

The Pronunciation of New Testament Greek



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The Pronunciation of New Testament Greek

*Judeo-Palestinian Greek Phonology and Orthography
from Alexander to Islam*

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Preface

It is only a matter of time before the student of Biblical Greek faces a series of somewhat controversial questions regarding the “correct” or “appropriate” pronunciation of the language: How was Biblical Greek pronounced? How do we know how Biblical Greek was pronounced? How *should* Biblical Greek be pronounced? The controversial nature of such questions, however, does not necessarily lie in the ambiguity of the evidence, but rather in the history of the field of Biblical Greek pedagogy.

Though the most common pronunciation in which Biblical Greek is taught in seminaries across the world today bears the name of Desiderius Erasmus (i.e., the “Erasmian” pronunciation), it was probably not used by Erasmus himself. In fact, the evidence would suggest that Erasmus learned to speak a contemporary form of Greek (i.e., “modern” Greek of the fifteenth century), and thus, when he read the New Testament, he read it with a pronunciation similar to that heard in Greece today. The pronunciation named after him was merely a speculative reconstruction of how ancient Greek must have been pronounced based on the best evidence available at the time.

Many who use an “Erasmian” pronunciation to teach Biblical Greek today do so merely out of convention, knowing full well that the historical pronunciation was otherwise. Indeed, one need only read a handful of papyri from the Koine period before being faced with a series of spelling interchanges that simply cannot be explained from the perspective of a Classical, Traditional, or “Erasmian” pronunciation. Still others, notwithstanding the excellent work that has been done by a number of scholars on the pronunciation of Greek during the Koine period,¹ claim that we really cannot know exactly how Koine Greek was pronounced. Though not strictly historical, there is no reason for

1. See chapter 1.

this group to abandon the convention if it would not be replaced by something well-established and certain.

The scientific and pedagogical purpose of the present volume, *The Pronunciation of New Testament Greek*, along with the accompanying guide to pronunciation and pedagogy (see below), is to engage both of these groups in a scholarly conversation, both by establishing the pronunciation of Judeo-Palestinian Koine Greek—note that “Judeo-” in the term “Judeo-Palestinian” is regional (i.e., province Iudaea) and not religious (Jewish)—at the time of the New Testament (and comparing it with other contemporary regional varieties of the Koine) and by presenting the findings in an engaging and welcoming manner, accessible even for beginning students of Biblical and Koine Greek. All of this is done, however, without sacrificing even one *iota* of academic standard or rigor with respect to the analysis of the material, such that scholars of historical linguistics and classics may also find the volume every bit as valuable as the beginning student.

The upshot of this intended versatility is that a supplementary footnote is often included for the benefit of either the nonspecialist or the seasoned scholar. In the case of the former, the footnote often explains a basic linguistic term that might stump a newcomer but seem redundant to those with experience in phonology and linguistics. In the case of the latter, the footnote often includes a more in-depth description of methodology or a particular point of analysis that might interest a specialist but overwhelm a new initiate to the field. A wise reader will thus use the footnotes accordingly in light of their own background.

From purely a scientific perspective, those familiar with the works of scholars such as Mayser, Teodorsson, Gignac, Bubenik, and Horrocks might wonder why another volume on the pronunciation of Koine Greek is even necessary.² Although excellent work has been done on the pronunciation of Koine Greek by the aforementioned scholars, most of the data for these studies have been limited to the Egyptian papyri. It is true that some work has also been done on the pronunciation of Greek in the mainland and in Asia Minor,³ but there has yet to be any comprehensive treatment of the pronunciation of Judeo-Palestinian Koine Greek on the basis of the local epigraphy and documentary evidence. A comprehensive analysis of all such material has been facilitated by the recent publications of a concordance of the Greek Judean Desert texts and the corpus of inscriptions from Judea and Palestine.⁴

2. See chapter 1.

3. See chapter 1.

4. Martin Abegg, James Bowley, and Edward Cook, *The Dead Sea Scrolls Concordance* (Leiden: Brill, 2003); Hannah M. Cotton et al., eds., *Corpus Inscriptionum Iudaeae/Palaestinae* (Berlin: de Gruyter, 2010–2018). Note also the online database initiative, *The Inscriptions of Israel/Palestine* (library.brown.edu/iip), carried out by Brown University.

Making use of these sources among others, this volume constitutes the first systematic and comprehensive treatment of the phonology of Judeo-Palestinian Koine Greek in the Hellenistic period (332–37 BCE), the Roman period (37 BCE–324 CE), and the Byzantine period (324–638 CE).⁵ Because the pronunciation of Greek at the time of the composition of the New Testament is of particular interest, the Roman period and in particular the early Roman period (37 BCE–135 CE) draws most attention in my analysis.

This volume begins with a review of previous scholarship on the phonology of Koine Greek (chapter 1). This is followed by a description of the methodology implemented in the present volume and an outline of the various sources at my disposal for the reconstruction of the pronunciation of Judeo-Palestinian Koine Greek (chapter 2). The following two sections (chapters 3–4) summarize the social and linguistic background of Judea-Palestine during the Koine period with the goal of providing the reader the necessary backdrop against which to understand the linguistic developments outlined in the chapters on phonology.

The next section (chapter 5) is a brief guide designed to make the main body of the work (i.e., the phonology portion) accessible even for readers who have never dealt with historical Greek phonology before. Newcomers to the field are especially encouraged to read this chapter before delving into the subsequent phonological analysis. It is less necessary for those with experience in linguistics and/or historical Greek phonology.

