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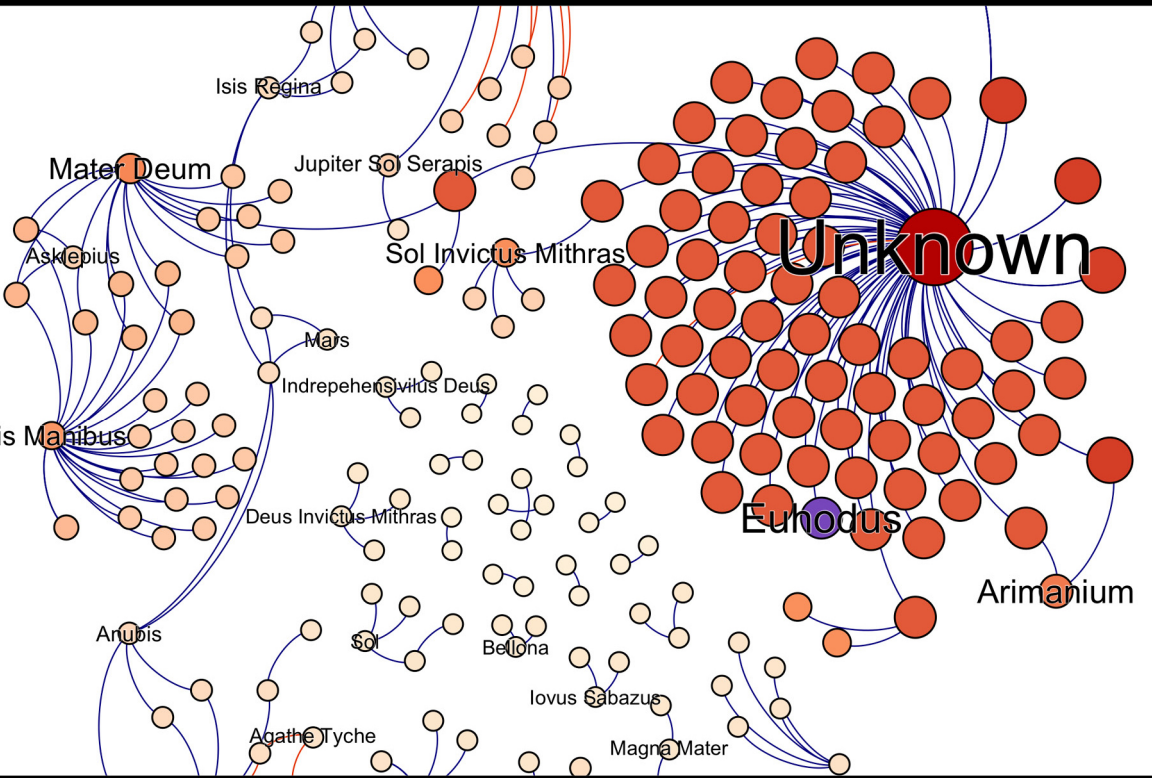
Sandra Blakely
and Megan Daniels (eds.)

Data Science, Human Science, and Ancient Gods

Conversations in Theory and Method



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Sandra Blakely, Series Editor

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Conversations in Theory and Method

Edited by

Sandra Blakely and Megan Daniels



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Data Science, Human Science, and Ancient Gods

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Contributors

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In his role as associate director of the DRH he has written extensively on the difficult work of coding historical pasts for quantitative analysis.

Sarah Murray is assistant professor of Classics at the University of Toronto. Her research concerns the archaeology and economy of the Aegean Late Bronze and Early Iron Ages. She has published two books, *The Collapse of the Mycenaean Economy: Trade, Imports, and Institutions 1300–700 BCE* (Cambridge, 2017) and *Male Nudity in the Greek Iron Age: Representation and Ritual Context in Aegean Societies* (Cambridge, 2022), and coedited a third, *The Cultural History of Augustan Rome: Texts, Monuments, and Topography* (Cambridge, 2019). She has also authored or coauthored articles on various topics related to Aegean prehistoric archeology or archaeological methods in journals including the *Journal of Archaeological Research*, *American Journal of Archaeology*, *Journal of Field Archaeology*, *Hesperia*, and *Mouseion*. She presently codirects a survey based in Porto Rafti, Greece.

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Abbreviations

AA	*Archäeologischer Anzeiger*
AΔ	*Αρχαιολογικόν Δελτίον*
Adv. nat.	Arnobius, *Adversus nationes*
Aem.	Plutarch, *Aemilius Paulus*
Aen.	*Aeneid*
Aesch.	Aeschylus
Agr.	Cato, *De agricultura*
AJA	*American Journal of Archaeology*
AJN	*American Journal of Numismatics*
AJP	*American Journal of Philology*
AJS	*American Journal of Sociology*
An.	Xenophon, *Anabasis*
Ann.	Tacitus, *Annales*; Ennius, *Annales*
Ant.	Sophocles, *Antigone*
Ant. Rom.	Dionysius of Hallicarnassus, *Antiquitates Romanae*
AP	Anthologia Palatina
App.	Appian
Ap. Rhod.	Apollonius Rhodius
Apollod.	Apollodorus mythographus
Ar.	Aristophanes
AR	*Archiv für Religionsgeschichte*
Archil.	Archilochus
ARD	Varro, *Antiquitates rerum divinarum*
Argon	Apollonius Rhodius, *Argonautica*
Arn.	Arnobius
Aug.	Suetonius, *Divus Augustus*
August.	Augustine
BARIS	BAR International Series
BASOR	*Bulletin of the American Schools of Oriental Research*
BCH	*Bulletin de Correspondance Hellénique*
B. Civ.	Appian, *Bella civilia*
Bibl.	Apollodorus, *Bibliotheca*
BICS	*Bulletin of the Institute of Classical Studies*
BICSSup	Bulletin of the Institute of Classical Studies Supplement
BSA	*Annual of the British School at Athens*
BSAS	British School at Athens Studies

BSASup	British School at Athens Supplementary Volume
BzA	Beiträge zur Altertumskunde
CA	*Current Anthropology*
Caes.	Plutarch, *Caesar*
CAH	Cambridge Ancient History
Calig.	Suetonius, *Gaius Caligula*
CÉFR	Collection de l'École française de Rome
CGRN	*Collection of Greek Ritual Norms*. http://cgrn.ulg.ac.be/.
ch(s).	chapter(s)
Cic.	Cicero
CIL	*Coprus Inscriptionum Latinarum*. Berlin, 1862–.
ClAnt	*Classical Antiquity*
Claud.	Claudianus
Clem.	Seneca, *De clementia*
Comp. hist.	*Historiarum Compendium*
Coriol.	Plutarch, *Coriolanus*
CP	*Classical Philology*
CSR	cognitive science of religion
De civ. D.	Augustine, *De civitate Dei*
Dem.	Demosthenes
De spect.	Terullian, *De spectaculis*
DHA	*Dialogues d'histoire ancienne*
Dio Cass.	Dio Cassius
Dion. Hal.	Dionysus of Halicarnassus
Div.	Cicero, *De divinatione*
Div. inst.	Lactantius, *Divinae institutiones*
DOP	*Dumbarton Oaks Papers*
Ep.	Horace, *Epodi*; Seneca, *Epistulae*
EPRO	*Études* préliminaires aux religions orientales dans l'empire romain
ESR	evolutionary science of religion
ETCSL	*Electronic Text Corpus of Sumerian Literature*. http://etcsl.orinst.ox.ac.uk
Eum.	Aeschylus, *Eumenides*
Eur.	Euripides
Fast.	Ovid, *Fasti*
Fest.	Sextus Pompeius Festus
FGH	Jacoby, Felix. *Die Fragmente der griechischen Historiker*. Berlin: Weidmann; Leiden: Brill, 1923–1959.
frag(s).	fragment(s)
FRHist	Cornell, Timothy J., ed. *Fragments of the Roman Historians*. 3 vols. Oxford: Oxford University Press, 2014.
GRF	*Grammaticae Romanae fragmenta*

