commentary translated here). But at certain points in his writings (in passages of the *ad Marcellam*, for instance, and in some of the longer *Sententiae*) we may be able to see what Eunapius had in mind.

2 The commentary – general profile

he married her to ensure that his friend's numerous children should be given a good education.) The *Life of Plotinus* was published in AD 301 or shortly afterwards, and Porphyry probably died only a little later, but our information is not very precise. Eunapius tells us only that he reached 'an advanced old age'. The *Suda* is a little more helpful, saying that he lived 'into the time of the emperor Diocletian', which probably means that he died before AD 305 when Diocletian abdicated. If we use that as a marker, Porphyry was about seventy years old when he died. But Diocletian lived on for another seven years or so, and it is possible, though much less likely, that the *Suda*'s source reckoned 'the time of Diocletian' as ending only with his death.

Fifteen of Porphyry's works survive either complete or as incomplete texts containing a large proportion of the whole, and we also have a substantial body of shorter fragments.⁵ On the basis of cross-references in Porphyry's own surviving writings, and of the treatise titles, quotations and reports provided by later authors, recent scholars have tried to establish the number of works that he actually wrote; the highest estimate I have come across is 81 and the lowest is 59.⁶ They included essays on metaphysical issues, incorporating influential developments of thought beyond the doctrines of Plotinus and perhaps sometimes in conflict with them; commentaries on Aristotle's treatises in logic, metaphysics, physics and ethics; commentaries on several of Plato's dialogues; a history of philosophy from its beginnings to Plato; various other historical writings; commentaries on the Homeric poems, and essays on other philological topics; a large number of works on religious traditions and rituals; and a handful of pieces on technical subjects, one of which is his commentary on Ptolemy's *Harmonics*.

2 The commentary on the Harmonics: General profile

Porphyry presents his work as a 'commentary' in the strict sense of the word.⁷ After a brief but thought-provoking introduction he works his way systematically through Ptolemy's text in its original order, usually prefacing each phase of his discussion with a lemma quoting the passage of the *Harmonics* which it is designed to elucidate, and in most cases

⁵ For the most authoritative collection of fragments see Smith (1993).

 ⁶ The higher estimate is that of Romano (1979): 217-21. The more conservative and more recent assessment is that of Smith (1993): L-LIII (he adds six others which in his view are certainly or probably spurious).
⁷ The most important MSS include the regular term for a commentary (*hypomnēma*) in its title. In

⁷ The most important MSS include the regular term for a commentary (*hypomnēma*) in its title. In his introduction Porphyry refers to it as an *exēgēsis*, an 'exposition' or 'explication' (3.17, 4.24, 5.18, cf. 4.23).

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the successive lemmata leave no gaps in Ptolemy's text.⁸ Porphyry plainly intended his commentary to cover each chapter of the *Harmonics* in full and to respect the continuity of its arguments; it was not designed merely as a set of reflections on selected excerpts.

He says in his introduction that he will aim, for the most part, at 'due proportion' (symmetria) in his dealings with the text (4.22-4). He can hardly mean that he will make the length of his discussions proportionate to that of the passages they address, since in this respect his treatment of the lemmata is very uneven. A single sentence may provoke several pages of comment, while much longer passages attract only a cursory glance. He must mean that the length and depth of his discussions will be governed by his estimate of the importance of the passages they consider and that of the issues they prompt him to examine, and in that case their length, and perhaps also their degree of complexity, depends as much on his own intellectual interests and priorities as on Ptolemy's. This point will clearly have a bearing on the fact that while the disparities in his treatments of passages within any one chapter are rarely obtrusive or surprising, there is a striking imbalance between his discussions of the earlier and later parts of Ptolemy's text. The commentary runs to 172 pages in Düring's edition and covers 55 pages (22 chapters) of the Harmonics. But by the end of I.4, after dealing with eight of Ptolemy's pages, 87 pages of the commentary have gone by and we have passed the half-way point; and for the text of I.5-I.8 (a little over nine pages in Ptolemy) there are 34 pages of commentary. At the end of I.8 we are already more than two thirds of the way through the commentary, with only 51 pages left for the remaining 14 chapters (about 38 of Ptolemy's pages).

Some sections of the commentary are swollen by another of its most striking features, that is, its profusion of quotations from earlier writings. Several of them are very long, substantially increasing the length of the sections in which they appear, and by far the majority of them appear in the commentary's first few chapters.⁹ The longest single quotation runs from 67.24 to 77.18, nearly ten pages in Düring's edition; it forms part of the twenty-two-page commentary on *Harm.* 9.6–15, which incorporates about seventeen pages of quotations. This is an exceptional case; many

⁸ But there are certain omissions. On this matter and other issues to do with the lemmata see Section 10 below.