The following five chapters of the volume (chapters 6–10), which comprise the bulk of the book and are focused on phonology and orthography, constitute a comprehensive analysis of all relevant Judeo-Palestinian Koine Greek material organized by Greek letter/grapheme. The first of these summarizes the history of Greek pronunciation from Alexander to modern *Ellaða* (i.e., modern Greece) (chapter 6). The next two sections present all the relevant evidence for the pronunciation of each letter/grapheme, beginning with the consonants (chapter 7) and concluding with the vowels and diphthongs (chapter 8). In each of these chapters, the findings for Judeo-Palestinian Koine are constantly compared to other regional varieties of the Koine around the Mediterranean. In this way, the reader is provided with a broader picture of the pronunciation of Koine Greek at the time of the New Testament. The following chapter presents a brief analysis of the data as it relates to geographical region, register, and demographics (chapter 9). The final chapter of the phonology section synthesizes and summarizes the material to describe the character of the pronunciation system of Judeo-Palestinian Koine Greek in its ancient Mediterranean context from the

5. For more details and an explanation of these dates, in particular the beginning of the Roman period and the end of the Byzantine period, see section 5.5.

Hellenistic period to the Byzantine period with special focus on the Roman period (chapter 10). At the back of the book are found a selection of IPA-transcribed sample texts arranged by period, a bibliography, and a Greek word index.

Published alongside the present volume is a concise pronunciation guide (*A Short Guide to the Pronunciation of New Testament Greek*) in which the conclusions of this larger volume are presented within the context of the history of the field of Greek teaching. In addition to short and practical pronunciation guidelines, it includes a history of Greek pronunciation in Greek pedagogy, starting with Erasmus's generation and ending in the present day. This companion guide also outlines a number of practical implications for how our understanding of Judeo-Palestinian Koine Greek phonology *ought* to impact our pedagogy. It evaluates the positives and negatives of the various approaches to pronunciation in Greek teaching, all the while making use of recent literature on language pedagogy and Second Language Acquisition.

For those merely interested in the conclusions of this study and the basic principles undergirding how those conclusions were reached, reading chapter 2, the summaries of chapters 7 and 8, and chapter 10 will sufficiently equip them for engaging the conversation at that level. For those interested in how this work fits into the current debate on the pronunciation of ancient Greek in the classroom and academia, reading the chapters entitled “How Has Greek Been Pronounced in the Classroom since Erasmus?” and “How Should Greek Be Pronounced in the Classroom Tomorrow?” in the concise pronunciation guide is a must. For those interested in a robust linguistic analysis of the evidence for the pronunciation of Judeo-Palestinian Koine Greek from the Hellenistic period to the Byzantine period, with particular focus afforded to the time of the composition of the New Testament (i.e., the early Roman period), the entirety of the book will prove worthwhile.

Before closing the preface, I also feel obligated to acknowledge that I am keenly aware of the inevitable shortcomings of this volume. The objective of the research presented in this volume has been to accurately document every single spelling contained in a database of approximately 50,000 words attested across roughly 4,500 inscriptions and papyri. Although database software has been utilized to streamline and improve the accuracy of my analysis, it is virtually impossible that such a massive amount of material could be processed without at least a modest number of errors making their way into the finished product. I could have avoided this shortcoming by just describing general trends—rather than including exact statistics—and only sharing a small selection of examples of spelling interchanges—rather than citing them all (as a general rule). In fact, this is what is typically done in volumes on Greek phonology. However, it is my belief that such an approach forces the reader to put an exorbitant amount of

trust in the author having analyzed and interpreted the data accurately. This is not a particularly scientific approach. I much more prefer to present all the data to the reader (as much as possible), even if this leaves me more open to criticism for including examples I should not have, or for citing statistics that might be slightly off by a decimal of a percentage point. Opening myself up to such critique is a small price to pay for presenting the reader with as much information as possible about the topic. Such critiques are welcome as they will no doubt improve future iterations of the work and future research in the field.

I should also acknowledge that this work touches on many tertiary topics in its analysis of Greek phonology—e.g., Judeo-Palestinian history, scribal culture, epigraphic symbols, transcription of Semitic, historical Hebrew/Aramaic phonology, Mishnah manuscripts, Latin scribal practice and phonology, historical Arabic phonology—and, due to its scope, cannot always give these topics their due. Many of these topics are touched on only lightly over a few sentences to explain a particular feature attested in the Greek material when a proper analysis would require a full-length article. Here also critique is most welcome as it will only improve our understanding of Judeo-Palestinian Koine Greek that much more.

Acknowledgments

This book is far too large of a project to take credit for it entirely myself. The list of those scholars who deserve credit for their help and input is long and extends far back in time. It begins with all my professors in the department of Classics at the Hebrew University of Jerusalem. In particular, I owe much gratitude to Uri Yiftach for introducing me to the world of Greek papyrology by reading through and studying Egyptian legal papyri with me, and to Hannah Cotton for introducing me to the world of Greek epigraphy by involving me in the *Corpus Inscriptionum Iudaeae Palaestinae* project. Randall Buth and the Biblical Language Center also deserve much credit for first teaching me how to speak and use Koine Greek as a living language, as part of which I learned a pronunciation much closer to that of the Koine period than those traditionally used. Randall Buth also provided helpful comments on the content of this book. I must also thank my professors at the University of Texas, the Department of Middle Eastern Studies, and the Graduate School for providing me with the Graduate School Continuing Fellowship for the final year of my PhD, during which time I began the initial work for this project as a chapter of my dissertation. Friends and colleagues at the University of Cambridge and Tyndale House have also been an invaluable source of input during the writing process. In particular, James Clackson of the Classics department and Peter Williams of Tyndale House offered valuable input on various sections of the work that have undoubtedly improved it. I would also like to thank Luke Ranieri and Raphael Turrigiano for their input and helpful conversation about Greek phonology as I was writing this book. I would like to thank Kris J. Udd for permission to use a number of fonts that illustrate ancient Greek palaeography. Finally, I would like to thank two scholars who provided me with the technical background needed to analyze such a mammoth set of data accurately. First, I would like to thank Estara Arrant, who introduced me to the art of constructing MySQL databases for data-

driven analysis applied to ancient philology and linguistics. I would not have initiated the project at this scale without her initial help and generosity with her time in introducing me to the discipline. Second, I would like to thank Elizabeth Robar, who spent countless hours tailor-making and tweaking the code for the database that would automatically analyze most spelling interchanges. There is no way that this project would have been anywhere near its present scope or accuracy without all her help and selflessness with her time. She deserves massive amounts of credit for the outcome of this work. I must, of course, conclude by noting that, despite the help of so many qualified scholars, there are likely still inadequacies in this work, the responsibility of which rests solely with me.