HCS	Hellenistic Culture and Society
HdO	Handbuch der Orientalistik
Hdt.	Herodotus
Heliogab.	Scriptores Historiae Augustae, *Heliogabalus*
Hipp.	Euripides, *Hippolytus*
Hist. eccl.	Eusebius, *Historia ecclesiastica*
HN	Pliny, *Naturalis historia*
HN^{3}	Rutter, Keith, et al. *Historia Numorum.* 3rd ed. London: British Museum Press, 2001–.
Hom.	Homer
HTR	*Harvard Theological Review*
Hymn. Hom. Ap.	Phokis, *Homeric Hymn to Apollo*
IG	*Inscriptiones Graecae.* Berlin: de Gruyter, 1924–.
Il.	Homer, *Iliad*
ILLRP	Degrassi, Attilio, ed. *Inscriptiones Latinae Liberae Rei Republicae.* 2 vols. Rome: La Nuova Italia, 1963, 1965.
Iul.	Suetonius, *Divus Iulius*
JAAR	*Journal of the American Academy of Religion*
JAJ	*Journal of Ancient Judaism*
JAR	*Journal of Archaeological Research*
JArS	*Journal of Archaeological Science*
JBL	*Journal of Biblical Literature*
JFA	*Journal of Field Archaeology*
JHS	*Journal of Hellenic Studies*
JMA	*Journal of Mediterranean Archaeology*
JNG	*Jahrbuch* für *Numismatik und Geldgeschichte*
JRA	*Journal of Roman Archaeology*
JRASup	Journal of Roman Archaeology Supplementary Series
JRS	*Journal of Roman Studies*
Lactant.	Lactantius
LCL	Loeb Classical Library
Leg.	Plato, *Leges*
LH	Late Helladic
LIMC	*Lexicon Iconographicum Mythologiae Classicae.* Düsseldorf: Artemis, 1981–.
Ling.	Varro, *De lingua Latina*
LTUR	Steinby, Margareta, ed. *Lexicon Topographicum Urbis Romae.* 6 vols. Rome: Quasar, 1993–2000.
Lyc.	Plutarch, *Lycurgus*
Lys.	Lysias
MAAR	*Memoirs of the American Academy in Rome*
Macrob.	Macrobius
Marc.	Plutarch, *Marcellus*

Mart.	Martial
Med.	Euripides, *Medea*
MEFR	*Mélanges de l'École française de Rome*
Mem.	Xenophon, *Memorabilia*
Merc.	Plautus, *Mercator*
Min. Fel	Minucius Felix
MnSup	Mnemosyne Supplements
Mor.	Plutarch, *Moralia*
MTSR	*Method & Theory in the Study of Religion*
Nat. D.	Cicero, *De natura deorum*
NC	*Numismatic Chronicle*
Nic. Dam.	Nicolaus of Damascus
NS	new series
NSA	*Notizie degli Scavi di antichità*
Num.	Plutarch, *Numa*
Oct.	Minucius Felix, *Octavius*
Od.	Homer, *Odyssey*
OGR	*Origo Gentis Romanae*
Ol.	Pindar, *Olympian Ode*
Op.	Hesiod, *Opera et dies*
Ov.	Ovid
Pan. Ter. Hon.	Claudianus, *Panegyricus de Tertio Consulatu Honorii Augusti*
Paus.	Pausanius
PBSR	*Papers of the British School at Rome*
PCPS	*Proceedings of the Cambridge Philological Society*
Petron.	Petronius
PG	Protogeometric
Phil.	Sophocles, *Philoctetes*
Planc.	Cicero, *Pro Plancio*
Plin.	Pliny (the Elder)
Plut.	Plutarch
PNAS	*Proceedings of the National Academy of Sciences*
Poen.	Plautus, *Poenulus*
Pol.	Aristotle, *Politica*
Ran.	Aristophanes, *Ranae*
REL	*Revue des* études *latines*
Resp.	Plato, *Respublica*
RG	Augustus, *Res Gestae Divi Augusti*
RGRW	Religions in the Graeco-Roman World
RIC	Sutherland, Carol H. V., and R. A. G. Carson. *Roman Imperial Coinage*. Rev. ed. London: Spink & Son, 1984.
RIDA	*Revue Internationale des Droits de l'Antiquité*
Rom.	Plutarch, *Romulus*

RRC	Crawford, Michael H. *Roman Republican Coinage*. 2 vols. London: Cambridge University Press, 1974.
Rust.	Columella, *De re rustica*
Sat.	Macrobius, *Saturnalia*; Petronius, *Satyrica*; Horace, *Satirae*; Juvenal, *Satirae*
ScAnt	*Scienze dell'Antichità*
SCI	*Scripta Classica Israelica*
SCJud	Studies in Christianity and Judaism
SEG	Supplementum epigraphicum graecum
Sen.	Seneca
Serv.	Servius
SHA	Scriptores Historiae Augustae
SNG	*Sylloge Nummorum Graecorum*
Soph.	Sophocles
De spect.	Tertullian, *De spectaculis*
Suet.	Suetonius
Supp.	Aeschylus, *Supplices*
Tab. Her.	*Tabula Heracleensis*
Tac.	Tacitus
TAPA	*Transactions of the American Philological Association*
Ti. Gracch.	Plutarch, *Tiberius Gracchus*
Thgn.	Theognis
Theog.	*Theogonia*
Thuc.	Thucydides
trans.	translator
UET	Ur Excavations: Texts
Val. Max.	Valerius Maximus
Varr.	Varro
Vesp.	Suetonius, *Divus Vespasianus*
WAW	Writings of the Ancient World
WGRWSup	Writings from the Greco-Roman World Supplement
YCS	Yale Classical Studies
Xen.	Xenophon
ZPE	*Zeitschrift für Papyrologie und Epigraphik*

INTRODUCTION
New Sciences and Old Gods: A Brief History of the Human Sciences and Ancient Religion

Sandra Blakely and Megan Daniels

The studies in this volume share a focus on religion in the ancient Mediterranean world: how ritual, myth, spectatorship, and travel reflect the continual interaction of human beings with the richly fictive beings who defined the boundaries of groups, access to the past, and mobility across land and seascapes. They share as well the methodological exploration of the intersection between human sciences—the integration of numerous disciplines around the study of all aspects of human life from the biological to the cultural—and the study of the past. This conversation has a long history, stretching back to the eighteenth century, and is far from concluded in the twenty-first. This dialogue engages with critical models derived from specializations within history, philology, archaeology, sociology, and anthropology, and addresses, increasingly, the potentialities and pitfalls of quantitative and digital analyses. It has been characterized from its inception by a combination of ambivalence and ambition, critical responses and generative energy, focused as much on the evolution of method and theory as on the cultural specifics of individual case studies. Many of the threads in that long conversation inform these chapters: the comparative project, human social evolution, disciplinary reflexivity, religion as an embedded, functional, and structural system, and the role for agency, networks, and materiality. This introduction begins with a short account of the history of these disciplinary interactions, in the hopes of offering support for this particular reflexive moment, at the digital and interdisciplinary frontiers of the twenty-first century, at which the study of ancient religions is positioned. A brief overview of the individual chapters follows.