⁹ The flood of quotations dwindles to a trickle after I.5. In I.6–7 there are just a few lines of quotation, and I.9 and I.12 contain about half a page each. No quotations appear in I.8 or I.10–11, and in the ten chapters from the beginning of I.13 to the end of II.7, where the commentary breaks off, there are none at all.

2 The commentary – general profile

of Porphyry's quotations are only a few lines long, and only a handful cover more than a couple of pages. But there are a great many of them, mostly from works by philosophers or musical theorists, but also from mathematicians, natural scientists, grammarians and other scholars and occasionally from poets.¹⁰ Porphyry makes a point of saying plainly in the introduction that he intends to make use of what his forerunners had said; he will not try to pass off these borrowings as his own, as some writers had done, but will conscientiously name the authors whose work he transcribes (as indeed he does, with very few exceptions). He denies that the practice should be held against him as plagiarism, defending it on the grounds – all the more piquant now, in a world where the internet is king – that what has been written, and especially what has been well said, is public property available for everyone's use (4.24–5.16).

The more one examines these quotations and their contexts, the clearer it becomes that they are not there merely for their antiquarian interest, or to show off Porphyry's extensive learning, or to conform to an established canon of conventions like those governing a modern Ph.D. thesis, or simply to save time, as he rather naively puts it at 4.25–6. On the contrary, they contribute substantially to his arguments, exemplifying and adding detail to the points that currently concern him, developing the grounds for his conclusions, setting them in the context of ancient and on-going debates, playing different authors off against one another, and sometimes (as notably in his quotations from Plato and Aristotle at 46.5-13 and 47.15-23) providing a springboard from which he can launch himself into controversial territory. At the end of the same passage, he uses long quotations from Theophrastus and Panaetius (61.22-67.10) to give additional authority to the contentious conclusion he has reached. Although he does not always directly explain their bearing on the issues in hand, it turns out on inspection that in almost all cases the quotations have been carefully integrated into his agenda at appropriate moments, and contribute intelligibly to his line of thought.

We cannot be sure when the commentary was written. In view of its huge collection of quotations we can certainly say that wherever Porphyry was when he wrote it, he had a well-stocked library at his disposal; but that would be the case whether he was in Athens or in Rome, though perhaps not in Sicily. So far as the musicological content of the work is concerned, it might have been composed at any time in Porphyry's life, and almost

¹⁰ I have not tried to quantify the total amount of quotation exactly. But on a rough count it amounts to about forty-three of Düring's pages, a quarter of the commentary's length.

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all the philosophical indications can be taken to point either backwards to pre-Plotinian Platonism or forwards to the works of Porphyry's maturity, into which he absorbs as much from Middle Platonist writers as he does from Plotinus himself. Its lack of literary polish, except in a few isolated passages, might incline us to doubt that Porphyry wrote it while he was still under the influence of Longinus in Athens; but style is an uncertain guide, and the elegance desirable in a free-standing, discursive work may not have seemed necessary or appropriate in a commentary on a technical treatise.

But the text gives one fairly clear pointer to a date in the later part of his career. At 115.27-116.1, referring to the scale constructed in Plato's Timaeus, he says that he gives an explanation of its exceptionally large compass in other writings. This is not a promise of some future enterprise; his 'we give' is in the present tense, implying that the writings already exist. It must almost certainly refer to his commentary on the Timaeus (now surviving only in fragments), and this is most unlikely to have been an early work. In any case my own opinion, for what it is worth, is that the commentary is not a piece of juvenilia. It is the work of a mature philosopher with many years of dedicated scholarship and reflection behind him (see further Sections 6 and 7 below). He draws freely, as we have seen, on the writings of earlier philosophers, especially Plato and Aristotle, and of mathematicians and other scientists as well as specialists in musical theory, offering perceptive interpretations and deploying them judiciously in the service of his project; and at least on philosophical issues he presents his own independent contributions with confidence and flair. Although he has less of his own to offer when he focuses on more specifically musicological matters, what he does contribute is carefully considered and by no means negligible.

The commentary has not been translated into English before, but translations, it appears, behave much like London buses; after long stretches of time in which there's no sign of any at all, several turn up at once. Just so, this translation coincides almost exactly with another, an Italian translation by Massimo Raffa.¹¹ Perhaps this is not just a coincidence. Specialists in ancient Greek musical theory have often drawn on this text, though almost always for its quotations from other sources, and in recent decades their subject has ceased to be the preserve of a handful of eccentrics; there are very many more of us now. Over the same period the study of Greek philosophy in later antiquity has also moved from the fringes into the main stream,

^{II} For his previous translation of Ptolemy's *Harmonics* see Raffa (2002).

