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978-0-521-83746-0 - Archytas of Tarentum: Pythagorean, Philosopher and
Mathematician King

Carl A. Huffman

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ARCHYTAS OF TARENTUM

Archytas of Tarentum is one of the three most important philosophers in the Pythagorean tradition. He was a prominent mathematician who gave the first solution to the famous problem of doubling the cube, an important music theorist, and the leader of a powerful Greek city-state. He is famous for sending a trireme to rescue Plato from the clutches of the tyrant of Syracuse, Dionysius II, in 361 BC. This is the first extensive study of Archytas' work in any language. It contains original texts, English translations and a full commentary for all the fragments of his writings and for all testimonia concerning his life and work. In addition there are introductory essays on Archytas' life and writings, his philosophy, and the question of authenticity. Carl A. Huffman presents a new interpretation of Archytas' significance both for the Pythagorean tradition and also for fourth-century Greek thought, including the philosophies of Plato and Aristotle.

CARL A. HUFFMAN is Professor of Classics at DePauw University. He is the author of *Philolaus of Croton: Pythagorean and Presocratic* (1993) and contributor to *The Cambridge Companion to Early Greek Philosophy* (ed. A. A. Long) (1999).

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For Martha, David, Peter and John

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Preface

The last book devoted to Archytas was published over 160 years ago (Gruppe 1840). Even that work was not really a study of Archytas' thought but rather an unsuccessful attempt to argue that no authentic fragments of Archytas had survived from antiquity. It is not an exaggeration to say, then, that there has never been a book-length study of Archytas of Tarentum. There have not even been many shorter treatments. Erich Frank gave Archytas a fairly prominent role in his reconstruction of early Pythagoreanism (1923), but that reconstruction was eccentric and has been largely rejected by scholars. Essentially the only commentary has been that in Italian by Maria Timpanaro Cardini, as part of a three-volume commentary on all the Pythagoreans (1958–64). In recent years there have been a few important articles and sections of larger works dealing with isolated aspects of Archytas' work, notably his harmonic theory (e.g. Barker 1989, 1994; Bowen 1982; Cambiano 1998 and Lloyd 1990), but to say that Archytas has been neglected would be an understatement. Nonetheless, Archytas is one of the three most important figures in ancient Pythagoreanism (along with Pythagoras himself and Philolaus); we cannot hope to understand ancient Pythagoreanism without understanding Archytas. He was also an important philosopher, mathematician and political leader in his own right. Most scholarship on Greek philosophy during the first half of the fourth century has been devoted to Plato and the Academy. Archytas is a crucial figure for any attempt to understand Greek philosophy and mathematics outside of the Academy during this period and thus for understanding the broader environment in which both Plato and Aristotle developed as philosophers. It is astounding that Archytas, who represents the developed Pythagoreanism that "makes a direct and personal impact on Plato himself" (Guthrie 1962: 333) and whom Gregory Vlastos has called a "master metaphysician" and "a new model philosopher for Plato" (1991: 129), has never been the subject of a complete study.

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My first goal is to provide as complete and as reliable a collection of the fragments and testimonia of Archytas as possible. Since this evidence is full of difficulties and much of it little studied, my second goal has been to provide a detailed commentary that addresses the major philosophical and philological issues. Finally, since the evidence is disparate and often technical, scholars have found it difficult to attain an overview of Archytas' achievement. I have tried to fill this lacuna with the introductory essays on Archytas' life and philosophy. The detailed arguments in support of the points made in the overview of Archytas' philosophy are found in the commentaries on the individual fragments and testimonia. One of the reasons that Archytas has been neglected is the technical nature of some of the evidence. I write primarily as a historian of ancient philosophy and a philologist. I have tried to make Archytas' technical work in mathematics and harmonic theory clear to other students of ancient philosophy and philology, but I am not a professional mathematician. Certainly I have no illusions of having produced that mythical beast, "the definitive edition"; my hope is that this edition will provide a reliable basis on which study of Archytas can build and that my interpretation of Archytas' philosophy will stimulate further work.