1.1. Evolution, Ethnography, and Quantification: Common Ground and Separate Paths

A common imperative, one as evolutionary as it was moral, linked anthropology and the study of the past in the late nineteenth century. Edward B. Tylor, writing in 1896, asserted for anthropology what David Hume had declared for history 150 years before.[1] Both disciplines should cast light on the evolutionary

1. Hume, "Of the Study of History" (1741): knowledge of history helped one "to remark the rise, progress, declension, and final extinction of the most flourishing empires: the virtues which contributed to their greatness, and the vices, which drew on their ruin." (1987, 566). To Hume (1987,

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trajectory of nations, whose ethical development would shape their capacity for survival. The evolutionary proposal crossed the boundaries between the scientific and the historical, triangulating modern nations with Darwinian approaches and rampant comparativism. While Iroquois confederacies, Scottish clans, and ancient Athenians could all be compared, the ancient literate cultures of Greece and Rome occupied a particular place in these efforts, as both comparanda and models of the investigators' own intellectual and cultural identities.[2] As Emily Varto has written,

> No other "other" was so well studied and documented; the classical civilizations were a useful, even natural, source for comparanda and heuristic tools in cross-cultural ethnological projects. The classics, however, had also been adopted as Europe's history, part of its development. The classics merged both self and "other"; they represented a European past and an ethnographic "other." (2018a, 5)

Common methodological and topical grounds further united classics and anthropology in the late nineteenth and twentieth centuries, particularly the work of the Cambridge ritualists and early anthropologists like James Frazer (1922) and Marcel Mauss (1923–1924).[3] Philological approaches informed comparative linguistics: religious experience, including feasting, the giving of gifts, and the conceptions of the divine, were the objects of research in both fields. Even fieldwork in some cases encouraged points of fusion between these disciplines, notably the work of Milman Parry and Albert Lord (Varto 2018a, 9–10; de Vet 2018; see Solez 2018 on missionary "fieldwork"). These commonalities did not, however, inevitably generate a cross-disciplinary openness. Classicists were often suspicious of a field increasingly based on ethnographic participant observation and attracted to the irrational, the sensual, and the subjective. The proposal that non-Greco-Roman cultures could cast light on antiquity could seem an affront to the canon of "western civilization"; equally unwelcome was the idea that Greeks and Romans could be "primitive."[4]

56; Kumar 2012), it was "an unpardonable ignorance in persons of whatever sex or condition, not to be acquainted with the history of their own country, together with the histories of ancient Greece and Rome." In Tylor's (1896, vi) view, anthropological research aided "the great modern nations to understand themselves, to weigh in a just balance their own merits and defects and even in some measure to forecast from their own development the possibilities of the future."

2. See Lewis Henry Morgan's 1877 work, *Ancient Society*, for these comparanda. On the use of classical comparanda in comparative evolutionary schemes in nineteenth-century ethnology undertaken by Mogan, Maine, and Fustel de Coulanges, see Varto 2014. James Frazer also placed all human societies on an evolutionary line, from magic to religion to science (Borofsky 2019). Note that Tylor did press for more rigor in setting up anthropological lines of inquiry; see Hammel 1980.

3. Frazer, 1st ed., 1890, 2 vols.; 2nd ed., 1900, 3 volumes; 3rd ed. 1911–1915, 12 vols.; abridged version 1922.

4. Ackerman 2008, 149–55; Varto 2018a, 13. E.g., see the Archaeological Institute of America *Annual Report* 1880, 18–21. See also Gagné 2019.

Within anthropology, as resistance to the comparative project emerged, classics and its source material became less and less suited to its mission. Criticisms arose against approaches more generalized than contextualized, a priori adherence to unilinear evolutionism, and the use of ethnography to fill in the missing bits of antiquity. Such charges, voiced largely by such notable anthropologists as Franz Boas (1896) and Bronisław Malinowski (1926; Tobin 1990; Morris 2013, 8–9), had lasting impact.[5] For classicists, the finely read analyses and minute consideration of authorial, historical, and linguistic nuance had little to gain from comparison with cultures approached through nonliterary means, while for anthropologists, historical particularism and a preference for contextualized ethnographic analysis over comparative evolutionary ethnology resulted in a retreat from Greco-Roman antiquity, and indeed from most "armchair" comparisons, as a source of knowledge (Varto 2018a, 20).

This distance between the classical and the anthropological was furthered in the mid-twentieth century, as evolutionary models transitioned into a second phase.[6] The *Human Relations Area Files* were founded in 1949, an organization based at Yale University that collects, indexes, and distributes ethnographic data to enable systematic and cross-cultural comparison of human societies. Vere Gordon Childe, Leslie White, and Talcott Parsons responded to the Boasnian critique of evolution with studies that integrated evolutionary paradigms with Marxist, technological, and economic approaches (Orenstein 1954; Toby 1972; Barrett 1989). This renewed interest in evolutionism was combined with a desire to make arguments about social development explicit through quantification (Morris 2013, 12). This was a science of humankind. Processual or "New Archaeology," rooted in American fieldwork, insisted that archaeology was to be anthropology, or it was nothing (Willey and Phillips 1958, 2).

These innovations largely bypassed the archaeology of the Greco-Roman worlds, termed by Colin Renfrew the "Great Tradition," which remained rooted in culture-historical paradigms. Renfrew articulated this divide, writing in 1980: "it is not primarily in the application of new scientific techniques in archaeology that the Great Tradition is falling behind, but rather in the development of new *ideas* and in the acute awareness of the need for coherent and explicit theory which is the most positive and characteristic feature of the New Archaeology" (1980, 292, emphasis original). His conclusion ventriloquizes Hume and Tylor: "The ultimate purpose of archaeology, after all, is an intellectual one, to illuminate our understanding of the past of man [*sic*], and hence of the very nature of man himself [*sic*]" (1980, 292–93). Renfrew lamented the

5. But, as Robert Borofsky (2019) notes, comparison never completely died out in the first half of the twentieth century: Margaret Mead's *Coming of Age in Samoa* was published in 1928, for instance, and Ruth Benedict's *Patterns of Culture* was published in 1934.

6. On the separation between classical and anthropological archaeology, which had much deeper roots, see Renfrew 1980; Dyson 1981; Snodgrass 1985.

slowness of classical archaeology to contribute to questions of human development—a self-reflexivity about the field that recognized the constraints of its past and the complexity of its unfolding development. Indeed, the disciplines of anthropology, archaeology, and classics did not unfold in neat Kuhnian-style paradigms. Central to their emergence were dense networks of interactions among individual scholars, characterized by debates and competition as well as collaborations, carried out through the disruptions of two world wars (Gagné 2019, 37). Those who built on the foundations of notables like Émile Durkheim, Max Weber, and Malinowski produced a series of possible futures, overlapping and conflicting: the monolithic early confidence in the purpose of the human sciences gave way to what Renaud Gagné (2019) characterizes as a messy landscape, whose schisms are "cracked wide open" when one takes up the study of disciplinary history.

The comparative project, like the evolutionary, generated more separation than common ground between anthropology and classics over the course of the twentieth century. While both fields embraced the value of primary data and interpretive paradigms derived from fieldwork, classical scholars drew fire for failing to keep pace with changes in theory and method from the social sciences.[7] Uncritical use of outdated models, the decontextualization of the data on which arguments are built, and approaches to modern Mediterranean cultural groups as "descendants" of antiquity have been key complaints. The postmodern critique of evolution, functionalism, and other sweeping explanatory narratives further problematized the comparative approach. Clifford Geertz (1973) in particular emphasized the turn toward "thick description" as the only proper mode of anthropology, relegating comparitivism largely obsolete as a viable methodology. The elevation of heterogeneity and local determinism in this period by Geertz and others (e.g., Lyotard 1984, xxiv; Gerholm 1988) thus made ancient analogues for ethnographic foci less compelling, and further reduced the perceived value of classics for anthropological endeavors.[8] Thus Varto (2018a, 24) notes that classical prototypes, concepts, and examples as used by researchers in the social sciences seem to be "stuck in early twentieth-century scholarship." While calls for inter-, multi- and transdisciplinary projects have grown, those calls do not mitigate the challenges of being up to date on two separate bodies of theory and method.

7. King 2015; Cartledge 1995; See also Geertz 2005. For a more positive view of anthropology showing an interest in classics, see Harkin 2010; Knapp 1992. Sally Humphreys in the 1970s sought to argue for what classics can do for anthropology; see Humphreys 1978; Redfield 1991; Kindt 2009a; Lambert 2021.

8. Slingerland and Sullivan 2017, 314. See, e.g., the bar graph from HRAF's *Explaining Human Culture* database showing trends in the number of cross-cultural studies from the mid-twentieth century to the present: https://hraf.yale.edu/the-return-of-the-comparative-method-in-anthropology/. There is a clear rise in comparative studies from the 1950s to late 1970s, a decline throughout the 1980s and 1990s, and a steady climb once again in the twenty-first century.