Symbols and Abbreviations

†	indicates that all examples from a particular period are cited
+	stands in for an unidentifiable single letter
*	indicates an etymological/historical form
∅	when not enclosed in // or [] for phonemic/phonetic notation, indicates “null”
.	underdot with an IPA symbol (e.g., /ṣ/, /ṭ/) indicates “emphasis” in Semitic
()	in a Greek text, encloses completion of abbreviation or suspension
[]	in a Greek text, encloses restoration of fragment or missing text
[]	in English text, encloses phonetic transcription
[[]]	in a Greek text, encloses text that was intentionally erased in antiquity
{ }	in a Greek text, encloses erroneous addition of original scribe
{ { }	in a Greek text, encloses erasure by the original scribe
< >	in a Greek text, encloses replacement/correction of modern editor
	line break in an inscription, papyrus, or manuscript
	end of clause or line (for analysis of movable <i>nu</i>)
//	in English text, encloses phonemic transcription
/	precedes sound change environment: e.g., $n \rightarrow m / _b = /n/$ shifts to [m] before [b]
#	indicates word boundary in IPA notation
-	placeholder for sound in question: e.g., $_b =$ when sound occurs before [b]
-123	for BCE date in data tables: e.g., -123 = 123 BCE
123	for CE date in data tables: e.g., 123 = 123 CE

For abbreviations of primary sources for the epigraphic and documentary material, see the bibliography.

ABΓ	capital Greek letters indicate (i) unidentifiable words or (ii) Greek numerals
ACC	accusative
ACT	active
ADJ	adjective
ADV	adverb
AOR	aoist
AQ	ante quem
ART	article
b.	Babylonian Talmud
BCE	before common era
Bib	biblical manuscript (see 4.5)
c.	century
(C)	Christian author (see 4.6)
C	consonant: e.g., CV
CE	common era
<i>CIIP</i>	<i>Corpus Inscriptionum Iudaeae/Palaestinae</i> , ed. Hannah M. Cotton et al., 4 vols. Berlin: de Gruyter, 2010–2018
CLSP	Cross Language Speech Perception
Con	contract (papyrus) (see 4.4)
CPA	Christian Palestinian Aramaic
CPL	common plural
CSG	common singular
DAT	dative
Doc	general documentary text (papyrus) (see 4.4)
Dom	domestic inscription (and ostraca) (see 4.3)
^E	superscript ^E indicates epigraphy (inscription, ostrakon, etc.)
fol.	folio or folia
FPL	feminine plural
Fra	fragmentary inscription or documentary text (see 4.3)
FSG	feminine singular
Fun	funerary inscription (see 4.3)
FUT	future
GEN	genitive
Gra	graffito inscription (see 4.3)
H	high register/language
Idum.	Idumea
IIP	Michael L. Satlow, <i>Inscriptions of Israel/Palestine</i> , 2002– (http://www.brown.edu/iip/)
Imp	imperial inscription (see 4.3)
IMPERF	imperfect

IMPV	imperative
IND	indicative
INF	infinitive
INT	interrogative
IPA	International Phonetic Alphabet
Iud.	Iudaea, Judean
(J)	Jewish author (see 4.6)
JPA	Jewish Palestinian Aramaic
l.	line
L	low register/language
L1	first (native) language
L2	second (learned) language
Let	letter (papyrus) (see 4.4)
ll.	lines
<i>LSJ</i>	H. G. Liddell, R. Scott, and H. S. Jones, <i>A Greek-English Lexicon</i> , 9th ed. Oxford: Clarendon, 1996
LXX	Septuagint
m.	Mishnah
(M)	Muslim author (see 4.6)
Mag	magic (amulets, etc.) inscription (see 4.3)
MC	Middle Coast
MG	Modern Greek
MID	middle
MPL	masculine plural
MS	manuscript
MSG	masculine singular
MSS	manuscripts
MT	Masoretic Text of the Hebrew Bible
NEUT	neuter
NOM	nominative
NPL	neuter plural
NSG	neuter singular
NT	New Testament
(O)	other author (see 4.6)
OPT	optative
Ost	ostrakon inscription (see 4.3)
(P)	Pagan (i.e., Greek or Roman religion) author (see 4.6)
^P	superscript ^P indicates text on papyrus, parchment, vellum, etc.
PAM	Perceptual Assimilation Model
PASS	passive
PERF	perfect

PL	plural
PLUP	pluperfect
PN	personal name
PQ	post quem
PRES	present
PTCP	participle
Pub	public inscription (see 4.3)
Rel	<i>res sacrae</i> or religious inscription (see 4.3)
(S)	Samaritan author (see 4.6)
SA	Samaritan Aramaic
SG	singular
SLM	Speech Learning Model
SUBJ	subjunctive
u	within a “standard” Greek word, stands for Latin consonantal <i>u/v</i> (e.g., <i>σλυαυός</i>)
(U)	unknown author (see 4.6)
Unk	unknown type of inscription/text
V	vowel: e.g., CV
Var	varia/unknown type of inscription (see 4.3)
VOC	vocative
VOT	Voice Onset Time
w	within a “standard” Greek word, stands for Semitic consonantal <i>w</i> (e.g., <i>λεωί</i>)
y.	Jerusalem Talmud