3 The commentary as a fragment

and the rich philosophical reflections in the first few chapters of Porphyry's commentary have attracted considerable attention. In the same time-frame the study of ancient commentaries in general has made great progress, due especially to the work of Richard Sorabji and his collaborators, who have published a massive array of translated ancient commentaries on Aristotle.¹² It rather looks as if this commentary's time has come.

3 The commentary as a fragment

The commentary is not complete. Two pieces are missing, one short and one very long, and in both cases we should try to decide whether they were lost at some early stage in the process of transmission, or whether we do not have them because they were never written. The shorter passage is at the end of Book I; each of Ptolemy's three Books had sixteen chapters, and there is no commentary on I.16. That might, in principle, be for any of four reasons: the text of Ptolemy available to Porphyry might have lacked this chapter; or he might have found nothing in it that he thought worth discussing; or he might have postponed the task in order to do further research before tackling it but never in fact returned; or he wrote it and it was subsequently lost.

The first of these possible reasons can be dismissed immediately. Porphyry refers to the content of Ptolemy I.16 in the course of his discussion of II.1 (which deals with aspects of the same topic from a different angle), and it is clear that he knew it. The second is initially tempting. Ptolemy's chapter moves away from the theoretical derivations of scale-structures with which he had previously been occupied. It tells us that with just one exception they do not reappear in their theoretically unadulterated forms in music that is actually performed, and that some of them are not found there at all; and it explains how those of them that contemporary musicians used were combined and sometimes modified in their patterns of attunement. Together with the later passages which complete his account of these attunements (II.1 and II.16), it is of great interest to students of ancient musical practice, but one might suppose that an abstractly minded philosopher would have found nothing in it to whet his appetite. But this will not do. For one thing, there are certainly philosophical questions to be raised about the extent to which Ptolemy's manipulation of his theoretical results in this chapter is consistent with his previous declarations about scientific

¹² Sorabji (1989–). Over sixty volumes have been published to date, and the series continues to grow. See also Sorabji (1990).

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methodology. Again, Porphyry had already worked his way through seven chapters in which he had scarcely fluttered his philosophical wings, and would doggedly continue to do so through parts of Book II; he is unlikely to have abandoned his task in this isolated case. More conclusively, he addresses Ptolemy's second visit to the subject in II.1 with enthusiasm and at considerable length (introducing modifications which have posed severe problems for modern interpreters; see Section 5(c) below), and he clearly assumes that his readers are already familiar with the content of his missing chapter. Hence the second possible reason must be rejected. The third remains hypothetically feasible, though the considerations that undermine the second make it fairly improbable, and I would judge that the fourth is almost certainly correct: the commentary on this chapter was written but was subsequently lost. This hypothesis gains support from defects in the manuscript texts at the end of the preceding chapter, I.15, which not only leave minor uncertainties and lacunae but also lack any comments on the final sentences of Ptolemy's discussion. Further, if I.15 originally ended at the point where our text of the chapter runs out, and if that were also the end of the whole commentary on Book I, we would expect to find appropriate indications in those of the MSS that mark chapter-endings elsewhere; but there are none. It seems probable, then, that the last lines of the commentary on I.15 have been lost, and that Porphyry's discussion of I.16 was lost with them.¹³

The long omission is less easily explained. In its surviving form Porphyry's commentary breaks off at the end of II.7, leaving nine further chapters of Book II and the whole of Book III untouched. The absence of any discussion of Book III is especially regrettable. We could have learned much from Porphyry's reflections on the philosophical musings of III.3, and on the subsequent chapters in which Ptolemy puts harmonic theory to work in the service of human psychology and the study of the heavens. He could also have preserved valuable information about the content of Ptolemy's last three chapters, which were wholly or partly lost at an early stage of the text's transmission and of which we now have only the reconstructions offered by Byzantine editors.

We shall probably never know whether Porphyry completed his commentary or not. One day some lucky Egyptologist might conceivably stumble on a hoard of papyri that would settle the question, but as things stand we have no evidence – or at least no evidence outside the commentary

¹³ In this connection an anonymous reader makes the point that the MSS also omit the ends of all Proclus' lemmatic commentaries on Plato.