With the emergence of data science in the late twentieth and twenty-first centuries, the grand themes of evolution and comparativism entered a new era. The digital means to assemble, store, query, and model vast quantities of data has connected the ethnographic with the quantitative, inspiring utopian hopes as well as heated debates (Atkinson and Whitehouse 2011; Slingerland and Sullivan 2017; Human Relations Area Files 2019; Blakely 2017). The perceived threat that quantitative and digital techniques will flatten out distinctions and dehumanize the past resonates, on the one hand, with concerns about the universalizing tendencies of nineteenth-century evolutionary models, and the risk of hasty generalizations based on unnuanced comparative projects.[9] Such concerns have, however, been answered by an array of critical approaches that have emphasized agency, affect, embodiment, and the individual. As well, humanities scholars increasingly have become involved in the creation and direction of large, quantitative projects that analyze religious patterning in human history, in particular the *Database of Religious History* (see below). Many of the anticipated benefits also resonate with the promises of early anthropology: the meaningful integration of fresh material, purposeful reflections on methodology, and the identification of questions as responsive to the worlds of their investigators as to the objects of investigation.

1.2. God the Anthropologist: Embedded, Networked, and Material Religions

How has religion fared in the evolving relationship between these disciplines, and in response to data science? Religious studies shared in the emerging evolutionary and comparativist theories of the nineteenth and twentieth centuries, and used them as frameworks to pursue two hypotheses: that religion was embedded within deeper institutional forces, or was the fount from which all other human developments emerged (Morris 1993).[10] Ritual—as a blend of narrative and performance—emerged as the lynchpin in these arguments, from William Robertson Smith's *Religion of the Semites* (1889) to the myth and ritual school of the early twentieth century, which delved into the question of the religious origins of society using sociological, psychological, and anthropological models (Segal 1998; Meletinskiĭ 2000; Ackerman 2002).[11] The myth and ritual school

9. Kim and Stommel 2018; Poole 2017; Scheuermann and Kroeze 2017; Van Eijnatten, Pieters, and Verheul 2013; Gold 2012.

10. Tylor and Andrew Lang, e.g., proposed uniformity within the human psyche that led to linear and progressive cultural evolution (Ackerman 2002, 33–39), with religion regarded as a survival from a much earlier evolutionary stage of human societies.

11. Weber, Durkheim's contemporary and another great innovator in understanding religion's role in society, placed much greater emphasis on understanding the motives of individual actors from a subjective point of view in order to understand broader social phenomena. Weber also advocated a much stronger historicist approach to religion and society. As Parsons (1963, xxvii) notes in his introduction to Weber's *The Sociology of Religion* (1922), however, Weber and Durkheim shared notable similarities, particularly their tendency to characterize religious development in evolution-

equally exemplified the macroscopic tendencies of the earliest anthropological years, a scale that inspired the emergence of structural functionalism (Versnel 1990; Morris 1993, 22; Segal 1998; Ackerman 2002).[12] Clyde Kluckhohn (1942, 46) complained that structural functionalists focused too much on "pan-human symbolic meanings," with no attempt "to discover the practical function of mythology in the daily behaviors of the members of a society nor to demonstrate specific interactions of mythology and ceremonials." Kluckhohn's approach to functionalism built largely on Malinowski, who wrote in 1926 (34–35) that "It is easier to write down the story than to observe the diffuse, complex ways in which it enters into life, or to study its function by the observation of the vast social and cultural realities into which it enters."[13]

The challenges of structural-functionalists would resurrect the tensions that informed the evolutionary and comparativist schemes of earlier generations. Focused on a reified structural system, structural functionalist scholars threatened to lose sight of the essence of myth itself as they focused on the potential of rituals—in which myth played a role—to maintain traditions, codify thought, reinforce customs, sanction rituals, regulate behavior and rationalize the social order (e.g., Malinowski 1926, 34–35; Radcliffe-Brown 1933, 405). Jean-Pierre Vernant took up the question in 1988, writing from the perspective of the "Paris School," which exemplifies the complex blend of social science perspectives in the second half of the twentieth century. Vernant's own intellectual progenitors include Durkheim (1912), Marcel Mauss (1908), Georges Dumézil, Claude Lévi-Strauss (1955), and Louis Gernet (1968; Vernant 1988, 242–46; Littleton 1996, 183; Humphreys 2009).[14] Of the functionalists he wrote that they

> do indeed seek to discover the system that makes the myth intelligible, but instead of seeking it in the visible or hidden structure of the text, that is, in the myth itself, they find it elsewhere, in the sociocultural context that

ary terms. Robert Bellah (1959, 461 n. 70) also notes the emphasis that both theorists placed on the importance of history and social change as a basis for sociological research, although the ambiguity toward historical contingency in Durkheim's work is perhaps more apparent (Ramp 2014).

12. The origins of a functional analysis of religion and society stretch back to the French philosopher and social scientist Auguste Comte, who asserted that "there can be no scientific study of society, either in its conditions or its movements, if it is separated into portions, and its divisions are studied apart" (Comte [1855] 2009, 462). Slingerland and Sullivan (2017, 314), however, note that functionalist models go back to the fourth-century BCE Confucian thinker Xunzi.

13. Kluckhohn (1942, 54) writes, "the whole question of the primacy of ceremonial or mythology is as meaningless as all the questions of 'the hen or the egg' form. What is really important, as Malinowski has so brilliantly shown, is the intricate interdependence of myth … with ritual and many other forms of behavior."

14. Influenced by these thinkers, Vernant along with Marcel Detienne and Pierre Vidal-Naquet wed rigorous sociological analyses with classics, and their work continues to be prominent. Outside of France, Walter Burkert adapted the structuralist model in *Structure and History in Greek Mythology and Ritual*, arguing that "Myth is a traditional tale with secondary, partial reference to something of collective importance." (1979, 23)

> provides the framework to the stories, in other words in the ways in which the myth is embedded in social life. Thus, the specific nature of myth and its own particular significance are lost on the functionalist. For them, myth can tell us no more than social life itself does; and so, in their view, there is nothing more to be said about it except that, like every other element in the social system, it makes it possible for the life of the group to function. (1988, 240–41)

Despite these critiques, the desire to trace an embedded religion has persisted, taking on particular clarity in the so-called polis model (Kindt 2009b, 2012). This model integrates structural functionalism with the sociology of Karl Polanyi and Moses Finley: both religion and economy become comprehensible only when conceptualized in terms of their social presence, integrated through institutions and activities into the broader fabric of their cultures (Eidinow 2015).[15] In Jan Bremmer's (1994, 2) words, "In ancient Greece … religion was totally embedded in society—no sphere of life lacked a religious aspect." The concept of embeddedness redrew the boundaries between "sacred" and "profane," yet it threatened to marginalize forms of religion operating at levels below or beyond the polis (Beard et al. 1998, 43; Bremmer 1994; Parker 1986, 265–66; Sourvinou-Inwood 2000a, 2000b). And the polis model came to exemplify, for some, a term misleadingly etic for the ancient context to which it was applied (Smith 1987, xi; Asad 1993; Nongbri 2008, 2013).

These criticisms have led to more nuanced models of the ancient city, attentive to multiple levels, realities, and experiences.[16] Three specific critiques of the polis model—focused on agency, networks, and materiality—index its productivity for the study of ancient religions. Anna Collar (2013, 2022) and Esther Eidinow (2015, 63) have highlighted the productivity of network models as articulations of the inherently relational dynamics of religious belief and practice; these offer frameworks for the attention to individual agency within larger structures proposed by Mark Granovetter (1983, 1985) and Anthony Giddens (1984). Others have used cognitive science to explain the workings of ancient religion (Larson 2016). Intersecting with these developments are further foci on the nonhuman agents that shape cognition and relations, often referred to as the "material" or "ontological turn" (Latour 2005; Knappett 2011; Hodder 2012; Witmore 2014).[17]

15. On Polanyi's use of functionalism in his theories see Hann 1992. Polanyi and Finley were likewise deeply influenced by the sociology of Max Weber. For the eagerness to use these models to free Greek and Roman religions from the post-Enlightenment conceptualizations that separated them from other spheres of life, see Insoll 2004, 17; Nongbri 2008.