The standard collection of the fragments and testimonia of Archytas has been that in *Die Fragmente der Vorsokratiker* by H. Diels as revised by W. Kranz (6th edn. 1951–52, referred to as DK). DK collects the most important testimonia but does not pretend to be complete. In order to avoid confusion I have followed the numbering of fragments and testimonia in DK but have added approximately fifty testimonia to those found there. In some cases these are just additional sources, where DK has given the most important (e.g. A7 [the anecdote about not punishing in anger], A15 [doubling the cube], Fr. 1). There are a few brief reports having to do with Archytas' philosophy which DK overlooked (A7a [mentioned in the afterword but not included in DK]; A11a; A13, Text G; A19c; A21a). DK do not mention Iamblichus' reports about Archytas' role in the history of means (Fr. 2, Texts A–D) nor most of the references to Archytas in Iamblichus' *On the Pythagorean Life* (A6b). DK did not include a large number of testimonia having to do with Archytas' life and reception (e.g. Archytas as the teacher of Eudoxus: A6c; relations with Plato: A5a1, A5a2, A5b2, A5b3, A5b4, A5b5, A5b6, A5b7, A5b8, A5b9, A5b10, A5b11, A5b12, A5b13, A5c2, A5c3, A5c4, A5c5; reception A3a, A3b, A3c, A3d, A3e, A3f; miscellaneous reports about his life: A1a, A1b, A1c, A1d, A1e, A1f, A1g, A6a, A6d, A6e, A6f, A6g, B5a, B8b).

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I print the same four fragments as DK, but the texts of those fragments differ from DK in a number of important ways. DK's version of Fragment 1 is particularly unreliable. With one major exception I have not done new collations of manuscripts for either the testimonia or the fragments and have instead relied on the best published editions. Fragments 3 and 4 come from Stobaeus, and my examination of the manuscripts of Stobaeus for my earlier work on Philolaus suggested that there would be little value in examining these manuscripts for Archytas (Huffman 1993: xvi). The exception is the manuscripts of Porphyry's commentary on Ptolemy's *Harmonics*. Porphyry is the major source for two of the fragments of Archytas (1 and 2) as well as two important testimonia (A17 and A18). Professor Thomas Mathiesen kindly made available to me his copies of the five major manuscripts of Porphyry's work so that I was able to carry out fresh collations of them (E = Vaticanus gr. 186, V¹⁸⁷ = Vaticanus gr. 187, G = Vaticanus gr. 198, M = Venetus Marcianus gr. app. cl. VI/10, and T = Vindobonensis int. phil. gr. 176). My collations have revealed Düring's reports of these manuscripts to be quite unreliable. While the new readings do not radically change the meaning of the text, they have caused me to print a different text in a number of places, and I have given a full report of my findings in the apparatus. The translations of fragments and testimonia are my own unless otherwise indicated.

The dialect of the fragments presents a particularly thorny problem. The manuscripts preserve a hodgepodge of Attic, Doric and even Lesbian or Epic forms. There have been two basic approaches. We can try to restore the text uniformly to the Doric forms which we think that Archytas, as a native of Tarentum, was likely to have used. The difficulty is that there is no good model of fourth-century Doric prose to follow in restoring those forms. In the ancient world, Archytas was the model (see A6g). Blass (1884) corrected all forms to correspond to the Doric of the Heracleian Tables, but it is far from clear how close the Doric of the tables is to what Archytas might have used, and Blass' reconstruction undoubtedly differs from what Archytas wrote. The second approach is that followed by most editors, including DK, i.e. to print a text based on the best evidence of the manuscript tradition without, for the most part, trying to reconstruct unattested Doric forms. The result is a text which reflects the combination of Attic and Doric forms found in the manuscripts so that e.g. an Attic infinitive form will be found in one line and a Doric infinitive form in the next. Clearly such a text cannot reflect what Archytas wrote either, but, when one tries to correct even the most obvious conflicts between Doric and Attic forms, two problems arise, the above mentioned problem

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of what model of Doric prose to follow and the question of when to stop correcting. As a result of these difficulties, I have opted to follow the general approach of DK and thus only print the Doric forms when they are either found in the manuscripts or strongly suggested by the manuscript readings. My collations of the manuscripts of Porphyry have allowed me to restore some Doric forms. In a few instances, where the forms suggested by the manuscript tradition are extremely unlikely to have been used by Archytas, I have restored the typical Doric form (e.g. I have followed Cassio (1988) in printing $\delta\iota\alpha\gamma\nu\omega\mu\epsilon\nu$ in Fr. 1, line 1).