Phonology of Koine Greek in Modern Scholarship

1.1 INTRODUCTION

Modern scholarship on the pronunciation of ancient Greek began with Erasmus's generation over five hundred years ago. However, because most of the work from Erasmus's time until the end of the nineteenth century is more relevant for understanding conventional classroom pronunciation than it is for actually reconstructing the pronunciation of Koine Greek, this earlier period is covered in my chapter on the history of the pronunciation of Greek in pedagogy in the separate pronunciation and pedagogy guide to this volume.¹ It would thus be superfluous to rehearse the early history of the field here. Rather, I will pick up my review of scholarship at the turn of the twentieth century and follow it through to the present day. (If one is interested in *why* we pronounce Greek the way we do today before learning about the historical pronunciation of Koine Greek, it is recommended to read the relevant section in *A Short Guide to the Pronunciation of New Testament Greek*.)

1.2 EGYPT AND THE PAPYRI

The modern discipline of Koine Greek historical phonology is essentially a scion of the slightly older field of papyrology. Without the work of the papyrologist, there would be little work for the phonologist. Even though inscriptions and other epigraphic sources always played their part in studies on Koine Greek pronunciation (see below in 1.3), we would have far less material than we currently

1. Benjamin Kantor, *A Short Guide to the Pronunciation of New Testament Greek* (Grand Rapids: Eerdmans, 2023).

have were it not for the papyri.² Despite the fact that certain scholars were already working with Greek papyri in the eighteenth century, albeit in a disorderly manner, it was really not until the end of the nineteenth century that the field of “papyrology” came to be formalized as an actual scientific discipline.³ The systematization of the field was largely concomitant with a series of major papyrological discoveries and their subsequent publication during the same century.⁴

2. What makes papyri so valuable for phonological analysis is the lack of a transmission history of the text. The very ink that proceeded from the pen of the ancient scribe or author is the same ink that the modern scholar reads. As a result, every spelling “mistake,” morphological irregularity, and crossed-out letter is preserved for the modern eye to see. To the degree that we can date any given papyrus, based on internal or external clues, we are given a small snapshot into the linguistic features of a particular author of a particular time and place. When thousands of such snapshots are gathered and analyzed together, a relatively clear picture emerges of the various linguistic features of Egyptian Koine Greek, phonology being among these. For a more detailed discussion regarding how one uses the ancient papyri and other epigraphic material to reconstruct pronunciation, see chapter 2.

3. The term “papyrology” (French: *papyrologie*; German: *Papyrusforschung* or *Papyruskunde*), first coined in English in 1898, means “the study of papyri,” both with respect to its use as a writing material and with respect to its written content. What makes papyrus special, of course, is that it is made from a plant (*Cyperus papyrus*) that flourished in the Nile Delta in ancient times. It is its Egyptian provenance, and thus a remarkably dry climate, that has allowed so many papyri to be preserved there until the present day. Sand cover has also facilitated their preservation. This is the main reason why, as we will see, most work on Koine Greek phonology has been restricted to Egypt. For more on this, see Italo Gallo, *Greek and Latin Papyrology* (London: Institute of Classical Studies, 1986), 1–2, 6–7, 18.

4. Serious work on the historical phonology of Koine Greek could not really begin until large swaths of the papyrological material had been published. This began in 1778 with the publication of a single papyrus roll, known as *Charta Borgiana* (SB 1.5124), acquired near Gizeh by an Italian merchant. After Napoleon’s expedition to Egypt in 1798 and the subsequent renewed interest in Egyptian antiquities, small quantities of Egyptian Greek papyri began to make their way into circulation in Europe. These papyri eventually found their way into museum and library collections. Over the subsequent decades, these collections slowly came to be published, beginning with the Drovetti collection in Turin (P.Tor.) in 1826–1827, the Vatican documentary papyri (P.Vat.) in 1831, the Leiden papyri (P.Leid. 1) in 1843, the Tischendorf papyri (P.Ross.Georg.) in 1857, and finally the Louvre papyri (P.Par.) in 1865. A second wave of discovery picked up again in 1877 when large quantities of new papyri found their way on to the Cairo market. Most of these were from the Fayûm, which in ancient times was the *nome* of Arsinoe. This new influx of papyri gave rise to a number of European-led excavation campaigns in Egypt toward the end of the nineteenth century. These campaigns, which were largely successful, yielded a number of great papyri collections and centers for papyrological studies abroad. Though a complete listing of all the great papyri collections lies beyond the scope of this section, it is sufficient to mention several of the most well-known, such as the Oxyrhynchus collection (P.Oxy.) at Oxford, the John Rylands collection (P.Ryl.) in Manchester, the Institute of Papyrology at the Sorbonne (P.Sorb.) in Paris, the *Papyrologica Lugduno-Batava* series (Pap.Lugd.Bat.) in Leiden, the *Berliner Griechische Urkunden* (BGU) series in Berlin, and

With such massive amounts of new linguistic material flooding the academic world, studies on the language of Egyptian Koine Greek soon followed. All of this is to say that without the pioneering effort of papyrologists, Koine Greek historical phonology likely would not have received nearly as much attention as it did at the turn of the century. The remainder of this chapter, then, is devoted to surveying the various works on the historical phonology of Koine Greek that began to appear roughly a century ago and have continued to be published up to the present day.

