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LOYAL WORKERS AND DISTINGUISHED SCHOLARS: BIG HUMANITIES AND THE ETHICS OF KNOWLEDGE

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Over the past two decades, long-running debates about the purposes and practices of humanistic inquiry have been refocused as a debate about the uncertain fate of the humanities in a digital age. Now, with the advent of digital and computational humanities, scholars are discussing with a new urgency what the humanities are for and what it means to practice them. And many suggest that the surfeit of digital data is unprecedented and are calling for new methods, practices, and epistemologies. This article considers these claims in light of a longer history of what Lorraine Daston has called "practices of compendia"—practices of collecting, collating, and interpreting massive amounts of data. It focuses, in particular, on the late nineteenth-century German historian Theodor Mommsen and the range of projects he initiated and led as secretary of the Prussian Academy of Sciences. Mommsen invented the "big humanities" and what his contemporaries termed the "industrial" model of scholarship, a model that helped create a new, modern scholarly persona and a distinctly modern ethics of knowledge.

KNOWLEDGE IN A DIGITAL AGE

Over past two decades, long-running debates about the purposes and practices of humanistic inquiry have been refocused as a debate about the uncertain fate of the humanities in a digital age. Now, with the advent of digital and computational humanities, scholars are discussing with a new urgency what the humanities are for and what it means to practice them. Both the *digital* and the *humanities* are rich concepts with complicated, involved histories. And the *digital humanities*, if they are to have any coherence, need to be understood in terms of these two histories.

In *The History Manifesto* historians David Armitage and Jo Guldi recently hailed the emergence of "big data" as an opportunity to revive big questions, big history, and the *longue durée*, and thus to make history matter again.[1] But not

[1] David Armitage and Jo Guldi, *The History Manifesto* (Cambridge, 2015).

all historians are as sanguine about the prospects of digitally enhanced history. The reception of their manifesto, among historians at least, has been heated. Deborah Cohen and Peter Mandler dismiss Armitage and Guldi's "irresponsible generalizations" as proxies for an unsubstantiated assertion that the "long term" and more data necessarily entail more significant and more meaningful history.[2] Armitage and Guldi responded in turn by dismissing the academy's "endemic institutional short-termism." There is no *longue durée* without more data and the practices needed to collect it. Despite their disagreements about the epistemological prospects of "big data," however, Armitage and Guldi, as well as their critics, extol or impugn "big data" as though it were a phenomenon without a history.

The debate surrounding the *History Manifesto* echoes a similar one among scholars of literature. On one side of the debate, Matthew L. Jockers, a professor of English at the University of Nebraska and author of *Macroanalysis: Digital Methods and Literary History*, argues, similarly to Armitage and Guldi, that with the improvement of massive digital text collections, from noncommercial partnerships such as HathiTrust to for-profit, vendor-run repositories such as ECCO, humanities scholars can now pose unprecedented questions and develop new practices. The imminent "revolution" in humanistic inquiry will require a "new methodology, a new way of thinking about our object of study"—an entirely new epistemology. Jockers encourages humanities scholars, poorly equipped with their "subjective and highly anecdotal methods," to adopt science's ready-made methods and epistemologies.

But Jockers's conception of science is limited: "The goal of science ... is to develop the best possible explanation for some phenomena. This is done via a careful and exhaustive gathering of evidence. We understand that the conclusions drawn are only as good as the evidence gathered."[3] Science, not individual scientists, explains by exhaustively gathering evidence, in accord with a fully formed prior hypothesis. For Jockers, science is a distributed enterprise that delivers conclusions.[4]

On the other side of the debate, a range of critics have mocked the digital humanities for their purported obsession with data, graphs, and numbers, which

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2 For Cohen and Mandler's review, as well as Armitage and Guldi's reply, see *American Historical Review* 120/2 (2015), 527–54.

3 Matthew L. Jockers, *Macroanalysis* (Urbana, 2013), 3–4, 5-6.

4 Compare Jocker's caricature, for example, to Paul Feyerabend, *Against Method: Outline of an Anarchist Theory of Knowledge* (New York, 2010); Barbara Hernnstein Smith, *Scandalous Knowledge: Science, Truth, and the Human* (Durham, NC, 2006); and, for a discussion of Jockers in particular, see Barbara Hernstein Smith, "What Was Close Reading? A Century of Method in Literary Studies," a lecture delivered at Columbia University, 6 May 2015.

either tell us nothing we don't already know or, more egregiously, delegate the task of thinking to computers and their algorithms. But most critics of the digital humanities don't discuss what scholars actually do with their digital tools—compiling, editing, marking, annotating, visualizing, and simply transforming our print to a digital archive. They focus, instead, on the flashy claims of scholars such as Franco Moretti, the founder of Stanford's Literary Lab, and what he calls "distant reading," the application of computational and quantitative methods to study massive numbers of texts. Describing the deleterious effects of the digital humanities on English departments, the critic and Columbia University professor Adam Kirsch recently argued that scholars such as Moretti make a "false analogy between the humanities and the sciences."

Kirsch's essay, "Technology Is Taking over English Departments," however, wasn't really about the digital humanities. It was about the humanities more broadly and one critic's notion of what they ought to be. The problem with the digital humanities, he writes, is that they go against the "nature of humanistic work":

> Humanistic thinking does not proceed by experiments that yield results; it is a matter of mental experiences, provoked by works of art and history, that expand the range of one's understanding and sympathy . . . This is why the best humanistic scholarship is creative, more akin to poetry and fiction than to chemistry or physics: it draws not just on a body of knowledge, though knowledge is indispensable, but on a scholar's imagination and sense of reality.[5]

Establishing a sharp boundary between subjectivity and objectivity, Kirsch writes of the humanities as begotten of a creative, technologically unadorned subjective will, whereas the sciences are tethered to a mechanical, routinized objective method, whose very authority derives from its capacity to control subjectivity.[6] But Kirsch's humanities is as monolithic as Jocker's science.

The current debates about the humanities in a digital age are being waged just as expansive collections of texts dating from the beginning of writing have become accessible as digitized documents. Like the natural, physical, and social sciences, the humanities are flush with data. Confronted with this surfeit of material, scholars have begun to reflect, or worry, as is the case with some, about the practices and ends of humanistic inquiry. Reflections such as these have historically taken on particular urgency in moments when innovations

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5 Adam Kirsch, "Technology Is Taking over English Departments: The False Promise of the Digital Humanities," *New Republic*, 2 May 2014, at https://newrepublic.com/article/117428/limits-digital-humanities-adam-kirsch.

6 On the history of "objectivity" in the sciences and its complex relation to subjectivity see Lorraine Daston and Peter Galison, *Objectivity* (New York, 2010).

in information gathering coincided with related but perhaps broader pressures concerning economic and social tumult or technological change. The worries of critics such as Kirsch about the digital humanities most likely would not have gained such traction were humanities scholars not currently debating their uncertain future. Experiences of data deluge are typically accompanied by scholarly anxieties. Part of the anxiety, as Ann Blair describes it, is that there is simply too much to know.[7] And digitization has only exacerbated that problem and its attendant anxieties.