16. Eidinow 2011, 2015; Kindt 2009b; 2012, 16–19; Nongbri 2008, 2013; Rüpke 2016; Scott 2017; Vlassopoulos 2007.

17. Julian Droogan (2013, 150), e.g., channeling the works of Giddens (1984), Bourdieu (1977), and Gell (1998), summarizes the active role of material culture in "forming an important medium

None of these developments completely erased the interest in large-scale models and comparisons in religious studies, however. Wendy Doniger, Bruce Lincoln, and Jonathan Z. Smith encouraged comparative, cross-disciplinary approaches, even while acknowledging the risk of hegemonic, constructivist perspectives.[18] These studies also emphasized the role of historical developments, ideology, and politics in the emergence and evolution of religious practice.[19] The interests in large-scale, interdisciplinary comparisons have continued into the twenty-first century, particularly with the rise of fields such as the cognitive science of religion (CSR; Slingerland 2015).[20] The resurgence of interest in socio-cultural evolution in the social sciences in recent decades has indeed prompted some researchers to advocate a return to functionalist and comparative models of society, this time with better data (Atkinson and Whitehouse 2011; Abrutyn 2016; Slingerland and Sullivan 2017).[21] Religion, as a significant mechanism in cultural evolution, acts within the cognitive and social arenas at both the individual and group levels to engender traits that increase group survival, such as cooperation, trust, coordination, cohesion, morality, and overall prosociality.[22] The return to large-scale explanations has prompted new interests by sociologists like the late Robert Bellah, who posited religion as one of the key drivers of human cognitive and cultural development since the Palaeolithic (Bellah 2011), although these interests were certainly alive in earlier decades (e.g., Eisenstadt 1982, 1987).

These theoretical turns are paired with new methodologies arising from what Kristian Kristiansen (2014) deems the third science revolution. The first science revolution came in the first half of the nineteenth century, with the discovery of deep time and evolutionism; late nineteenth-century Darwinism in

through which this reflexive interaction between individual agency and mass social systems occurs."

18. Lincoln 1991, 244; Smith 1990, 51; 2009, 19; Doniger 2000, 66–67; Geertz 2014a, 259; Slingerland and Sullivan 2017, 319–20; see discussion in Urban 2004.

19. Clifford Geertz (1973, 30) emphasizes the need to combine these with embedded perspectives, an attention to "the hard surfaces of life … the political, economic, stratificatory realities within which men [*sic*] are everywhere contained—and the biological and physical necessities on which those surfaces rest."

20. E.g., Guthrie 1980. For the application of cognitive sciences to Greek religion, see Larson 2016.

21. E.g., in *Darwin's Cathedral*, David Sloan Wilson (2002) argues for the revival of group-level functionalism in the social sciences alongside group-level selection theories in the biological sciences. While both the application of functionalism and evolutionary adaptation had, since the 1960s, become restricted to the level of individuals, more recent multilevel selection theories and the emphasis on the role of cultural evolution in particular have given space to the consideration of groups as adaptive units, and also to the consideration of culture as acting on the parameters of a more global evolutionary process (Richerson and Boyd 1985, 2005; Boehm 1999; Wilson and Kniffin 1999; Wilson 2002).

22. Norenzayan 2010, 2013; Norenzayan, Henrich, and Slingerland 2013; Norenzayan et al. 2016; Norenzayan and Gervais 2012; Shariff, Norenzayan, and Henrich 2009.

the social sciences was one outcome of these shifts. The second science revolution, in the post-WWII years, brought advances in scientific dating and statistics, which freed up archaeologists and historians to posit new questions about social organization and development, and gave rise to the discipline of sociobiology (Kristiansen 2014, 2022). The current revolution involves the advent of big data, such as the ability to sequence whole human genomes from archaeological remains (Daniels 2022). All of these revolutions manifest ripple effects, as innovations in the sciences open new horizons in humanistic disciplines. In the study of religion, the effects of the third science revolution are visible in inter- and multidisciplinary efforts in which new methodologies enable the pursuit of new questions regarding religion's social, cognitive, cultural, and economic roles. The *Database of Religious History* (see Monroe, ch. 9 in this volume) is one such project.

Religion thus need no longer be seen either as a discrete category, separate from its cultural and historical settings, nor as completely lost in a reified social system, but as one of the key cognitive and cultural factors that has structured social complexity. Cognitive science of religion approaches have largely bypassed interminable debates in religious studies, which tended to stall around the question of how to define "religion" as a classic Aristotelian category. These new approaches treat religion as a radial category, in which a range of concepts are organized around prototypical cases but without rigid boundaries (Lakoff 1987). At the same time, despite the promises of new methodologies and interdisciplinary research, many caveats remain, and scholars in humanities-based fields like history and classics have been slow to engage in these debates. In a critique of Ara Norenzayan's monograph, *Big Gods*, Michael Stausberg (2014, 604) notes that "historically minded scholars are not willing to subsume their evidence under potential macro-schemes, which threaten to hand evolutionary theory back to models of evolutionism." Yet, he also notes that "there is a methodological abyss dividing historical and experimental work [e.g., CSR]" (2014, 604), hearkening back to Renfrew's concepts of the Great Tradition and the Great Divide. Addressing this acknowledgement, Edward Slingerland (2015, 594) argues that "historians have yet to develop rigorous methods for substantiating generalizations about the historical record." Slingerland advocates integrating these emerging quantitative, digital, and science-based approaches with the strengths of the humanities—training "in deep, textured qualitative readings of historical sources"—and "get back in the big-picture explanation game, not … simply dismiss it" (594, 599). Armin Geertz (2014b, 610) likewise notes that CSR "has made it possible to address once again the big questions that had been abandoned by frustrated scholars of religion 100 years ago."[23]

23. See also Walsh 2020 on the relationships between digital pedagogy and Classics and the need to build more scaffolding between these two areas.

The CSR-humanities standoff seems to replay the standoff between processualists and postprocessualists; at the same time it highlights the potential to integrate these different methodologies. Interdisciplinary research agendas that integrate models from the social and data sciences with humanistic analyses and interpretations hold great promise in this respect. John Bintliff, for instance, has explored the applicability of models drawn from the natural sciences, such as punctuated equilibrium and chaos-complexity theory, to the disciplines of history and archaeology, models that, in his words, "nullify the supposed incompatibility of processual and post-processual approaches" (2006, 187). The resulting integrated models are neither unilinear, mechanistic, nor teleological. They can account for both unpredictable, nondeterminative, and nonlinear complex systems—including individual agency within those systems—and the undeniable adaptive pressures to create and follow enduring structures and networks. Social scientists might call these "path dependency," mathematicians "attractors," and historians and archaeologists the *moyenne* and *longue durée* (Bintliff 2006, 186–87). Scholars from multiple fields are thus pushing the envelope on what we *can* say about religion as a fundamental human tendency within these complex systems, and attempting to locate religion's role in broader historical narratives about human development.

The studies in this volume are the newest chapter in this long conversation about two intersections—the social sciences and the study of the Mediterranean past, and human beings and their gods. They suggest that the study of Greco-Roman religions is no longer neatly concealed in the Great Tradition, the chasm that Renfrew saw separating classics and classical archaeology from the dynamism of anthropological archaeology. Nor is it sequestered from these wider developments in the social and data sciences. The abyss, while not completely filled in, has much more scaffolding than it did in the 1970s, and the arena of ancient religions in particular has much to offer to these broader conversations.

1.3. Ten Case Studies

The ten chapters in this volume foreground the subdisciplinary boundary-crossing that has long characterized the study of Mediterranean religion, as textual and material analyses are combined.[24] This means that social science and data science approaches engage here with the philological analysis of ancient texts, the historian's concern for chronologies, politics, military events and still—no matter how profound the historiographic impact of Braudel, Horden, and Purcell—a focus on exceptional individuals, in the form of political

24. For discussion of literary/material evidence, see part II, dedicated to different types of evidence for religion (visual, literary, poetic, epigraphic, material, and papyrological), in Eidinow and Kindt 2015.

leaders, military victors, and literary voices. There is a particular place, however, in the history of religions for the recovery of nonelite voices, a methodological challenge in which the risk of projecting the investigator's subjectivity into the past is never far away—and it is a risk acknowledged by both quantitative and ethnographic researchers. The pursuit of religion joins all of these foci to the debates about definitions—of ritual activity, of sacred spaces, and of cultural conceptions of the gods.