The first major comprehensive work on the pronunciation of Koine Greek, *Grammatik der griechischen Papyri aus der Ptolemäerzeit*, was published in 1906 by Edwin Mayser as the first of a multivolume set on the language of Egyptian Koine Greek during the Ptolemaic period (305–30 BCE).⁵ Although the main corpus is comprised of papyri, Mayser also makes use of ostraca and inscriptions. Partly in order to keep up with the ever-increasing corpus, the work was updated in 1923 and was eventually expanded and edited by Hans Schmoll in 1970.⁶ Although the first edition originally received some criticism for its failure to distinguish between historically meaningful spelling interchanges and mere slips of the pen, the wealth of evidence in the more recent edition made such distinctions more readily apparent.⁷ From a phonological perspective, taking Attic Greek as a starting point, Mayser argues for a number of changes in pronunciation in Egyptian Ptolemaic Koine, such as the spirantization of γ by the third century BCE, the merger of $\epsilon\iota \rightarrow \iota$ [i:] by the third century BCE, the blurring of the qualitative distinctions between ω and \circ during the second century BCE, and the general neutralization of vocalic length in the second century BCE. Overall, the work is sound and remains one of the best resources for the pronunciation of Egyptian Koine Greek during the Ptolemaic period. In fact, as late as the date of the most recent edition of Mayser's monumental work (1970), there were still no other comparable comprehensive studies.

the collection at the University of Michigan (P.Mich.) in Ann Arbor. For a more comprehensive review of the history of the various papyri collections in Egypt, Europe, and North America, see Gallo, *Papyrology*, 17–35.

5. The first volume, which is divided into three parts and covers phonology and morphology, is Edwin Mayser, *Grammatik der griechischen Papyri aus der Ptolemäerzeit: Laut- und Wortlehre* (Leipzig: Teubner, 1906).

6. Edwin Mayser, *Grammatik der griechischen Papyri aus der Ptolemäerzeit: Laut- und Wortlehre*, 2nd ed. (Leipzig: Teubner, 1923); Edwin Mayer and Hans Schmoll, *Grammatik der griechischen Papyri aus der Ptolemäerzeit: Band 1: Laut- und Wortlehre* (Berlin: de Gruyter, 1970).

7. For a review of the work, see E. G. Turner, review of *Grammatik der griechischen Papyri aus der Ptolemäerzeit. Band 1, Laut- und Wortlehre: Teil I, Einleitung und Lautlehre. Zweite Auflage bearbeitet von H. Schmoll*, by Edwin Mayser and Hans Schmoll, *Classical Review* 12 (1973): 219–20.

During the latter part of that decade, two major works on Egyptian Koine Greek were published. The first of these is Teodorsson's *The Phonology of Ptolemaic Koine* in 1977.⁸ It is essentially a sequel to his earlier work, *The Phonemic System of the Attic Dialect 400–340 B.C.*, in which he carries out a systematic analysis and reconstruction of the phonological system of the Attic dialect.⁹ It is also closely related to his work *The Phonology of Attic in the Hellenistic Period*,¹⁰ since much of his research on Ptolemaic Koine concerns its relationship to the Attic dialect. Although Teodorsson covers the same period and much of the same material as Mayser, his work is much more theoretical than his predecessor. It also lacks the comprehensiveness of Mayser's work. On the other hand, because it is a quantitative statistical study, Teodorsson is empowered to make more specific claims with respect to chronological change. While he comes to similar conclusions with respect to phonological development (e.g., γ [g] → [ɣ]/[j] by 150 BCE; ει → ι [i:] before consonants by the third century BCE; neutralization of length in the third century BCE; αι → ε [ε] in the second century BCE; οι → υ [ø] in the first century BCE), he makes a point to describe the resulting phonological system within the context of historical Greek dialectology and the development of Koine.¹¹ Building on his research on the Attic dialect, Teodorsson comes to the interesting conclusion that Ptolemaic Koine, which he presumes is a descendant of Attic, actually reflects a more conservative pronunciation than that of spoken Attic.¹² He explains this discrepancy by positing that Hellenistic Koine is actually a descendant of an “administrative” form of Attic used in the court at Macedonia. It was this higher register that was spread abroad to the population through the army, the bureaucracy, and the schools. Although Teodorsson's work has been susceptible to criticism from a methodological perspective—he probably overinterprets some of the Attic data and dates certain changes too early—his general distinction between a high and low register of Attic, with Koine being a descendant of the more formal register, is to be accepted.¹³

8. Sven-Tage Teodorsson, *The Phonology of Ptolemaic Koine* (Göteborg: Acta Universitatis Gothoburgensis, 1977).

9. Sven-Tage Teodorsson, *The Phonemic System of the Attic Dialect 400–340 B.C.* (Göteborg: Acta Universitatis Gothoburgensis, 1974).

10. Sven-Tage Teodorsson, *The Phonology of Attic in the Hellenistic Period* (Göteborg: Acta Universitatis Gothoburgensis, 1978).

11. Mayser is more strictly descriptive in his analysis. While he does address the question of the relationship of Egyptian Koine to Attic Greek, he devotes only a few pages to it. See Mayser and Schmoll, *Grammatik*, 1–4.