But, as Lorraine Daston has recently argued, digitization is "only the latest in a parade of ways to make data physical, visible, accessible, and durable."[8] The collection, collation, conservation, and interpretation of large troves of data have a history—what Daston terms "practices of compendia." For centuries such practices for collecting data and evidence have been central to the humanities. Even if the era of so-called "big data" has ushered in new scales and velocities, it has not necessarily introduced radically new epistemologies or practices.

Humanists' discomfort with data is due, in part, to the fact that the history of the humanities has generally been told as an elaboration of Albrecht Dürer's engraving *St. Jerome in His Study* (1514): the story of the solitary scholar, laboring alone, but for the occasional lion and dog, among his books. But the humanities have a long history in collective projects as well. In early eighteenth-century Germany (1731–54), Johann Zedler edited and published one of the biggest and most extensive encyclopedias (sixty-eight volumes) in European history by collecting articles (over 284,000) from hundreds of unnamed scholars; between 1751 and 1772, Denis Diderot and Jean le Rond d'Alembert edited the work of a "society of gentlemen" to publish twenty-eight volumes with over 71,000 articles of their *Encyclopédie*; and over the last decades of the century, a series of German encyclopedia projects coordinated the scholarly work of dozens of people.[9] These Enlightenment-era projects in the vernacular extended the scholarly practices and genres of early modern encyclopedists, bibliographers, and lexiographers such as Conrad Gesner (1516–1565) and Johann H. Alsted (1588–1638), who relied on loose networks of, as Ann Blair recently put it, "willing helpers."[10] The history

7 Ann Blair, *Too Much to Know: Managing Scholarly Information before the Modern Age* (New Haven, 2010).

8 Lorraine Daston, "The Sciences of the Archive," *Osiris* 27/1 (2012), 156–87; see also the final section of essays, "Observing Together: Communities," in Lorraine Daston and Elizabeth Lunbeck, eds., *Histories of Scientific Observation* (Chicago, 2011), 369–444.

9 See Chad Wellmon, "Touching Books: Diderot, Novalis and the Encyclopedia of the Future," *Representations* 114/1 (2011), 65–102.

10 Ann Blair, "Hidden Hands: Amanueses and Authorship in Early Modern Europe," talk delivered at the Ohio State, 8 Oct. 2015; see also, Blair, *Too Much to Know*.

of the humanities is one not just of solitary acts of interpretation but also of collaborative practices.

Until the last third of the nineteenth century in Germany, at least, the natural and physical sciences, as Rüdiger von Bruch and Daston have pointed out, imitated many of the methods and practices of disciplines such as philology, which pioneered techniques in data mining, the coordination of observers, and the collection and compilation of information. In the late nineteenth century, the Prussian Academy of Sciences pioneered a new form of project-based, collaborative, large-scale scholarship. These projects challenged not only paradigms of method, evidence, and interpretation, but also the epistemic and ethical norms of how legitimate scholarly inquiry should be practiced in the human sciences. Under the leadership of historian and classical scholar, Nobel Prize winner and socialist politician Theodor Mommsen, who served as its permanent secretary from 1873 to 1895, the academy institutionalized a form of scholarship organized around the collection of massive amounts of material over decades, the management of thousands of scholars and workers, and the division of intellectual labor—what Mommsen and his contemporaries termed *Großbetrieb der Wissenschaft*.[11] Before there was "big science" or "big data," there was big humanities.[12]

Mommsen's industrial model of scholarship became the object of withering criticism and, for many late nineteenth-century German scholars, a sign of an impending crisis in humanistic knowledge. The debate around the "big humanities" crystallized the epistemological and ethical assumptions that had governed German scholarship for almost a century and anticipated the divisions between the cultural and social sciences, on the one hand, and the natural and physical sciences, on the other: individual versus collaborative inquiry, interpretive versus descriptive or explanatory inquiry.

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[11] On Mommsen and his work as a precursor to big science see Stefan Rebenich, *Theodor Mommsen und Adolf Harnack: Wissenschaft und Politik im Berlin des ausgehenden 19. Jahrhunderts. Mit einem Anhang und Kommentierung des Briefwechsels* (Berlin, 1997); Rudiger vom Bruch, "Mommsen and Harnack: Die Geburt von *Big Science* aus den Geisteswissenschaften" in Alexander Demandt, Andreas Goltz, and Heinrich Schlange-Schöningen, eds., *Theodor Mommsen: Wissenschaft und Politik im 19. Jahrhundert* (Berlin, 2005), 121–41.

[12] Bruch, "Mommsen and Harnack." On the history of "big science" see Steve Shapin, *The Scientific Life: A Moral History of a Late Modern Vocation* (Chicago, 2008), esp. 80–87 and 169–73. On the differences between big science and the big humanities see Torsten Kahlert, "Große Projekte: Mommsens Traum und der Diskurs um Big Science und Großforschung" in Harald Müller and Florian Eßer, eds., *Wissenskulturen: Bedingungen wissenschaftlicher Innovation* (Kassel, 2012), 67–86; Carlos Spoerhase, "*Big Humanities*: 'Größe' und 'Großforschung' als Kategorien geisteswissenschaftlicher Selbstbeobachtung," *Geschichte der Germanistik* 37/38 (2010), 9–27.

The emergence of the *big* humanities in late nineteenth-century Germany is only one chapter in the history of practices of collection and compilation. And over the past decade various scholars have begun to describe them in great detail. But whereas scholars such as Daston, Stefan Rebenich, and von Bruch have outlined the epistemological assumptions of these practices, especially in relation to Mommsen, I focus on their ethical ideals. The emergence of the "big humanities" entailed not just different conceptions of how scholars established authoritative knowledge—notions of evidence, facts, critique, and argument—but also different conceptions of the kind of person a scholar ought to be.[13] The "big humanities" helped create a distinct and uniquely modern scholarly persona.

In organizing a decades-long compilation of Roman inscriptions, Mommsen institutionalized a new model of modern scholarship, which had far-reaching epistemological, political, and ethical consequences for humanistic inquiry. The emergence of the "big humanities" challenged ideals that had been central to German academic and intellectual culture for more than a century.[14] The deeply moral nature of this forgotten debate—the judgments about the legitimate ends of knowledge and the character of the scholar—resonate with our contemporary debates about the shape and ends of knowledge in a digital age. In moments, such as ours, when scholars and intellectuals experience a surfeit of data and are confronted with new forms of evidence, they have typically returned to questions

[13] This essay also owes a great deal to Daston and her unpublished keynote address, "Science, Humanities, Wissen, Wissenschaft: Remapping Knowledge," delivered at the German Studies Association annual conference in 2013 in Milwaukee. Subsequently, Daston published a different essay on Mommsen, "Authenticity, Autopsia, and Theodor Mommsen's *Corpus Inscriptionum Latinarum*," in A. Blair and A. S. Goeing, eds., *For the Sake of Learning: Essays in Honor of Anthony Grafton*, vol. 2 (Leiden, 2016), 955–73. My essay is simply an extension of her work on Mommsen and the history of knowledge more broadly.