Each of these ten chapters represents a case study, meant to test the productivity of data sciences, anthropological models, or, in many cases, a combination of the two. The test is measured via insight offered into the dynamics of ritual practice, conceptions of the divine, communication of the numinous or the performance of the self in a world saturated with gods. In chronology the studies reach from the Late Bronze Age/Iron Age interface of Greece to the Roman Imperial period; primary sources include epigraphy, coins, small finds, monumental structures, and the literary canon. Diverse as the case studies and primary materials are, a number of themes emerge that tie the discussions together, including cognitive and evolutionary models for religion, agency, materiality, and spatial analysis. In method, the studies intersect in a concern for multiscalar approaches, the integration of qualitative and quantitative analyses, and self-reflective caveats regarding the boundaries of our reconstructions. The question, briefly stated, is whether the very tools that distinguish us from our ancient counterparts can help us explore them. Can models drawn from living cultures, quantitative, spatial, and social network analyses provide meaningful access to the conception, experience, and social impact of religion in an ancient world?

The chapters are presented in three sections organized by connections in theoretical and methodological approach. The first section collects four studies centered on human science in the form of feasting, cognition, memory, and performance; the second comprises two approaches to network analysis; the third offers four studies focused on the heuristic potential for quantification and digital technologies. The looseness of these groupings arises from the themes, noted above, that recur in more than one chapter, and suggest (optimistically) a coherence in these ongoing debates.

The first two studies engage with paradigms from the cognitive science of religion and evolutionary science of religion (CSR/ESR), a combination of paradigms that has drawn energetic discussion, as noted above.[25] Key among these is the hypothesis for the prosocial impact of belief in supernatural agents: fear of punishment stimulates interpersonal trust, even between strangers, resulting in large-scale cooperation and the emergence of more complex social institutions. This hypothesis has engaged scholars across the boundaries of social

25. Norenzayan 2010, 2013; Norenzayan and Gervais 2012; Norenzayan, Henrich, and Slingerland 2013; Norenzayan et al. 2016; Shariff, Norenzayan, and Henrich 2009.

psychology and religion, philology, history, and anthropology, drawing praise for its accessibility, challenges to convention, clarity, and the importance of its questions. Criticisms have focused on an inadequate attention to historical context, and the methodology of data collection and analysis—to some extent a repetition of the critiques against early anthropological approaches.[26]

Two chapters bring these debates to the ancient Greek world. As is appropriate for a volume devoted to discussion, they reach very different conclusions on the productivity of these frameworks for ancient Greek contexts. Megan Daniels takes up the role of ritual practice in social and economic evolution with a case study from Early Iron Age Greece. The Early Iron Age offers a natural setting for exploring the evolutionary force of religion vis-à-vis social regulation from a ground-up scenario, as the centralized authority of the Bronze Age palaces had vanished, but remained, arguably, within retrievable cultural memory. Daniels specifies case studies at two famous sanctuaries, Olympia and Kalapodi, and focuses on the archaeological evidence for ritual feasts. Anthropological models frame feasting as a social praxis that transforms biological need into social messaging, supportive of group cohesion, drawing on memories of the past, and providing a theater for the performance of emerging formations for production, exchange, and the communication of political power. Feasts in sanctuaries place these events of generative commensality under the aegis of the gods and into long-term socio-political evolution. This spanning of ontological and chronological scales echoes in the geospatial mobility represented by bronze workshops in the sanctuaries, working copper and tin brought over long-distance routes from Cyprus and points further east. These objects became part of the deliberate deposition in the form of votives that, along with the detritus of dining, offer archaeological indices of new socioeconomic realities over the course of the Iron Age. Daniels foregrounds, in a way that would help satisfy the critics of ESR, the boundaries of the archaeological datasets in terms of human agency. Yet she also demonstrates how a model of prosocial, morality-enforcing practices offers a coherent narrative for the shifts in both feasting and votives as Iron Age societies evolved toward the political structures of the Greek poleis, a question Jennifer Larson takes up in her chapter.

Larson engages the question of deities, their moral supervision, and the evolution of complex societies in the context of the Greek city states; her sources are the literary canon, from Homer and Hesiod onward. These highlight the

26. Skjoldli 2015; Rüpke (2014) writes that Ara Norenzayan's (2013) monograph, *Big Gods*, is badly researched but well written. Martin (2014) faults his neglect of history, while Thomassen (2014) notes that none of his examples are acceptable (see Slingerland 2015 for commentary on these responses). See also the papers in *Religion, Brain and Behavior* 5.4: Atkinson, Latham, and Watts. 2015; Barrett and Greenway 2015; Baumard and Boyer 2015; Fuentes 2015; Johnson 2015, among others.

insufficiency of the model of prosocial evolutionary impact of gods as imagined agents in the Greek poleis. While Hesiod writes of gods compelled to punish amorality, and offers models of generalized wicked deeds, Homeric literature does not. The Zeus of the epics punishes only a limited range of offenses, and focuses his attention only on elite males. From the Archaic through the Classical period, moreover, the offenses that stir the gods to intervention are few. The Greek gods lack the omniscient, interventionary compulsions of the Judaic, Islamic, or Christian god; they are disposed neither to read the minds of their mortals, nor to unleash retribution for what they find. Larson is consonant in her criticisms with those leveled by Norenzayan's reviewers who write from the perspective of Roman religion—and indeed with the criticisms of big models which fall short of the data from the ancient world. She offers a hypothesis, however, which confirms the value of an ESR framework, and the force of cognition that underlies CSR. While big gods, as omniscient enforcers driving cultural evolution, fail to materialize in ancient written sources, the cultural mechanisms that seek to harness them do. Focused on the moral domain of interactions between strangers, these norms act as powerful prosocial institutions between and beyond poleis. *Xenia*, *hiketeia*, oral prayers, oaths, curses, truces, *asylia*, manumission, and confession inscriptions are among them: these manifest the regularization and culture-wide spread of justice that will be delivered, morality that will be enforced, and punishments that should be feared. That fear engages with CSR/ESR models to the extent that the role of perception, emotion, and anticipation at the individual level shapes the institutions of the polis. These institutions offer counterparts to the boundary-crossing effectiveness of the feasting and the long-distance trading Daniels highlights for Early Iron Age sites. All of these developments thus enable the evolution toward the settled realities of the Greek poleis, as attentive to the forces beyond their walls as to the sentient social actors within them.

The next two chapters continue the turn to social institutions, in the form of festivals from the Roman world. Maggie Popkin bridges cognitive studies with models of social memory, materiality, and agency in her analysis of souvenir figurines from Roman Cologne. Held in the hand, marked by the manufacturer, and stamped with dates for the Roman festival calendar, the mold-made terracotta figurines of Cologne functioned as agents of memory, connecting the owner to the festival, the provincial capital to the imperial center, and closing the social distances between the common people who used these tokens and the most powerful individuals of the Roman world. For the individuals of the province, for whom a trip to the big city was rare and thus memorable, the journey was an opportunity to connect an individual life event with the imperial family and the gods they sponsored, as well as the local divinities also attested in the preserved terracottas. The episodic memory of a single private event is blended with the semantic memory of a regularly repeating, culturally shared phenomenon. The souvenirs become agents of that semantic memory,

and by their dispersal in the Cologne and Rhine Valley helped construct the prospective memory of an anniversary mentality, shaping intentionality about the future, and informing group identity. The souvenirs are similarly imbricated in multiple locations, drawing networks between the location of the festival, the homes to which they traveled, and the utopian locus of Rome, the referent for the festivals whose timing corresponded to the Roman festival calendar, thus positioning religious objects as resolving certain challenges of empire.