Greek authors are generally cited according to the abbreviations used in the *Greek–English Lexicon* of H. G. Liddell and R. Scott revised by H. S. Jones, with Supplement (1968 – referred to as LSJ). I have referred to Plato according to the Stephanus pages given in Burnet’s Oxford Text; the treatises of Aristotle according to Bekker’s Berlin edition; the fragments of Aristotle according to the numbering of the third edition of Rose (1886). Modern works are generally referred to by the author’s last name and publication date. The abbreviations used for periodicals are generally those of *L’Année philologique*. Common abbreviations:

- CAG* (1882–1909) *Commentaria in Aristotelem Graeca* (Berlin)
DK Diels, H. (1952) *Die Fragmente der Vorsokratiker*, 6th edn., rev. W. Kranz, 3 vols. (Berlin), first edn. 1903
FGrH Jacoby, F. (1923–) *Die Fragmente der Griechischen Historiker* (Berlin)
OCD Hornblower, Simon and Spawforth, Antony (1996) *The Oxford Classical Dictionary*, 3rd edn. (Oxford)
RE Pauly, A., Wissowa, G., and Kroll, W. (1893–) *Realencyclopädie der klassischen Altertumswissenschaft*
SVF von Arnim, H. (1903–21) *Stoicorum veterum fragmenta* (Leipzig)

I have been working on this book for a long time, and there are a number of people and institutions who have kindly supported my work. A fellowship from the John Simon Guggenheim Foundation in 1995–96 allowed me to complete substantial parts of the book. DePauw University has aided my project in a number of ways, most importantly with a sabbatical leave in 1995–96 and a Fisher Fellowship, which allowed me to devote the Fall semester of 1999 to research and writing. Andrew Barker read the sections on Archytas’ harmonic theory and was generous with his support and advice. Myles Burnyeat has read and commented on sections of my work and given me his own work in related areas, sometimes unpublished, to read. He has been unfailingly supportive of my project. Charles Kahn has provided invaluable help at a number of steps along the way, as well as

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sharing his own work with me. Geoffrey Lloyd has helped in many ways, including reading substantial parts of a draft of the book and sending me helpful comments. As always my mentor Alex Mourelatos has provided support at crucial moments. None of these people is responsible for the deficiencies that still remain, of course. The TLG disk has been an invaluable resource in my research, and the director of the Thesaurus Linguae Graecae, Maria Pantelia, generously carried out some searches for me on materials not yet available on the disk. Alan Cameron helped me with Testimonium A3f by identifying Joannes Geometres as the source. Friedrich Niessen translated the medieval Hebrew version of Ḥunayn's report on Archytas for me as well as providing expert commentary on it. Marwan Rashed kindly translated the testimonium from Ibn Abī Uṣaybi'a for me. There are numerous other individuals who have aided me by reading parts of the manuscript, by responding to papers based on my work, or by helping with problems. I would particularly like to mention Bernard Batto, István Bodnár, Michael Chase, Patricia Curd, Martin Curd, Underwood Dudley, Daniel Graham, Paul Kissinger, Chris Kopff, Reviel Netz, Juli Rainbolt, Steven Strange, Andrea Sununu, Philip Thibodeau, Paul Woodruff, Nazik Yared, and Leonid Zhmud who provided expert comments on several parts of the manuscript. My wife Martha has taken time from her own work to read numerous drafts of my work as well as providing loving support. Finally, I would like to thank Michael Sharp, Jackie Warren, and Sinéad Moloney at Cambridge University Press for all their hard work in making the book possible. Linda Woodward deserves special thanks for her careful copy-editing, which saved me from many errors.