12. For more on the origins of the Koine dialect, see chapter 6.2.

13. For a review of Teodorsson's work, see Alan H. Sommerstein, review of *The Phonology of Ptolemaic Koine*, by Sven-Tage Teodorsson, *Classical Review* 29, no. 1 (1979): 169–70. For a critique of Teodorsson's views and a bit more balanced approach, see Geoffrey Horrocks, *Greek*:

About the same time, Gignac published *A Grammar of the Greek Papyri of the Roman and Byzantine Period* in 1976.¹⁴ Though he had originally planned for a four-volume grammar covering the entire language, only the first (phonology) and second (morphology) volumes were ever completed. As is clear from the title, Gignac's work continues the work of Mayser and Teodorsson, but for the later stages of Koine Greek in Egypt, beginning with evidence from the Roman period (30 BCE–395 CE) and tracing the data all the way through to the Byzantine period (395–795 CE). This constitutes the most important period in the history of Greek phonology, inasmuch as it reflects a transition from a more "classical" pronunciation to a more "modern" pronunciation. From a phonological perspective, Gignac finds evidence for most of the phonological changes that bridge the gap between Ptolemaic Koine and Modern Greek, such as $\epsilon\iota, \eta \rightarrow \iota$ [i], $\alpha\iota \rightarrow \epsilon$ [ɛ]/[ɛ̄], $\omicron\iota \rightarrow \upsilon$ [y] (but cf. MG $\upsilon =$ [i]) and $\gamma \rightarrow$ [ɣ]/[j], $\beta \rightarrow$ [β]/[φ] (but cf. MG $\beta =$ [v]/[f]), $\delta \rightarrow$ [ð]. Gignac's work is also extensive to the point of making some assertions about phonological features that are specific to certain regions within Egypt. He also situates his findings in context by comparing features of Egyptian Koine not only to other dialects of the Mediterranean, but also to Modern Greek. In addition to covering later periods than Mayser and Teodorsson, Gignac also devotes considerable attention to the bilingual interference of Coptic as a possible factor in explaining some features of Egyptian Koine Greek. The significance of bilingualism in Gignac's work must not be underestimated. The fact that most of the Egyptian $\chi\acute{\omega}\rho\alpha$ was bilingual during this period ought to give us pause before assuming the same linguistic features apply to other regions such as Judea-Palestine. Gignac also deserves much praise for the comfortable and inviting format of his work, in which examples are often set apart in a new paragraph with one citation per line. All in all, Gignac's work is a solid contribution to the field of historical Koine Greek phonology and remains the best comprehensive treatment of Roman- and Byzantine-period Koine pronunciation to this day.¹⁵

A History of the Language and Its Speakers (Oxford: Wiley-Blackwell, 2014), 163–72. For a more balanced approach that still acknowledges the distinction in registers, see C. J. Ruijgh, review of *The Phonemic System of the Attic Dialect 400–340 B.C.*, by Sven-Tage Teodorsson, *Mnemosyne* 31 (1978): 79–89; and Leslie Threatte, *The Grammar of Attic Inscriptions I: Phonology* (Berlin: de Gruyter, 1980).

14. Francis Thomas Gignac, *A Grammar of the Greek Papyri of the Roman and Byzantine Periods*, vol. 1, *Phonology* (Milan: Istituto Editoriale Cisalpino, 1976).

15. For reviews of the work, see Leslie Threatte, review of *A Grammar of the Greek Papyri of the Roman and Byzantine Periods*, vol. 1, *Phonology*, by Francis Thomas Gignac, *Classical World* 72, no. 1 (1978): 41–43; Robert Browning, review of *A Grammar of the Greek Papyri of the Roman and Byzantine Periods*, vol. 1, *Phonology*, by Francis Thomas Gignac, *Classical Review* 29, no. 1 (1979): 92; G. D. Kilpatrick, review of *A Grammar of the Greek Papyri of the Roman and Byzantine Periods*, vol. 1, *Phonology*, by Francis Thomas Gignac, *Novum Testamentum* 24, no. 2 (1982):

1.3 THE DIALECTS OF THE MEDITERRANEAN AND INSCRIPTIONS

Aside from these three major works on Egyptian Koine, a number of other studies exist on the pronunciations of various regional dialects around the Mediterranean. In most cases, such studies are the product of an individual scholar treating the corpus of inscriptions from a particular city or region and writing a grammar of the epigraphic material. At this point, it might be appropriate to revise my earlier statement about the modern discipline of historical Koine Greek phonology being the “scion of papyrology.” Though the most comprehensive works tend to rely on the Egyptian papyri, numerous more isolated studies have been done on the basis of inscriptional corpora. Accordingly, it might be more appropriate to refer to the modern discipline of historical Koine Greek phonology as the “scion of papyrology *and* epigraphy.” A number of such studies are mentioned below.

The mainland of Greece itself has perhaps garnered the most attention. The Attic dialect by itself is treated by a number of scholars. As mentioned earlier, in addition to his work on Egyptian Koine, Teodorsson has also written on the development of the Attic dialect during the Hellenistic period.¹⁶ Though not strictly limited to the Koine period, Threatte has also published the most comprehensive treatment to date of the Attic material, covering all extant written documents from 725 BCE to 300 CE. Threatte’s more conservative (than Teodorsson’s) dating is generally accepted as the more reliable interpretation of the data.¹⁷ Though Teodorsson and Threatte are the most recent scholars to deal with Attic, they had a number of predecessors whose work is now out of date.¹⁸ For example, Rüsich has covered Delphic Koine.¹⁹ It is also worth noting that Slavova has relatively recently published a phonological analysis of the inscriptions from modern-day Bulgaria, which largely coincides with ancient Thrace, where Greeks emigrated and settled as well.²⁰

What we know of Anatolian Koine Greek, or the Koine Greek of Asia Minor, is put together on the basis of numerous studies of isolated regions. Nachman-

190–92; and Frederick W. Danker, review of *A Grammar of the Greek Papyri of the Roman and Byzantine Periods*, vol. 1, *Phonology*, by Francis Thomas Gignac, *Journal of Biblical Literature* 102, no. 2 (1983): 350–52.