Jacob Latham's chapter resonates with these themes of cultural memory and civic institutions, whose proper execution was a matter of fear and vigilance, as per the models of prosocial "big gods." Latham uses Roy Rappaport's anthropology to break through the paradox in the Roman *pompa circensis*, which balanced a concern for tradition, rule-boundedness, and ritual fault with an appetite for the spectacular. The *pompa circensis* answers the categories of ritual—regulated, encoded by others, more or less invariant, and involving a performance—as articulated by Catherine Bell and Rappaport. The Roman past looms large in the *pompa circensis*. Curated cultural memory becomes operational in the regulations concerning ritual fault: the case of a lead dancer in the early republic, whose deviation from established norms led to divine retribution and a repetition of the games, was an oft-repeated tale, known to authors from Cicero to Macrobius. The *pompa* was further set apart, as per Bell's definitions of ritual, from daily life by the imposition of momentary ritual "order" in the seething havoc of Rome's busy streets. It is in performance that the "more or less" principle of Rappaport's definition comes to the fore. Here the performance of the social self—one aiming at creating memorable events for their individual splendor, as well as for their comportment with the semantic memory of the procession—spurred a continual inflation of the spectacular. The Roman habitus of social performance was molded by mandates beyond the individual actor, in Pierre Bourdieu's theorization, just as ritual was for Rappaport. It is this habitus, deeply rooted but not self-conscious, that dictated this elevation in spectacle. The social success of the ritual, in the end, is shaped in the intersection of the ritual actor's innovation and his audience's response—and this success demanded evolution over time even as it dictated adherence to the past.

The second group of studies foregrounds data-driven, quantitative analyses that have informed social network analysis in ancient contexts.[27] Sebastian Heath offers a spatial, networked, and embodied analysis of Roman amphitheaters; Lindsey Mazurek, Kathryn Langenfeld, and Benjamin Gorham explore Ostia's social networks vis-à-vis the cults of Cybele, Mithras, and Egyptian gods. Both chapters prudently engage with many of the criticisms leveled against digital projects, providing detailed discussion of the methodologies behind data collection, categorization, and analysis; both pair the quantitative

27. For surveys, see Knappett 2011; Brughmans, Collar, and Coward 2016; Collar 2022; Leidwanger et al. 2014; Malkin 2011.

analyses with close read "biographies," taking the scale of their analyses from the macro to the micro to consider the cognitive and psychological impact of activities reconstructed from literary and iconographic sources. They position these in turn in the mesoscale realities of political and social interactions.

Sebastian Heath sets up a quantitative, geospatial and ultimately computational approach to the Roman amphitheaters as a response to a longstanding scholarly argument that these structures helped render the audience "more Roman" via the psychological impact of violence, divine presence, and dominating authority. Sacrifices at the amphitheaters, combined with depictions of Hercules, Icarus, Actaeon, Centauromachies, and the gods themselves, transformed the episodic memory of a day at the amphitheater into *semantic* memories with culture-wide relevance; they reflect the cognitive dynamism potential in the kinds of texts Larson uses for her analyses, and they index the prosocial function of gods whose punishments on malefactors the games provided. The analysis is restricted to 246 amphitheaters operating in the second century CE. The data used to determine the inclusion of structures and their dates is available for download on GitHub, as is the Python code used to generate maps—consonant with the principle of not merely transparency, but of reproducible research, in digital approaches to the past. The computational analysis builds on historical evidence that the experience of the spectacles was significantly shaped by the civic rivalries the crowds brought with them to the events. The comparative nearness of other amphitheaters, and the size of the crowds they would incorporate, are thus significant factors in gauging the experiences of individual attendees, which would be shaped by their degree of prior experience, their familiarity with the notion of how to behave, and the audience expertise of those around them. The outcome of the social network analysis performed in this chapter is that amphitheater attendants in central Italy and Africa Proconsularis were most likely to interact with others who had seen similar events in relatively nearby structures—their experience of the games, and their prosocial impacts, would have been measurably different from those in the furthest edges of the Roman world. Heath's analysis offers a significant qualification to the coarser-grained model of amphitheaters as mechanisms of social hierarchy and stability and moves in scale from the geospatial reach of the entire empire to the people sitting next to one another in the amphitheater, considering how their memories and their expectations reflected the social coding they had absorbed.

Lindsey Mazurek, Kathryn Langenfeld, and Benjamin Gorham present a project entitled the *Mediterranean Connectivity Initiative*, foregrounding the subjectivity of data and process in their network analyses of eastern gods and funerary inscriptions within a single but complex urban site, Roman Ostia. The data derive from the corpora of published inscriptions, which are as comparatively abundant as they are inherently partial. The stones are physically damaged, fail to record the experience of women, enslaved peoples, and the

poor, and are difficult to date with any accuracy; the scholars who digitize, organize, and create visualizations of these ancient acts of memory add another layer of distance from ancient experience. Taken together, the authors recommend the term "capta" rather than "data" as more reflective of the agency of the research designers and the accidents of history.[28] The readers, moreover, are encouraged to approach the graphs as maps of historical acts of memorialization rather than religious experience pure and simple, raising to the fore the reflective intentionality that distinguish inscriptions from preserved festival wares or faunal remains. For those in the ancient Mediterranean, the inscriptions manifest the force of prospective memory, as Popkin notes of the Cologne terracottas, because they would work to keep active the social networks whose relevance exceeded the lifespan of any individuals involved in their creation. The distinction between the commissioning and engraving, and the ultimate positioning of the inscriptions, recommends investigations that explore these steps as discrete stages in the life history of inscriptions, the first focused on the groups united under the aegis of the cult, the second on the civic community of which they were a part. The outcomes, more essentially, emphasize that data-generated visualizations are a step on the research path, but not the final goal.

The third group of chapters turns to four different categories of digital case studies, with studies focused on GIS, a religious database, numismatics, and a digital game. Sarah Murray continues the discussion of the contingency, complexity, and the necessary caveats of digital approaches, with a case study that takes up ritual practices across the Bronze Age–Iron Age transition in mainland Greece and Crete. Murray uses GIS and a comprehensive geodatabase of archaeological sites to query the hypotheses of continuity between Late Bronze Age Crete and Early Iron Age ritual sites in mainland Greece. The prevalence of sanctuaries sited in marginal locations on the mainland represents a departure from Mycenaean practice, and raises the question of influence from Minoan Crete, where ritual sites include significant proportions of rural and rugged locations. Yet these GIS-generated relationships reflect more the history of scholarship—with island of Crete heavily surveyed while Bronze Age rural sites on the mainland remain understudied—rather than a past reality. Murray concludes with two reflections on the dynamics of big data approaches in the academy. The first is a matter of origins: the turn to big data manifests the influence of cultural trends beyond the academy. The second is a matter of response: the turn to object-centered approaches in archaeological research reflects a reaction to the methodological challenges of such projects, and a rejection of big data approaches, based on the perception that such endeavors reduce the qualitative complexity of the human experience to quantitative views from a

28. As per discussion in Drucker 2011.

distance. These reflections recommend caution in our approach to the organization and evaluation of great quantities of data. If such debates can engage us with the *Forschungsgeschichte*, however, then they are ultimately productive.

Willis Monroe introduces the *Database of Religious History* (*DRH*), an international digital humanities project offering an articulated methodological response to the integration of qualitative and quantitative data. Monroe confirms that the tension between objectivity and subjectivity has always been central to the historical project. The past is imperfectly preserved, and historical writing is inherently reductive, an inevitable manifestation of the research agendas, cultural contexts, and disciplinary categories of its researchers. The *DRH* responds to this reality with a compilation based on surveys of specialists across the studies of religion. Central to the project is the creation of quantifiable information for the testing of hypotheses: these specialists enable the translation of qualitative into quantitative data, as they mediate the information from their area studies with the architecture of the database. The *DRH* responds to one of the longest-standing debates in the anthropological approaches to ancient religions, namely the drive for comparative studies, which both energized and exorcised scholars from the sixteenth century onward. Additionally, the surveys through which data are gathered reflect the designers' engagement with cognitive and evolutionary studies of religion, and a concern to provide a source for modeling the prosocial impact of religious practice in cultural evolution. Monroe's chapter is a clear and self-critical positioning of the project with respect to the history of the discipline, and how it shapes the architecture of the databases and the pathways of its users. The subjectivities of the modern researchers who supply the historical and ethnographic responses, in addition, are foregrounded: the recognition that the data is a reflection of their investigator's judgment translates into space for the qualitative commentary of its contributors.