[14] On the emergence of the "big humanities" more broadly see Spoerhase, "Big Humanities"; and Stefan Rebenich, "Vom Nutzen und Nachteil der Grosswissenschaft: Alterthumliche Unternehnumgen an der Berliner Akademie," in Annette M. Baertschl and Colin Guthrie King, eds., *Die Modernen Väter der Antike: Die Entwicklung der Altertumswissenschaften an Akademie und Universität im Berlin des 19. Jahrhundets* (Berlin, 2005), 397–421. There is an increasingly large body of work on the history of the humanities. This essay expands on this work by focusing more on the practices and techniques of humanistic work, which, as I hope to show, have a great deal in common with what are typically understood to be the "sciences." For some of the most recent work on this history see the three volumes edited by Rens Bod and Jaap Maat, *The Making of the Humanities*, vol. 1, *Early Modern Europe* (Amsterdam, 2011); *The Making of the Humanities*, vol. 2, *From Early Modern to Modern Disciplines* (Amsterdam, 2013); *The Making of the Humanities*, vol. 3, *The Modern Humanities* (Amsterdam, 2015).

about the shape of scholarly practices—their norms, ethos, and ends. And so, when considered in light of historical practices of collecting and organizing data to make it meaningful, our current debates can be seen as part of a longer history of the ethical and epistemological norms governing humanistic inquiry and scholarship. Considering digital or computational humanities in these historical terms will also help us theorize practices—such as search techniques, database construction, or curration practices—that, as the literary scholar Ted Underwood puts it, we "forgot" to theorize twenty years ago.[15]

The late nineteenth-century German debate about the "big humanities" was also part of a broader debate around 1900 about modern scholarly knowledge (*Wissenschaft*) more generally, which, by the beginning of the twentieth century, Max Weber could assume had "entered a phase of specialization previously unknown that would forever remain the case."[16] Weber's declaration marked the end of the dream of a unified *Wissenschaft*. But Mommsen, despite his purportedly modern disposition toward knowledge, continued to hold fast to it and, in so doing, helped reinvent the humanities and the ethical persona of the modern scholar.

SCHOLARSHIP OF THE COLLECTIVE

While traveling around Italy in 1844–5 on a research fellowship, Theodor Mommsen, then only a young scholar without a permanent academic appointment, spent every morning in a library, museum, or archive working through Roman manuscripts. Before he had left Germany for Italy, he had planned to edit a new edition of Christian Haubold's book of Roman legal sources first published in 1830.[17] But before Mommsen had even arrived in Rome in late 1844, he had changed his mind and decided to gather the "*momumenta legalia* into the most comprehensive and exacting collection" ever assembled.[18]

As a law student at the University of Kiel, Mommsen had focused on ancient Roman law and had been trained in the German historical school of jurisprudence, whose underlying tenet was that the only way to understand modern German law was through the study of its Roman antecedents. All law,

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15 Ted Underwood, "Theorizing Practices We Forgot to Theorize Twenty Years Ago," *Representations* 127/1 (2014), 64–72.

16 Max Weber, "Wissenschaft als Beruf," in *Max Weber: Schriften 1894–1922*, ed. Dirk Kaesler (Stuttgart, 2002), 474–511.

17 *Antiquitatis Romanae Monumenta Legalia extra Libros Juris Romani sparsa* (Berlin, 1830). See Mommsen's letter from 18 April 1844 to the philologist Otto Jahn in Lothar Wickert, ed., *Briefwechsel: Theodor Mommsen, Otto Jahn* (Frankfurt am Main, 1962), 5.

18 Otto Jahn quoted in Adolf Harnack, *Geschichte der Königlich Preussischen Akademie der Wissenschaften zu Berlin*, vol. 1(2) (henceforth Harnack, *Geschichte*) (Berlin, 1900), 901.

as the pioneer of German historical jurisprudence Friedrich von Savigny put it, "is first produced through morals and commonly held beliefs, then through jurisprudence," and not through "the will of a lawgiver."[19] The law, like art, was a historical and cultural phenomenon and, thus, had to be studied with historical and philological methods. As a law student, Mommsen had become acquainted with the methods and textual criticism of German philologists such as August Boeckh (1785–1867), Karl Lachmann (1793–1851), and Gottfried Hermann (1772–1848). In Rome, he began to apply these methods of German textual criticism to manuscripts and inscriptions alike.[20]

After only a few months in Rome's libraries and archives, Mommsen realized that his plan to locate, compile, collate, edit, and ultimately publish all Latin inscriptions from the Roman Empire would require a different kind of scholarship. And he was acutely aware of the long list of scholars and their failed projects that had attempted to do something similar before him. Initially, he worked with Otto Jahn, Mommsen's friend and former teacher, to request 20,000 thaler from the Prussian Academy for a joint inscription project.[21] In 1847, Mommsen submitted what might be considered the first "big-humanities" grant proposal to the academy: "A Memorandum for a Plan for the *Corpus Inscriptionum Latinarum* [CIL]"[22] Although he had requested an unprecedented amount in his earlier proposal with Jahn, Mommsen made clear in his "Memorandum" that the project would be even more "sweeping and costly" than originally thought.[23] Jahn and Mommsen's negotiations with the academy lasted years, because several of its leading members, the Berlin philologist August Boeckh in particular, worried about the "immensity of the project" and doubted whether any one scholar could maintain a "view of the whole."[24]

Mommsen's inscription project was not the first of its kind. From 1825 to 1877, Boeckh led the *Corpus Inscriptionum Graecarum* (CIG), which compiled public Greek inscriptions, thereby promoting epigraphy—the systematic study of inscriptions—as a crucial method for the study of ancient cultures.[25] Although

[19] Friedrich Savigny, *Vom Beruf unserer Zeit für Gesetzgebung und Rechtswissenschaft.* (Heidelberg, 1828), 14.

[20] Daston provides the most helpful account of Mommsen's debt to the tradition of German textual criticism and his notion of *Kritik* in "Authenticity, Autopsia, and Theodor Mommsen's *Corpus Inscriptionum Latinarum*."

[21] See Harnack, *Geschichte*, 906–8. After debate among academy members, Jahn and Mommsen's request was reduced to around 8,000 thaler.

[22] I quote from a reprinted version in *Theodor Mommsen: Tagebuch der französisch-italienischen Reise 1844/45* (Frankfurt, 1976). Cited henceforth as Mommsen, "Plan."

[23] Mommsen quoted in Harnack, *Geschichte*, 908.

[24] Otto Hirschfeld, *Gedächtniss Rede auf Theodor Mommsen* (Berlin, 1904), 16.