16. Teodorsson, *Attic in the Hellenistic Period*.

17. Threatte, *Grammar of Attic Inscriptions I*.

18. See, e.g., Konrad Meisterhans and Eduard Schwyzler, *Grammatik der attischen Inschriften* (Berlin: Weidmannsche Buchhandlung, 1900); and W. Lademann, *De Titulis Atticis: Quaestiones Orthographicae et Grammaticae* (Kirchhain: M. Schmiersow, 1915).

19. Edmund Rüsich, *Grammatik der delphischen Inschriften. I. Lautlehre* (Berlin: Weidmannsche Buchhandlung, 1914).

20. Mirena Slavova, *Phonology of the Greek Inscriptions in Bulgaria*, *Palingenesia* 83 (Stuttgart: Steiner, 2004).

son and Thieme have treated the phonology of Magnesian (i.e., Magnesia on the Maeander) Koine.²¹ Dienstbach and Stein deal with the Koine dialect of Priene.²² Phrygian Koine is covered by Neumann.²³ Pergamum has been treated by Schwyzer.²⁴ Miletos is treated by Scherer.²⁵ Pamphylia is addressed by Brixhe.²⁶ Lycia is treated by Hauser.²⁷ In addition to these studies of isolated regions, several scholars have written on the Koine Greek of Asia Minor as a whole, such as Dressler and Brixhe.²⁸

Evidence for the pronunciation of Koine Greek in the Roman province of Syria, just south of Asia Minor and just north of Judea-Palestine, is probably best accessed through the works of Rosenthal and Stark on Palmyrene Koine.²⁹

1.4 JUDEA-PALESTINE AND GREEK LOANWORDS IN HEBREW

Most of the work on the pronunciation of Koine Greek in Judea-Palestine itself has been limited to analyses of Greek loanwords in Rabbinic Hebrew and Aramaic sources. The most notable of these works are by Krauss, Rosén, Sperber, Wasserstein, and Heijmans.³⁰

21. E. Nachmanson, *Laute und Formen der magnetischen Inschriften* (Uppsala: Almqvist & Wiksells, 1904); Gottfried Thieme, *Die Inschriften von Magnesia am Mäander und das neue Testament* (Göttingen: Vandenhoeck & Ruprecht, 1906).

22. A. Dienstbach, *De Titulorum Priensium Sonis* (Marburg: Typis C. Georgi Bonnensis, 1910); T. Stein, "Zur Formenlehre der prienischen Inschriften," *Glotta* 6 (1915): 97–145.

23. G. Neumann, *Phrygisch und Griechisch* (Vienna: Verlag der Österreichischen Akademie der Wissenschaften, 1988).

24. Eduard Schweizer, *Grammatik der pergamenischen Inschriften: Beiträge zur Laut- und Flexionslehre der gemeingriechischen Sprache* (Berlin: Weidmannsche Buchhandlung, 1898).

25. Anton Scherer, "Zur Laut- und Formenlehre der milesischen Inschriften" (PhD diss., Munich, 1934).

26. Claude Brixhe, *Le dialecte grec de Pamphylie* (Paris: Adrien-Maisonneuve, 1976).

27. Karl Hauser, *Grammatik der griechischen Inschriften Lykiens* (Basel: E. Birkhäuser, 1916).

28. W. Dressler, "Einfluß epichorischer Sprachen in den griechischen Inschriften Kleinasiens" (PhD diss., University of Vienna, 1963); Claude Brixhe, *Essai sur le grec anatolien au début de notre ère* (Nancy: Presses Universitaires de Nancy, 1987); Claude Brixhe, "Linguistic Diversity in Asia Minor during the Empire: Koine and Non-Greek Languages," in *A Companion to the Ancient Greek Language*, ed. Egbert J. Bakker (Malden: Wiley-Blackwell, 2010), 228–52.

29. F. Rosenthal, *Die Sprache der palmyrenischen Inschriften* (Leipzig: Hinrich, 1936); J. K. Stark, *Personal Names in Palmyrene Inscriptions* (Oxford: Clarendon, 1971).

30. S. Krauss, *Griechische und lateinische Lehnwörter im Talmud, Midrasch und Targum*, 2 vols. (Berlin: S. Calvary, 1898–1899); Haiim B. Rosén, "Palestinian 'Koine' [Greek] in Rabbinic Illustration," *Journal of Semitic Studies* 8 (1963): 56–73; D. Sperber, "Studies in Greek and Latin Loanwords in Rabbinic Literature," *Scripta Classica Israelica* 2 (1975): 163–72; D. Sperber, *A Dictionary of Greek and Latin Legal Terms in Rabbinic Literature* (Jerusalem: Bar-Ilan University

One may be surprised by how much can be learned about the pronunciation of Judeo-Palestinian Koine Greek merely by examining the realization of loanwords. For example, already in 1963, Rosén used the realization of Greek loanwords in Hebrew to demonstrate that the second element of the diphthongs $\alpha\upsilon/\epsilon\upsilon$ had become consonantal, that $-i\alpha-$ contracted to $-i-$ in final syllables, that η had become itacized, and that β was still pronounced as a stop [b] after nasals.³¹

Heijmans, who has produced the most comprehensive work on the topic, also sheds light on a number of features of Judeo-Palestinian Koine Greek, such as the rather open nature of $\epsilon = [\epsilon]$ (as opposed to $[\epsilon̞]$) and the (optional) aspiration of the initial element of ξ (but see 7.8.2.4). Perhaps most helpful in Heijmans's work is his careful attention to manuscript differences and the distinction between Tannaitic (= Roman period) and Amoraic (= mostly Byzantine period) sources. This is especially important when using such material for outlining diachronic change in Judeo-Palestinian Greek from the Roman period to the Byzantine period.