Dan-el Padilla Peralta frames the Roman god Janus in a combination of quantitative and qualitative analyses. A well-established historical problem is the disjuncture between the god's abundant representation on coins, but slender attestation elsewhere in the Roman cultural landscape. He emerges as a significant figure in sixty-nine hoards, some seven thousand coins in total, from 300 to 212 BCE Italian contexts. The effectiveness of semiotic domination in imperial advance recommends an approach to these data as "image worlds" in which the juxtaposition, recombination, and multimedia deployment of images are read as responses to evolving personal, regional, and imperial circumstances. These image worlds were shaped by habitus as defined by Bourdieu, an unself-conscious deployment of cultural symbols. Padilla Peralta proposes identifying this habitus with the hyperreal, as a category beyond the critical capacity of any one user. Padilla Peralta emphasizes the epistemological limitations of etic investigators, echoing the insights of Mazurek, Murray, and Heath. While we are necessarily cautious about the de-

gree to which those who held these coins in their hands engaged with the images, we can be more confident in the intentionality of the powerful Romans who directed their minting. Their commissions confirm an ancient awareness of the power of coins, as highly mobile units of first order exchanges, to take on the second order, symbolic functions. The scale of investigation thus moves from the cognitive apprehension of tiny images, held in the hand, to the imperial reach of an expanding Rome. In taking up the traditional historical chestnut, and offering this scale, this resonates with Heath's querying of the old chestnut of "Romanization" behind the spread of amphitheaters; the coins' ability to blend episodic and prospective memories is reminiscent of the hand-held figures of Popkin's study.

In the final study of the volume, Sandra Blakely addresses the heuristic value of the subjectivities that distinguish the researcher from the ancient subject with two archaeogames focused on religion in ancient contexts: the Maya site of Palenque, and the social networks generated by participation in the mystery cult of the Great Gods of Samothrace. That heuristic value is a core principle of serious games, which offer a chance to test hypotheses about movement and cognition in ancient spaces. This contributes to the discussion, in this volume, about the self-reflexivity that is a necessary component of assemblages of data. Serious games add, to the inherent partiality of the ancient record, the subjectivities of the game designers, the players and their historical situation, and the inevitable limitations of digital worlds. Agency theory offers a productive response to these multiple subjectivities, and bridges the scholarly worlds of archaeology and virtual heritage sites. Agency translates in game-worlds into presence, an embeddedness in game play shaped by affective intensity as well as player skill. This affective force offers a counter to the risks of the hyperreal, whereby the engagement with the rule structure of the digital world and its procedural rhetoric overtakes the impact of the historical and archaeological situations they model. The digitally experienced ancient spaces of these two games take up a range of routes to elevate this subjective, personal, emotional component to underscore lived experiences and highlight ancient voices, particularly the symbolic expressions of Maya cosmologies and the epic, hymnic, and lyric Greek traditions. These ancient voices are meant to engage player emotions, from fear to triumph to negotiation with the divine; they also offer a bridge between the player and the ancient other, bringing into the game an awareness of the interpersonal, which resonates with the social networks that shape the game's algorithms. Both games, in the end, seek to render the players conscious of interactions that were as unreflexive as they were ubiquitous in ancient worlds. The data gleaned are thus analogous to the observations of fieldworkers, foreign to the culture they study, resonating with the long history of social science approaches to the religious "other" (Varto 2018a, 2018b).

1.4. Looking for the Gods: Paradigms, Promises, and Self-Reflexivity

The divine in each of these studies is measured, mediated, and recognized through human social actions—as the numinous authority behind processions, inscriptions, and spectacles; the focus of feasts, dedications, and sacred spaces; pressed into coins; and imbricated in person-to-person network interactions or the social institutions of the Greek city states. This is a natural thread in a collection of studies approached through the human sciences, and constitutes a coherence among them. The various paradigms that run through these diverse chapters—cognitive and evolutionary sciences, memory studies, agency, multiscalar analysis, and methodological reflexivity—suggest some emergent patterns in the intersection of human sciences, data sciences, and studies of ancient religion in the contemporary scholarly landscape. A concern for evolutionary and cognitive paradigms indexes a conviction of the productivity of models on par with some of the biggest human questions that drew the first, however problematic, attempts to unite the human sciences with the study of antiquity. Among the outcomes of these studies is the capacity to refine long-established historical questions: The "Romanization" achieved through amphitheaters (Heath) is demonstrated to be least effective in the furthest reaches of the empire—the places most imagined to stand in need of that effect. The cults distinguished as "foreign" in a bustling Roman port emerge as mediators of social well-being through quintessentially Roman activities (Mazurek, Langenfeld, and Gorham). Several studies pursue the promise of information discovery from big data, as represented by the thousands of coins (Padilla Peralta) and inscriptions (Mazurek, Langenfeld, and Gorham), dozens of archaeological sites (Murray), or the data that can be generated from interactions in digitized ancient worlds (Heath, Blakely).

The revelation of what is otherwise hidden in these mounds of materials puts these studies in conversation with big data analyses across the disciplinary spectrum.[29] Such analyses engage with the cognitive gap between the computer and its creator: while human engineering can create the technologies to gather thousands of data points, human minds are not designed to comprehend that quantity of material. Visualization, statistical analyses, and transdisciplinary efforts, relying on teams of investigators, offer bridges between the stacks of data and the human activities that created these data trails. The stories behind those activities emerge first at thirty thousand feet—broad patterns of trends or aggregates. These figure prominently in the digitally and computationally aided studies that have been faulted for their distance from the nuanced, subjective, closely read approaches that are at the core of the humanist tradition (Hall 2013; van Es, Coombs, and Boeschoten 2017; cf. Davies 2015).

29. Garfield 1963, 201, as cited in Ekbia et al. 2015, 1527. See also Ophir 2016; Van Eijnatten, Pieters, and Verheul 2013.

The macroscopic view, however, is part of the tradition of periodization and the search for change over time that are the particular remit of the historian and the archaeologist, and thus appropriate for the cultural foci of these chapters in the ancient Mediterranean.

The overwhelming consensus among these studies, moreover, is the integration of the closely read individual object or text with the big picture, a "toggling" between the micro and the macro that Karen van Es, Nicolás López Coombs, and Thomas Boeschoten (2017, 173) identify as an emergent norm in the era of digital humanities. Caution about our ability to confirm the cognitive engagement of the ancient individuals is paired with a focus on affect, on memory, and on habitus. Affect, as personal subjective emotional engagement, is recognized as a driver of social choices in a digitized game, in the emergence of social networks in Ostia, and the experience of the ancient amphitheater. Memory studies offer paradigms useful throughout this volume, as a factor shaping cultural performance in Iron Age feasting and the *pompa circensus*, Roman behavior at the amphitheater, and as materialized in terracottas, coins, inscriptions, and votives. These objects, as they are moved, exchanged, and displayed, manifest agency as archaeologically modeled in multiple contexts, triggering memories of the past or invocations of future, culturally cyclic events. Each of these theoretical paradigms offer distinct pathways toward a shared goal—an open-ended, ongoing modeling of the most likely subjective reality for peoples of the ancient Mediterranean using divine symbols toward social, economic, and political goals.

These models are characterized by exceptional levels of self-reflexivity when it comes to theory and method, a stance in the field that emerges as one of the strongest messages from this collection of studies. Authors foreground the partiality of the data, the purposes of their proposals, the boundaries of technological capabilities, and indeed transparency to the point of granting open access to the entire database of their ongoing projects. The subjectivities of researchers, which leads to the term "capta" rather than "data" for Mazurek, Langenfeld, and Gorham, are identified and problematized in Murray on the one hand, and are analyzed for insight in Monroe and Blakely. These conversations resonate with the the emic-etic divide, which is both the classic anthropological problem, and its opportunity. It is where the field begins, and has tugged at the edges of ancient Mediterranean investigations ever since the Renaissance placed Greece, Rome, its poets, artists, and philosophers at the heart of European and investigative identities. The paradox of anthropology is the proposal that the distance from our objects of study should be precisely the pathway for us to understand them more clearly—because, among other reasons, it foregrounds our own assumptions, demands a clarity about our methodologies, and connects us not only to the ancient objects of our investigation, but to the long arc of scholars who have wrestled with the same distance. The divide, while clearly drawn in the current scholarly landscape, has analogy to