[25] Christian Emden, *Friedrich Nietzsche and the Politics of History* (Cambridge, 2008), 157.

Boeckh had originally proposed to collect previously unpublished inscriptions, the commission set up to oversee the project rejected the idea of sending scholars out to collect new inscriptions from the stones themselves.[26] It decided, instead, only to send scholars to compile inscriptions that had been sporadically collected in manuscripts or printed books and organize them according to a "coherent" plan.[27]

Boeckh's and Mommsen's projects shared a vision of large-scale, collaborative humanistic scholarship. In his initial *CIG* proposal from 1815, Boeckh sought to collect and make accessible thousands of inscriptions that were "scattered" and "nowhere complete."[28] He recognized that such a comprehensive collection would require a different type of intellectual labor, one more conducive to the academy, with its focus on research, than to the university, with its dual commitments to research and teaching. The philologist, he claimed, had a "duty" to confront and organize the "manifold" (*Mannigfaltigen*). But he also had to recognize that as the "mass of material continued to grow," so too did the need for a "division of labor." Advanced academies, he continued, should not simply be a place for scholars to gather privately and chat about their scholarship. They should support and organize projects that "no individual [scholar] can carry out on his own, either because his abilities are not commensurate or because they never could be."[29] Such projects required an "association" (*Verein*) supported by the state.[30] The university was the institution of the individual scholar, whereas the academy was the institution of a collective of scholars working collaboratively on "universal" projects.

In funding the *CIG* the academy did something entirely different from the university and introduced new ways of organizing scholarly practices. It required its members, who traditionally delivered individual lectures, submitted individual reports, and wrote individual essays, to work together as a collective body.[31] The academy established a commission to oversee the *CIG*, on which all five members of the historical-philological class served. According to the commission's regulations, members were required to meet every week and submit

[26] Harnack, *Geschichte*, 671.

[27] Ibid.

[28] August Boeckh, "Antrag auf ein Corpus Inscriptionum," in Harnack, *Geschichte*, 374–8, at 377.

[29] Harnack, *Geschichte*, 669.

[30] Boeckh, "Antrag," 378. Harnack describes this idea of the academy as an institution for collective and collaborative projects that no individual scholar could undertake as the "leitende Gedanke" of the philological-historical class. Harnack, *Geschichte*, 670.

[31] Petra Hoffmann, *Weibliche Arbeitswelten in der Wissenschaft: Frauen an der Preußischen Akademie der WIssenschaften zu Berlin 1890–1945* (Bielefeld, 2011), 61.

a written report on the progress made toward the "collective work."[32] The *CIG* commission paved the way for a new form of academy scholarship organized around "collective empiricism," forms of inquiry that coordinate, compile, and integrate contributions and material from observers "distributed over time and space."[33]

THE EPISTEMOLOGY OF THE ARCHIVE AND THE ETHIC OF THE COLLECTIVE

Mommsen's proposal from 1847 was an indictment of Boeckh's project.[34] But it was also, as numerous scholars have detailed, a clear statement of the epistemological principles that would guide his decades-long work on the *CIL*: critique, totality, and authenticity: "The purpose of the *CIL* is to unify all Latin inscriptions into one collection, to bring them together in a convenient order, and, after exclusion of the false stones, to reproduce them critically and exactly in a text with an extensive *varietas lectionis* and an accurate index that makes for easy use."[35] Mommsen cast his proposed project in the "critical" language of philologists such as Lachmann, who sought to provide a systematic method to standardize the transmission of texts. Whereas Boeckh's *CIG* was limited to the literary tradition, Mommsen sought to ground the *CIL* in autopsy, in person visual examination. More and more accurate material would result in better evidence.[36]

While still negotiating with Mommsen and Jahn, the academy entrusted A. W. Zumpt, a German classical scholar, with the inscriptions project. But Zumpt was almost immediately overwhelmed with, as he put it, the "mass of inscriptions,"[37] so he resigned. The publication of Mommsen's *Latin Inscriptions*

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32 Harnack, *Geschichte*, 379–82; see also Conrad Grau, *Die preußische Akademie der Wissenschaften zu Berlin: Eine deutsche Gelehrtengesellschaft in drei Jahrhunderten* (Berlin, 1993), 154.

33 Galison and Daston, *Objectivity*, 19–27; see also Lorraine Daston, "The Sciences of the Archive" *Osiris* 27/1 (2012), 156–87; the final section of essays, "Observing Together: Communities," in *Histories of Scientific Observation*, ed. Lorraine Daston and Elizabeth Lunbeck (Chicago: University of Chicago Press, 2011), 369-444.

34 See Daston, "Authenticity, Autopsia, and Theodor Mommsen's *Corpus Inscriptionum Latinarum*," for a detailed account of how Mommsen's project differed from Boeckh's.

35 Mommsen, "Plan," 225.

36 See Wilfried Nippel, "New Paths of Antiquarianism: Mommsen and Weber," in Peter N. Miller, ed., *Momigliano and Antiquarianism: Foundations of the Modern Cultural Sciences* (Berkeley, 2007), 207–28; Stefan Rebenich, *Theodor Mommsen: Eine Biographie* (Munich, 2002), 50–55.

37 Quoted in Lothar Wickert, *Theodor Mommsen: Eine Biographie*, vol. 3 (Frankfurt am Main, 1969), 264.

of the Kingdom of Naples in 1852 convinced, as Adolf Harnack, a church historian and Prussian Academy member, later put it, even the most "obtuse" of observers that Mommsen's project was feasible and of value, and so in 1854 King Wilhelm IV approved six years of funding worth 12,000 thaler in total.

In 1858, eleven years after Mommsen had submitted his original proposal for the *CIL* and four years after he had begun work on it, he was invited to join the academy and assume sole leadership of the project. In his inaugural lecture, Mommsen extended the principles of the *CIL* to the academy more broadly. The purpose not just of the historical-philological class but also of the entire institution, he argued, was to organize the "archive of the past."[38] All sciences were archival.

Importantly, Mommsen's "archive of the past" was not an idealistic unity of knowledge, a Kantian notion of totality as an idea of reason that corresponded to nothing in reality. Mommsen wanted scholars to collect what was given and shape it into meticulously organized, edited, and indexed printed volumes—he wanted to make the data of history visible, accessible, and navigable. The unity of the past could not be posited as an act of reason; it had to be assembled as an archive. The archive was an infrastructure in the present ultimately intended for scholars of the future. It was a database.

Such an archive was necessary, claimed Mommsen, because "all unmediated tradition [had] fallen silent."[39] Following his mentor Georg Barthhold Niebuhr's critique of the unreliability of the literary tradition on which most ancient history had been based, Mommsen considered the inherited tradition—that which had been literally "delivered over" from the past—a "pseudo-tradition" (*Scheinüberlieferung*).[40] Given such a state, the task of modern historians and philologists was the "compilation and classification" of the "incomplete processes of tradition."[41] They had to organize "unmistakable remnants" of the past into a form that could be trusted.[42]

Echoing his original proposal for the *CIL*, Mommsen argued that such an archive should have three primary features: it should be based on discrete facts, not inherited stories; it should be, as he put it, authentic and reliable; and it should be comprehensive. Although Mommsen didn't limit such an archive to ancient

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38 Theodor Mommsen, "Akademische Antrittsrede," in Mommsen, *Reden und Aufsätze* (Berlin, 1905), 35–8, at 37, 38.

