



REVIEWS

POETRY OF NUMBERS IN GRAECO-ROMAN
LITERATURE

LEVENTHAL (M.) *Poetry and Number in Graeco-Roman Antiquity*. Pp. xii + 231. Cambridge: Cambridge University Press, 2022. Paper, £29.99, US\$39.99 (Cased, £74.99, US\$99.99). ISBN: 978-1-009-12417-1 (978-1-009-12304-4 hbk). Open Access.
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While modern writers have repeatedly stressed how close poetry is to mathematics (think of V. Nabokov or see now J. Growney's blog *Intersections – Poetry with Mathematics*), historians of Greek literature have kept the two fields strictly apart (R. Netz's *Ludic Proof* [2009] being the brilliant exception). Now L. sets out to explore these two areas of expression, expertise and tradition with great acumen, concentrating upon points or, rather, lines and even planes of convergence, that is, numbers in Greek and, less prominently, Roman poetry, from the *Iliad*'s catalogue of ships to late antique epigrams in the *Palatine Anthology*. His perspective throughout is one of literary history rather than one of mathematics. Numbers, counting and calculation appear as poetic means of expression in texts ranging from Homer to Metrodorus and Ausonius. Accordingly, L. applies the same toolbox to these phenomena that we know from, for example, scholarship on Hellenistic poetry, above all, intertextual meaning-making, assisted by plausible assumptions concerning elite communication of which both mathematical competences and knowledge of the poetic tradition were a part. Thus, the slender volume opens up new vistas on an aspect of the poetic tradition that up to now has gone largely unnoticed. In addition, L.'s argument has some impact on the history of mathematics, too, because the poetry discussed provides glimpses of elite mathematics, but not the one of the mathematicians proper (with the notable exception of Archimedes' *Cattle Problem* [CP]). In its structure L.'s book follows the two basic practices of numeracy, counting and calculating.

First, counting: right at the beginning of Greek literature, L. reminds us, numbers play a crucial role. The *Iliad*'s catalogue of ships, being an impressive feat of numbers, is introduced by the famous motif of the ten tongues, which already highlights the carnival of numbers that is to follow. L. shows how this passage triggered numerical interpretation from Thucydides to the Homeric scholia, all the way to the *Certamen*. Similarly, when reading the *Odyssey*, ancient audiences kept count of deceased *hetairoi* (there, these numbers supply a subtle background-narrative that accompanies the *apologoi*). Obviously, metre has a numerical structure. Thus, metrical experiments, for example in the fragments of Castorion, exhibit, at the same time, numerical awareness. A major witness, for L., is the much-discussed prologue to Callimachus' *Aetia*, in which numbers and counting play a certain role among the refuted criteria for evaluating poetry. Already in *Frogs* we discern practices of enumerative appraisal, rejected by Aristophanes' Aeschylus in favour of qualitative criteria. However seriously we are taking such passages, we have to concede to L. that they hint at the relevance of counting in poetical and critical practice. L. has thoroughly trawled through Greek (and Roman) literature for numbers, which is eye-opening in itself. He manages to persuade us that many of these passages open up intertextual relations with one another, for example Antipater's and Antiphanes' epigrams on Erinna

that refer to the *Aetia* prologue and its case against counting as a means of criticism. Almost as an aside, Catullus chimes in with erotic themes and their resistance to measurement, which L. understands as a reworking of Callimachus' opposition, thus illustrating well the quasi-Dionysiac dynamics of intertextual reading. Less charming, but intellectually more demanding than Catullan kiss-counting are the isopsephic epigrams of Leonides of Alexandria (mid-first century CE), who turns Callimachean topics in a new direction and, besides, continues the dynastic aspects of court poetry (Berenice turning into Agrippina etc.). Again, L. reads these epigrams as attempting to reformulate Callimachean poetics just by introducing counting back into criticism.