Nevertheless, there is only so much that can be known about Greek phonology from the realization of loanwords in Hebrew and/or Aramaic. For that reason, it is helpful when Buth mentions some of the Judeo-Palestinian Greek documentary evidence alongside Egyptian evidence in his article on the pronunciation of Koine Greek for teachers of New Testament Greek.³² Nevertheless, it is quite limited in scope and does not treat the differences between Palestinian and Egyptian Koine. It is for that reason, among others, that the present volume is necessary.

1.5 AN OVERVIEW

As befitting the “scion of papyrology and epigraphy,” most scholarly literature in the modern discipline of historical Koine Greek phonology still bears a clear

Press, 1984); A. Wasserstein, “A Note on the Phonetic and Graphic Representation of Greek Vowels of the Spiritus Asper in the Aramaic Transcription of Greek Loanwords,” *Scripta Classica Israelica* 12 (1993): 200–208; Shai Heijmans, “Greek and Latin Loanwords in the Mishnah: Glossary and Phonology” (PhD diss., Tel Aviv University, 2013) [Hebrew]. See also W. Muss-Arnolt, “On Semitic Words in Greek and Latin,” *Transactions of the American Philological Association* 23 (1892): 35–156; J. Starr, “A Fragment of a Greek Mishnaic Glossary,” *Proceedings of the American Academy for Jewish Research* 6 (1935): 353–67.

31. Rosén, “Palestinian ‘Koine,’” 64–70.

32. Randall Buth, “ἡ κοινή προφορὰ *Koiné Pronunciation: Notes on the Pronunciation System of Koiné Greek*” (2012): 217–30, Biblical Language Center, <https://www.biblicallanguagecenter.com/koine-greek-pronunciation/>.

resemblance to one progenitor or the other. The work on Egyptian Koine Greek is based largely on papyri, whereas studies of various dialects elsewhere around the Mediterranean are based mainly on inscriptions. Moreover, from just this brief review of scholarship on Koine pronunciation, it quickly becomes clear that Egypt is really the only major region that has received a comprehensive treatment of the evidence. Indeed, a major desideratum in the field of Koine Greek phonology is a series of “large-scale” monographs on the corpus of all Koine inscriptions from other regions in the Mediterranean such as Asia Minor, Syria, and Judea-Palestine (the last of these is the object of the present study).³³ Presently, however, because the literature on (non-Egyptian) Koine Greek phonology is fragmented across tens of isolated studies of specific cities and regions around the Mediterranean, mastering it is by no means an easy task.

For nonspecialists interested in a general overview, however, several helpful studies exist which outline the main phonological changes of the period. From the earlier part of the twentieth century, one finds Sturtevant’s *The Pronunciation of Greek and Latin*.³⁴ From a bit later, one finds Allen’s famous *Vox Graeca*.³⁵ Even though both works are general treatments of the pronunciation of Greek, with considerable space devoted to Classical Greek, they also cover the Hellenistic and Koine periods. More recently, one may turn to select chapters in two large-scale treatments of the history of Greek: Horrocks’s *Greek: A History of the Language and Its Speakers* and Christidis’s *A History of Ancient Greek: From the Beginnings to Late Antiquity*.³⁶ One might also consider select chapters in Bakker’s *A Companion to the Ancient Greek Language* and Brill’s *Encyclopedia of Ancient Greek Language and Linguistics* (EAGLL).³⁷ After acquainting one-

33. Vit Bubenik, “Eastern Koinés,” in *A History of Ancient Greek: From the Beginnings to Late Antiquity*, ed. A.-F. Christidis (Cambridge: Cambridge University Press, 2007), 632.

34. Edgar H. Sturtevant, *The Pronunciation of Greek and Latin* (Chicago: Ares, 1940).

35. W. Sidney Allen, *Vox Graeca: A Guide to the Pronunciation of Classical Greek* (Cambridge: Cambridge University Press, 1968).

36. Horrocks, *Greek*; A.-F. Christidis, ed., *A History of Ancient Greek: From the Beginnings to Late Antiquity* (Cambridge: Cambridge University Press, 2007). For the sections on the pronunciation of Koine Greek in Horrocks’s volume, see the chapter on “Spoken Koine in the Roman Period” in Horrocks, *Greek*, 160–72. In Christidis’s volume, see the articles by E. B. Petrounias, “Development in Pronunciation during the Hellenistic Period,” in *A History of Ancient Greek: From the Beginnings to Late Antiquity*, ed. A.-F. Christidis (Cambridge: Cambridge University Press, 2007), 599–609, and Bubenik, “Eastern Koinés.”

37. Egbert J. Bakker, *A Companion to the Ancient Greek Language* (Oxford: Wiley-Blackwell, 2010); Georgio K. Giannakis et al., eds., *Encyclopedia of Ancient Greek Language and Linguistics* (Leiden: Brill, 2014). For the relevant sections in Bakker’s volume, see Brixhe, “Asia Minor”; Sofia Torallas Tovar, “Greek in Egypt,” in *A Companion to the Ancient Greek Language*, ed. Egbert J. Bakker (Malden: Wiley-Blackwell, 2010), 253–66. See also Sofia Torallas Tovar, “Koine, Fea-

self with the several relevant chapters on Koine pronunciation in these general overviews, I recommend that one then become familiar with the literature on Egyptian Koine—either that of Mayser or Teodorsson and then that of Gignac. Having done this, any student or scholar will have a sufficient working knowledge of the field.

In chapter 6, we will return to some of the literature mentioned here and briefly summarize the primary phonological developments in Koine Greek. This will best prepare the reader to situate the features and developments of Judeo-Palestinian Greek against the backdrop of the pronunciation of Greek in its wider Mediterranean context.

tures of,” in *Encyclopedia of Ancient Greek Language and Linguistics*, ed. Georgios K. Giannakis et al. (Leiden: Brill, 2014), 273–77.