39 Theodor Mommsen, *Römische Geschichte: Vollständige Ausgabe in acht Bänden*, vol. 1 (Munich, 1976), 30.

40 Otto Seeck, "Zur Charakteristik Mommsens," *Deutsche Rundschau* 118 (1904), 75–108, at 87.

41 Mommsen, "Akademische Antrittsrede," 37; and Mommsen, "Über die Königliche Bibliothek," in Mommsen, *Reden und Aufsätze*, 225.

42 Seeck, "Zur Charakteristik Mommsens," 88.

inscriptions, his *CIL* exemplified the scholarly practices that he thought would make it possible. It was the first and most exemplary of the big "compilation projects" to which the academy would devote itself.[43]

WHAT IS A HISTORICAL FACT?

A true "archive of the past," wrote Mommsen, had to be based not on the literary accounts of ancient authors such as Livy and Appian of Alexander and their modern interpreters, but rather on the "logic of facts."[44] Scholars, such as Niebuhr in his pioneering work on source criticism, relied solely on literary or textual sources such as letters, speeches, and narratives.

But "books," wrote Mommsen, "were insufficient" forms of evidence.[45] Their narrative form gave too much value to interpretive interjections and authorial interventions. Literary evidence was inevitably marred by the gaps, inconsistencies, and errors of textual transmission over time. Earlier in 1851, Mommsen lambasted prominent Basle philologist Johann Bachofen for failing to distinguish between what could "actually" be known about the language, customs, religion, and legal institutions of ancient Rome and the "later chatter of scholars and poets about the fatuous legends."[46]

For Mommsen, it made no difference "whether tradition was transmitted through ore and marble or through parchment and paper."[47] He juxtaposed the narrative, diachronic character of traditional literary sources to the synchronic, object-like character of "monuments" of the past that bore, as Daston puts it, a more "immediate" witness to their time.[48] The very physicality of "facts" (*Tatsachen*)—inscriptions carved in stone or coins impressed on metal—situated them more immediately in the past and lent them an indexical quality.[49] They pointed, he believed, directly to an ancient Roman culture, whose republican history Mommsen considered a better model for a modern liberal state

43 Mommsen quoted in Harnack, *Geschichte*, 1004.

44 Theodor Mommsen, "Antwort an Nitzsch, 3. Juli 1879," in Mommsen, *Reden und Aufsätze*, 199.

45 Mommsen, "Plan," 230.

46 Theodor Mommsen, review of *Geschichte der Römer* (1851) in Mommsen, *Gesammelte Schriften*, vol. 6 (Berlin, 1910), 653.

47 Mommsen, "Otto Jahn," in Mommsen, *Reden und Aufsätze*, 458–61, at 459.

48 Daston, "Authenticity, Autopsia, and Theodor Mommsen's *Corpus Inscriptionum Latinarum*."

49 Seeck, "Zur Charakterisktik Mommsens," 89.

than Greece's *polis*.[50] When assembled according to principles of totality and authenticity, these individual "facts" became a coherent and authoritative archive.

Mommsen's ideals of an indexical, synchronic form of evidence drew in part on older forms of antiquarian scholarship, which since the Renaissance and eighteenth century had guided scholars as they compiled giant catalogues of Roman objects. But Mommsen thought that any authentic archive had to be complete. He designed the *CIL*, for example, not simply to facilitate the interpretation of any one inscription, but more importantly to help scholars discover and reveal relationships among tens of thousands of inscriptions. The evidentiary power and potential meaning of inscriptions was premised on the possibility of a comprehensive set of facts. In this sense, Mommsen's notion of an "archive," as realized in part in the *CIL*, undermined the linearity of the traditional literary archive. Instead of organizing evidence according to the syntax of linear reading, the line-by-line or sentence-by-sentence progression of text-based reading, Mommsen imagined an archive that was multidimensional, more spatial than temporal. And he and his fellow editors organized the inscriptions accordingly. Each volume of the *CIL* was organized geographically according to the region where the inscriptions were located.

WHAT IS AUTHENTICITY?

Mommsen designed a system that advanced epigraphy into a science with its own detailed practices. It drew on modern critical methods of philology to compare various versions of inscriptions when a squeeze—a paper cast impression—of the original could not be made.[51] The "authenticity" of the corpus was to be based on three elements in descending order of reliability: the stones themselves, manuscript collections, and the literary tradition.[52] Collectors and editors of epigraphs had struggled for centuries with forgeries or inscriptions of

[50] Mommsen's innovation had less to do with the idea of antiquities as evidence than with the application of such evidence to the institutional history of Roman law. The eighteenth century, both in Germany and Italy, saw a boon in such scholarship that made clear distinctions between literary and antiquarian types of evidence. See Arnaldo Momigliano, "Ancient History and the Antiquarian," *Journal of the Warburg and the Courtauld Institutes* 13/3–4 (1950), 285–315, at 295–304.

[51] Mommsen, "Plan," 239.

[52] Quoted in Rebenich, *Theodor Mommsen: Eine Biographie*, 50. For a more detailed account of "authenticity" in Mommsen see Daston, "Authenticity, Autopsia, and Theodor Mommsen's *Corpus Inscriptionum Latinarum*."

uncertain provenance.[53] The editors of the *CIL* even developed a special notation, "∗", that was added to entries for which the inscription remained questionable. If the inscriptions were still available in stone, then Mommsen insisted that an eyewitness make an imprint, through a rubbing or a plaster cast, and provide a full account of the surrounding environment. This autopsy was the standard by which the authenticity of an inscription should be evaluated.[54] Before the nineteenth century, the autopsia tradition had primarily been tied to individual scholars, but Mommsen expanded its practice to a collective enterprise of observation, a shift in scale that required a series of steps and processes that had to be managed.[55] A vast network of scholars, students, and collaborators traveled throughout Europe to collect "visible proof" of the past.[56]

Even as Mommsen was notorious for his own tireless editorial work, he oversaw a network of willing helpers who scoured Europe's libraries and archives for inscriptions. If inscriptions were only available in textual form, in manuscripts or printed collections or quoted in traditional narratives, then these textual forms of evidence, insisted Mommsen, had to be subjected to the same level of modern text-critical scrutiny as any other literary text. Mommsen modeled his "critical" collection of inscriptions on the critical editions of nineteenth-century German philologists such as Lachmann, who had assembled an edition of the medieval *Nibelungen* saga from various manuscripts. A "critical" edition was, as Lachmann put it, an "original" and "authentic" text, one purified of all corruptions and transcription errors.[57] These "critical" projects, whether of the manuscript pages of the *Nibelungen* or of ancient Latin inscriptions, required a confrontation with an unprecedented number of texts and, thus, complex ways of, as Mommsen's colleague Otto Hirschfeld wrote, "processing the massive amounts of material piled up in the libraries."[58]

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53 On these historical challenges see Marco Buonocore, "Epigraphic Research since Its Inception: The Contribution of Manuscripts," in Christer Bruun and Jonathan Edmundsun, eds., *The Oxford Handbook of Epigraphy* (Oxford, 2015), 21–41.