Second, calculation: L. looks at arithmetical content in poetry. He begins with the famous spit-calculation in the *Certamen*, which seems to pointedly leave open the actual sum of participants. Then, L. settles on what is, next to the *Aetia* prologue, the book's centre, Archimedes' *CP*, addressed to Eratosthenes. L. manages to wrestle from this notorious text new layers of meaning that relate, in addition to arithmetic (the problem being unsolvable for Eratosthenes, note p. 123 n. 18 on the history of solutions since Gauss), to the poetical tradition, mostly Homer, but also to the geography of political power. *CP*, L. convinces us, refers back to, among other texts, the *Odyssey* (pp. 12, 127ff.). L. offers a great range of intertextual implications, for example, Archimedes as adopting the role of Circe and casting Eratosthenes into that of Odysseus. The scholia to the *Odyssey* show that scholars thought about the number of Helios' cattle and that these verses created a Homeric problem already in fourth-century philology. Another field of hidden meaning is Homeric and political geography, especially when we realise that *CP*'s addressee, Eratosthenes, stood for a triple agenda, that is, new poetry, Homeric geography and Ptolemaic power play, to all of which Archimedes subtly and polemically relates (by the way, what about another text by Archimedes addressed to Eratosthenes, that is, the *Method?*). At the same time, *CP* is a riddle and thus asserts Archimedes' superior status as a mathematician. Thus, we can, guided by L., read this under-appreciated text even as a discourse on the limits of human knowledge: there are no Muses in Archimedes; thus, no reader will be able to give the required number. As always, once the intertextual machine has taken up its work, it is difficult to tell where to stop: in L.'s case, the Iliadic assonances of *CP* do not, I think, carry far enough in identifying certain Iliadic heroes as pre-figurations of Archimedes' readers (pp. 144–5). However, L. is certainly right when he maintains that the topic of mastery and control (of Homeric knowledge, of political power) is at issue, especially since the text is addressed to Eratosthenes. Thus, calculation becomes a form of geographical possession. Duly, L. adduces several illuminating passages of the 'poetics of census-taking' (p. 151), for example, Theocritus' *Encomium to Ptolemy* (*Id.* 17.79ff.; cf. *Id.* 16.90–1 to Hiero) or Lycophron's scene of sow-numbering (*Alex.* 1253ff.). And does not Odysseus finally claim his land by reciting correct numbers of trees?

One of the great strengths of L.'s book is the way in which he effortlessly juxtaposes well-known with rather marginal texts (marginal to us, that is), for example the contest between Calchas and Mopsus over the number of figs in the *Melampodia* (Hesiod, fr. 278 M.-W. = Strabo), again a narrative with implications both of arithmetic competence and of political ambition. (I believe that the genre of riddles within a competitive world of experts offers the best background for understanding Hellenistic mathematical communication and, especially, Archimedes' *CP*.) Archimedes' riddle leads to frustration and, thus, extols Sicily's glory as arithmetically (= politically) uncontrollable, i.e. it presents a case of patriotic arithmetic.

The book's last quarter deals with the arithmetical poems in *Anth. Pal.* 14 as indexing cultural capital and late antique reading practices. Again, L. makes the salient point that the

literary tradition is just as important for understanding these texts as the arithmetical one. Unexpected topics show up, such as calculation in funerary or sympotic epigrams, with their specific intertextual intricacies. By adducing Ausonius and Optatian, L. contributes a great deal towards our understanding of how numeracy, in a late antique Roman world, played in with other forms of cultural capital. L. ends his argument with the elusive Metrodorus, that is, a collection of arithmetical epigrams in the *Palatine Anthology* (14). Unlike former readers who essentially classified these texts as mere oddities, L. lovingly understands them as key witnesses to ancient actors' concepts of cultural heritage and its metapoetic resonances. By themselves, these texts illustrate dialogues between poetical and mathematical learning; thus, L. emblematically concludes the chapter with a paragraph on *Anth. Pal.* 14.1, a dialogue between Pythagoras and Polycrates. L. ends with the important point that, unlike mathematics proper, these poems explore the *cultural* value of numbers; accordingly, an unexpected parallel opens up: 'Reading poetry is also an operation' (p. 211), as L. states.

To sum up: this book is essential reading for anyone interested in ancient Graeco-Roman literature, from archaic to late imperial times; if there is one thing I miss, that would be a chapter on hermeneutics, that is, conventions of doing non-arithmetical things with numbers that go beyond intertextuality, for example, pre-cabbalistic constructions of meaning that we know from Judaeo-Christian literary practice.

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INTERACTIONS BETWEEN GREEK AND LATIN EPIC

CARVOUNIS (K.), PAPAIOANNOU (S.), SCAFOGLIO (G.) (edd.)
Later Greek Epic and the Latin Literary Tradition. Further Explorations.
(Trends in Classics Supplementary Volume 136.) Pp. viii + 216. Berlin
 and Boston: De Gruyter, 2023. Cased, £100.50, €109.95, US\$114.99.
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This collection of papers offers a useful examination of the relationship between late Greek epic and the Latin tradition (with a focus on Latin epic), favouring reader-response models and attempting to sidestep the question of direct allusions by Greek poets to their Latin predecessors. As the editors state, 'there is no way to determine if really a single Greek poet read and imitated a specific Latin model . . . but the *coup de grace* is the possibility that analogies between Greek and Latin texts derive from a common (Greek) model' (p. 3). Most contributions, thus, aim to perform comparative readings of late Greek and Latin poetry – and to this extent the collection can be read as the continuation of another recent volume: B. Verhelst and T. Scheijnen (edd.), *Greek and Latin Poetry of Late Antiquity: Form, Tradition, and Context* (2022).

U. Gärtner opens the collection with 'Latin and Later Greek Literature: Reflections on Different Approaches'. This is a largely methodological paper with Quintus of Smyrna