4 The philosophical content

itself - to support any judgement at all. Internal evidence cannot give us a definite answer (there are, for instance, no references forward to any part of the commentary after II.7, which might at least have clarified Porphyry's intentions), but it makes me lean tentatively to the view that he abandoned the task or put it aside in favour of other projects. Perhaps he intended to come back to it one day, but in the event he never did so. By the point at which the text runs out he had already laboured through a long series of technically demanding chapters in which he had found little fuel for independent thought, and there were a dozen more in a similar vein to come before he could emerge into the philosophically alluring uplands of III.3 and its sequels. It would not be very surprising if he lost his appetite for the task and left it unfinished; even the almost indefatigable Porphyry might have found it too wearisome to contemplate. There is also another, perhaps more compelling reason why he might have thought it pointless to continue, but I must postpone it until we have considered his purposes in writing the commentary (Section 7 below). None of this comes anywhere near to proving my hypothesis, of course. Maybe he soldiered on to the end, and the later parts of the manuscript from which all ours are derived were mislaid by a careless librarian.

4 The philosophical content of the commentary

Porphyry is not known for any other works on music or musical theory.¹⁴ His interests spanned a wide range, but he was above all a philosopher, and it is primarily as a philosopher that he addresses Ptolemy's text.¹⁵ The genre of commentary had long been established as the most important vehicle for original philosophical and philological thought, a fact that observations by David Sedley may do much to explain (he is initially referring to the way in which Stoics in the first century BC treated an outdated thesis propounded by Zeno of Citium). 'Now, such was the commitment in philosophical schools to the truth of the founder's word that subsequent Stoics could not simply disown this argument and its implications. Philosophical debate within schools was presented as recovery and interpretation of the founder's

¹⁴ He certainly discussed the musical construction of the World Soul in his commentary on the *Timaeus*; see Procl. *In Tim.* vol. 2, 214.6–215.4 Diehl = Porph. *In Tim.* fr. 69 Sodano. But Proclus does not cite Porphyry when examining the mathematical technicalities of the construction, and we know nothing of any detailed analysis he may have offered.

¹⁵ For a general assessment of the light shed by the commentary on Neoplatonist thought see Gersh (1992). There is a useful conspectus of recent work on its philosophical aspects (focused especially on I.1 and I.3) in Chiaradonna (2012).

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true views, not as their replacement or revision.¹⁶ Porphyry, of course, was not signed up to any Ptolemaic *hairesis* – no such 'school' existed – but he presents arguments against Ptolemy's views only twice, once over a major issue (see Section 4(b) below) and once on the details of a definition (of no great importance in its context, though with significant implications for modern classicists; see pp. 42–3 below). Throughout the rest of the commentary he treats Ptolemy with much the same kind of respect as was given to the founder of a school by its adherents.

One of the features of the *Harmonics* that especially attracted Porphyry was the philosophical richness of its reflections on scientific method, and on the roles of sense-perception and reason in the proper conduct of investigations in the science that concerns him here.¹⁷ Only the first two of Ptolemy's chapters are devoted almost exclusively to these topics (they amount to three pages, to which Porphyry gives twenty-four pages of discussion), but both writers return to them from time to time elsewhere (for instance towards the end of Porphyry's I.7), and repeatedly draw attention to the ways in which Ptolemy is applying the principles he has established. In I.3-5 Porphyry finds further opportunities for elaborate philosophical excursions of other sorts, and though I.6-7 are designed mainly to explain the technical terminology that Ptolemy uses in these chapters and to elucidate his musicological arguments, they too repay reading with the eyes of a philosopher, and have a good deal to interest historians of mathematics. But from I.8 onwards the Harmonics offers less grist to a philosopher's mill (though for non-philosophical reasons Porphyry has a good deal to say about that chapter too), and this is clearly one reason why Porphyry's comments become so much more perfunctory from I.9 onwards. From a philosopher's perspective, the first five chapters of the commentary are the most challenging and important. I cannot examine their arguments closely here, but after sketching some of their most prominent topics I shall add a little more detail about two particularly remarkable passages.

Ptolemy opens the *Harmonics* by defining his science, harmonics and its subject-matter; what harmonics studies, he says, are the differences

¹⁶ Sedley (1998): 68–9. In Sedley (1997): 114 with n. 11 he argues that the origins of this use of the commentary form go back to Crantor's commentary on the *Timaeus* in the early third century BC; he finds no evidence for the contrary view of Dörrie and Baltes (1987–2002) vol. 1: 328, vol. 11: 166. Commentaries on Aristotle first appeared around the end of the Hellenistic period: see especially Gottschalk (1990), Sedley (1997). For Porphyry as the first Platonist commentator on Aristotle see Karamanolis (2004).

¹⁷ These aspects of the *Harmonics* are discussed in Barker (2000). For Porphyry's preliminary comments on Ptolemy's philosophical credentials see 4.16–21.