54 Mommsen, "Plan," 230–31. For a fuller account of Mommsen's notion of autopsia see Daston "Authenticity, Autopsia, and Theodor Mommsen's *Corpus Inscriptionum Latinarum*."

55 On the autopsia and other forms of collective empiricism see Daniela Bleichmar, "The Geography of Observation: Distance and Visibility in Eighteenth-Century Botanical Travel," in Lorraine Daston and Elizabeth Lunbeck, eds., *Histories of Scientific Observation* (Chicago, 2011), 373–95.

56 Seeck, "Zur Charakteristik Mommsens," 93.

57 Lachmann, *Ueber die ursprüngliche Gestalt des Gedichts von den Nibelungen* (Berlin, 1816), 1, 163.

58 Otto Hirschfeld, *Gedächtnisrede auf Theodor Mommsen* (Berlin, 1904), 21.

Traditional epigraphic collections couldn't be trusted because the methods and practices of those who produced them weren't reliable. The adjectives that Mommsen used to describe them, "hasty" and "careless," referred less to the collections themselves and more to the manner in which they were created and to the scholars who produced them.[59] The authenticity of the archive was inextricable from ethics. *Wissenschaftlichkeit* referred to the qualities, virtues, and character of the ideal modern scholar.

As a "collection of all inscriptions," such an archive, acknowledged Mommsen, would require an "exhaustive study."[60] The excellent philologist or historian, he wrote, should not ask whether this or that document or particular object was "worth" preserving; instead, he should simply assemble an archive of evidence that would be the "fertile ground" that future scholars would "plough into arable land." Unlike Weber and his later concerns with the fate of modern scholarship and notions of purpose and causality, Mommsen rarely reflected on the ultimate ends of the archive. And this was not simply because, as many scholars have claimed, of an underlying positivism. Mommsen's commitment to the archive was a theoretical commitment, a principled eclecticism. One "fact" was potentially as valuable as another. Echoing Lachmann's insistence that the philologist "can and must edit without interpreting," Mommsen suggested that the organization of source material must be separated from interpretation.[61] And yet, like Lachmann, he acknowledged that compilation presumed selection. Mommsen's insistence that scholars collect only authentic facts required them to distinguish the true from the false. And, as his critics would point out, this too required acts of judgment and even interpretation. By the time of his death in 1903, Mommsen had overseen the publication of fifteen volumes and 130,000 inscriptions in the *CIL*. And the academy continues the project to this day and has published seventeen volumes in seventy different parts, including over 180,000 inscriptions.

THE *LONGUE DURÉE* OF THE BIG HUMANITIES

Well before the Prussian Academy first funded Mommen's *CIL* or even Boeckh's *CIG*, there was a long tradition of big, often collective, scholarly projects including the *historia literaria* projects of the late seventeenth and early eighteenth centuries, and the encyclopedic projects from Zedler's *Universal Lexicon* and Diderot and d'Alembert's *Encyclopedia* to a flurry of late eighteenth-century German encyclopedic projects oriented toward "completeness" (*Vollständigkeit*)

59 Mommsen, "Plan."

60 Mommsen, "Akademische Antrittsrede."

61 Lachmann quoted in Sebastiano Timpanaro, *The Genesis of Lachmann's Method*, trans. Glenn W. Most (Chicago, 2005), 88.

and assembled by multiple, sometimes dozens, of authors and editors.[62] Many of these, especially those of the early eighteenth century, assembled massive collections of bibliographic information—*historia* as data. These Enlightenment-era projects were, in turn, an extension of early modern projects commonly published as *historia* and associated with Bacon's efforts to observe, collect, and organize everything from manuscripts and printed texts to plants and bugs—collections of facts, data, observations. Scholars such as Ann Blair have recounted this history in which practices of reading, excerpting, compiling, and note taking cut across humanistic and scientific fields.[63]

Common to all these projects was a basic tension between the intensive demands of time and resources of a collective, and the constant threat of irrelevance. The common and persistent anxiety was that the projects would be overwhelmed by the sheer amount of material that these organizational projects inevitably produced. And yet there was a key difference between these early modern and early Enlightenment projects and Mommsen's *CIL*. Whereas earlier scholars collected and collated out of fear of an epistemic apocalypse—a loss of texts and traditions like the one that followed the fall of Rome in 410 AD—Mommsen, whose ostensible focus was on the past, collected for the future.

Mommen's *CIL* matched or exceeded many of these projects in the sheer scale of work it required and the quantity of material it assembled. More importantly, however, the *CIL* portended a shift in the institutional, epistemological, and ethical shape of such projects. As an academy-based project, the *CIL* was funded primarily by the state and organized according to an extensive division of labor. In organizing the *CIL*, Mommsen helped introduce the model of the "large-scale production of the sciences" (*Großbetrieb der Wissenschaften*) to intellectual labor that, in the words of Harnack, focused on the "functional organization of work [*Arbeit*]."[64] Every element and every person of the project was coordinated and managed in order to produce printed volumes of highly edited ancient inscriptions. Scholarship on this model and at these scales had one purpose—the production of a product.

By the end of the nineteenth century, Mommsen's *CIL* had received over 400,000 marks, roughly $94,000 in 1894, in state support from the academy. After securing a threefold increase in the academy's budget within his first few years as secretary, Mommsen supported a series of big compilation projects that transformed the international status and shape of German *Wissenschaft*. These

[62] For an extended discussion of some of these projects see Chad Wellmon, *Organizing Enlightenment: Information Overload and the Invention of the Modern Research University* (Baltimore, 2015).

[63] See Blair, *Too Much to Know*.

[64] Harnack, *Geschichte*, 659, 658.

projects shared the epistemological assumptions of the *CIL* and, as Harnack observed, helped usher in an "era of the corporate division of labor," although, by the end of the nineteenth century, these projects would serve as "methodological and organizational paradigms" for the natural and physical sciences.[65]

Initially, these projects were housed in the historical-philological class of the academy and included the *Corpus Nummorum Thracorum*, begun in 1894, an edited collection of ancient coins which the academy supported with 25,000 marks; the *Thesaurus linguae Latinae*, a monumental dictionary of Latin begun in 1894 and currently at volume "N" and scheduled for completion in 2050; the *Wörterbuch der ägyptischen Sprache*, begun in 1894, worked on by over eighty Egyptologists who collected over 1.5 million proof notes; Harnack's edition of the early Greek church fathers and "all [of their] literary monuments," begun in 1892, originally scheduled for forty-five volumes, awarded 75,000 marks and projected to take at least fifteen years.[66]

All of these projects were unprecedented in terms of the number of collaborators, the extent of the task, and the expense. While some realized their initial goals, most of them failed. The *Corpus Nummorum*, for example, collapsed under Mommsen's insistence that the project collect coins not just from northern Greece, as originally planned, but also from Asia Minor.[67] The first three volumes of the *Prosopographia Imperii Romani Saeculorum I.II.III.*, a chronological list of political personalities from the reign of Augustus until the third century AD, was published in 1897 and 1898. It was originally designed as a "who's who"-type compendium for the *CIL*. By 1915 and after an investment of over 100,000 marks and the collation of over 75,000 individual notes, the academy decided that the constant flood of new material had rendered the first volumes outdated, so it started the project anew. The first volume (A–B) appeared in 1933, the second (C) in 1936, and the third (D–F) in 1943; then the project was interrupted by the war and the division of Germany. The project gained new life after German reunification in the 1990s and the final volume (UV–Z) was published in 2015.[68]

Although these projects were criticized for epitomizing academic hyper-specialization, Mommsen argued that they were an antidote to it and the to

[65] Ibid., 659, 982.

[66] Harnack quoted in Kurt von Nowack, ed., *Adolf Harnack als Zeitgenosse: Reden und Schriften aus den Jahren des Kaiserreichs und der Weimarer Republik*, 2 vols. (Berlin, 1996), 1: 48. For a discussion of similarly large-scale projects in archaeology, such as the excavation of Olympia (1875–81) led by Ernst Curtius, see Suzanne J. Marchand, *Down from Olympus: Archaeology and Phillhellenism in Germany, 1750–1970* (Princeton, 1996), 75–115.

[67] See Hans-Markus von Kaenel, "Arbeitsteilung und international Kooperation in der antiken Numismatik," in Ulrike Peter, ed., *Stephanos Numismatikos: Edith Schönert-Geiss zum 65. Geburtstag* (Berlin, 1998), 321–32.

[68] See http://pir.bbaw.de/ueberblick.

"immeasurable threat" that it posed to true knowledge. Mommsen, like most of his German contemporaries, remained committed to the unity of *Wissenschaft* and what he termed its "universalism."[69] But whereas his predecessors, such as Boeckh, remained under the sway of the metaphysics of German idealism and its concepts of holism and organic totality, Mommsen turned to "scientific organization," which he claimed would "liberate" scholars from the "arbitrary and senseless" specialization endemic to modern universities.[70] Institutionally organized science stood in for the desire for a unified, total knowledge.[71] If scholars couldn't find unity in their objects of study, or even in their ideas about them, then they would have to do so by working together.

This new concept of the unity of knowledge was codified in a revision of the academy's statutes in 1881, which stated that the academy was to support "in particular" projects for which the "collaborative activity of numerous scholars is necessary, as well as those which through their extent, duration, or cost require the support of the academy."[72] Mommsen's industrial model of scholarship, then, did not simply reject the ideals of *Wissenschaft* and the unity of knowledge. It salvaged a metaphysical ideal in bureaucratic and institutional form. In this sense, it was a continuation of the neo-humanist project but, as Mommsen saw it, under the conditions of modernity. The only way to protect *Wissenschaft* and its humanist ends was not by overcoming modernity but rather by adapting to its pressures and demands.

Such an institutional unity required a more articulated design and clearer questions for projects, and a methodology that could be easily communicated and shared. Most of the academy-supported projects had a concrete objective––such as the production of a new edition, a dictionary, or, in the broadest sense, an archive—that was articulated from the beginning, as opposed to other types of scholarship in which the purpose only gradually unfolded or revealed itself. The academy placed each project under the guidance and authority of a "commission" that consisted of several academy members. From 1815 to 1918, there were over forty commissions, but only five before 1871. The number of commissions and projects exploded in the 1880s and 1890s when the German state began to increase its support of scholarship more generally. Mommsen helped revolutionize humanities scholarship not primarily by method but also by wedding it to the idea of systematic knowledge (*Wissenschaft*) as a collaborative and distributed project.

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69 Mommsen quoted in Harnack, *Geschichte*, 1004.

70 Mommsen, *Reden und Aufsätze*, 37, 36.

71 Ibid., 44.

72 28 March 1881, paragraph 40, in Harnack, *Geschichte*, 1006.

THE ETHICS OF THE ARCHIVE

For Mommsen, scholarship as *Betrieb*—the distribution of labor, the collaborative nature of the work, the centrality of method—provided an objective check on what he considered the overly subjective tendencies of theoretically driven forms of scholarly inquiry. But it was also, wrote Harnack, a compensation for the "loss" of a universal knowledge.[73] In this sense, Mommsen's "industrial scholarship" didn't just challenge epistemological conceptions of evidence and method and the institutional organization of nineteenth-century scholarship. It also undercut the very ideals in terms of which scholars understood their scholarship and themselves. The assembly of the "archive of the past" helped create a different scholarly persona.

First, the industrial model of scholarship relativized, if not reduced, the importance of the individual scholar. In various speeches as secretary, Mommsen reminded his academy colleagues that the founder of their institution, Gottfried Leibniz, had personally embodied the unity of knowledge to which the academy remained committed. As mathematician, philosopher, historian, and librarian, Leibniz was neither specialist nor dilettante. But he was the last universal scholar. Modern scholarly specialization, however, wrote Mommsen in a lament that echoed his contemporaries, had fragmented knowledge and rendered Leibniz a figure of the past. Modern scholars were confronted by too much information. "Science," wrote Mommsen, "continues inexorably and powerfully forward. But the individual laborer appears ever smaller and inconsequential in comparison to the ascendant giant structure [that is science]."[74] However much he might try to appreciate, much less understand, the ever-expanding extent of research, the individual scholar found himself increasingly alienated and disconnected from science as a whole, incapable of giving an account of how particular facts related to the whole of knowledge. All that remained of a Leibnizian pre-established harmony, of a rationally ordered cosmos, or of a unified *Wissenschaft*, were rational methods, shared practices, and the institutions that sustained them.

Instead of Leibniz, then, the ideal scholar who toiled within this scholarly system of highly managed labor was less the contemplative, solitary figure and more the intellectual worker who either managed time, money, and people or was himself managed. On this model, scholars produced knowledge, but they were not transformed by it, or at least they were not transformed according to the norms and ends of the humanist tradition of *Bildung*, which emphasized personal and moral transformation. Scholarship as *Betrieb* represented a profoundly different ethical ideal.

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73 Ibid., 983.

74 Mommsen, "Ansprache am Leibnizschen Gedächtnistage (1895)," 196.

These big-humanities projects entailed, for example, a different conception of reading. Mommsen and his colleagues never intended scholars to read immersively, line-by-line, through the *CIL*; instead, they included complex indices that facilitated a desultory, nonlinear form of reading. The first volume, from 1862, for example, had three separate indices: an "Index Vocabularum," "Index Grammaticus," and "Index rerum." Each indexed term corresponded to a particular numbered inscription. There were endless paths by which to navigate the *CIL*. And the only path that made no sense was one that mistook the project as a narrative one in which a reader was gradually transformed though a process of identification.

Mommsen's academy-based, project-oriented scholarship was also a move away from the university model, which since the beginning of the nineteenth century in Germany had been organized around the seminar. As an adoption and adaptation of early eighteenth-century seminaries in which teachers worked closely with students, seminars were designed not just to produce knowledge or complete particular projects, but more basically to transform students.[75] A philological seminar formed philologists, a mathematical seminar formed mathematicians, a physics seminar formed physicists. The guiding assumption of Wilhelm von Humboldt's university reforms was that *Wissenschaft* was a form of *Bildung*; specialized scholarship formed a particular type of person. For most of the nineteenth century, scholars and intellectuals had considered *Bildung* a process of learning and study that transformed an individual through interpretive interaction with texts.[76] The Humboldtian bet (or institutional faith) had been that such a transformative process could be brought about and sustained through *Wissenschaft*; that is, through specialized scholarship and its institutions. Central to the ideology of *Bildung* was unity and wholeness, not just of knowledge but also of the person—*Wissenschaft* was *Bildung*. It was an ethical project. And Mommsen's idea of scholarship as *Betrieb* shared these assumptions. But whereas the university seminar formed specialized scholars, the academy formed, as Harnack wrote, "loyal workers."[77]

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75 William Clark, "On the Dialectical Origins of the Research Seminar," *History of Science* 27 (1989), 111–54.

76 Fritz Ringer, *Fields of Knowledge: Academic Culture in Comparative Perspective* (Cambridge, MA, 1992), 2.

77 Adolf Harnack, "Sitzungsbericht," in Harnack, *Geschichte*, I, 234. Both Harnack and Mommsen considered modern academic specialization a problem particular to the university, a function of its "zufällige Schranken" and "Fakultätsorthodoxie" that artificially separated various disciplines. Mommsen in "Antrittsrede in der Akademie der Wissenschaften" (1890), in Nowack, *Harnack als Zeitgenosse*, 2: 981.

Second, scholarship practiced as industrial work required a certain form of asceticism on the part of individual scholars.[78] Mommsen's industrial scholarship made ethical demands of its practitioners. The sheer scale of the academy's projects rendered any comprehensive interpretation of them impossible for most collaborators. Collaborators were required to devote themselves to these projects without the assurance that they would personally witness or fully comprehend the full scope of the work.[79] Some of these projects lasted decades, spanned several countries, and involved dozens of scholars. Unlike his idealist predecessors, who held out an idea of the whole available through reason, Mommsen never claimed such rewards were attainable. In this sense, these projects required a certain abnegation of one's own practical and intellectual desires, a subordination of the self to science as project and method that exceeded and disciplined a subjective will. "The feeling of duty" that a scholar experiences toward science, wrote Mommsen, is "better satisfied through the collection of documentary material than through one's own discussion, which is always prone to error."[80]

In 1845 when they were just sketching their ideas for a Latin inscription project, Mommsen confided to Jahn that such a project would, for the most part, be "just mechanical work." But this was necessary, he assured Jahn, because "we all are mere servants of science; I can't say no, when the call [*Ruf*] is addressed to me."[81] Echoing the language of religious vocation and being called into service, Mommsen's early formulation of his relation to science exemplified what Max Weber would term in the *The Protestant Ethic and the Spirit of Capitalism* (1905) "inner-worldly asceticism": a rational system for maintaining and organizing one's life in this world, as opposed to the "other-worldly asceticism" of monks and hermits who sought to escape the temptations of this world though practices of self-discipline.[82] In his eulogy for Mommsen in 1901, Harnack extolled Mommsen's singular scholarly virtue: industriousness. "You taught us how to work," wrote Harnack, "both literally and in the higher sense. You taught us how to raise life to a higher power through work and, when necessary, how to combat

[78] See W. Hardtwig, "Wissenschaft als Macht oder Askese: Jacob Burkhardt," in Hardtwig, ed., *Geschichtskultur und Wissenschaft* (Munich 1990), 161–88.

[79] Adolf Harnack, "Rede für Mommsen, 10.31.1901," in Stefan Rebenich, ed., *Theodor Mommsen und Adolf Harnack: Wissenschaft und Politik im Berlin des ausgehenden 19. Jahrhunderts* (Berlin, 1997), 831.

[80] Mommsen quoted in Seeck, "Zur Charakteristik Mommsens," 95.

[81] Mommsen to Jahn, 16 May 1845, in Lothar Wicker, ed., *Mommsen–Jahn Briefwechsel 1842–1868* (Frankfurt am Main, 1962), 25. Otto Hirschfeld, Mommsen's student who assumed editorship of the *CIL*, eulogized his teacher for his "heroic" sacrifice of personal desires for the sake of scholarship in *Gedächtnisrede*, 34.

[82] See Max Weber, *The Protestant Ethic and the Spirit of Capitalism* (London, 1992), 49–55.

it through work."[83] For Mommsen, collaborative, large-scale scholarship was a means for transcending the self.[84]

Harnack compared the new industrial scholar to the early nineteenth-century scholar, who hoped to elevate himself by studying grand historical concepts and ideas and, thus, "directly fac[ing] the extraordinary."[85] The scholars of industrial modernity, in contrast, studied "more lowly forms" of scholarly compilation, and they did so out of the conviction that the particular would reveal the "sublime." As they collected and organized ever more material, they realized that a "complete understanding" of historical phenomena could only be achieved on the basis of a new "scholarly disposition," one committed to the totality of the "factual material," "the most scrupulous critique," and "the observation of massive amounts of material [*Massenbeobachtung*]."

Academics and scholars, of course, have long been maligned or extolled for their pedantry or their cerebral ways, but Mommsen's modern scholarly asceticism was different.[86] His ideal scholar was less the priest who communed with the past than the modern worker who toiled in the present for a future that he wouldn't participate in. The scholar was defined by the modern structures of labor within which he worked. In his initial application for the *CIL* project, Mommsen referred to his collaborators not as researchers or scholars but as workers (*Arbeiter*). Scholarship was intellectual work (*geistige Arbeit*), not a priestly vocation as it had been celebrated for much of the nineteenth century. Like other forms of work, scholarship was a social virtue. The scholar had a specific role in society as a whole. What distinguished a uniquely German science from all other nations and scholars was, as Mommsen put it, "our industriousness or the systematic spirit of German industriousness." *Wissenschaft* was a product not of genius but of hard work, a commitment to method, and a loyalty to detail—what Max Weber would refer to in 1917 as the "soil of hard work."[87]

Third, the future-oriented character of Mommsen's projects meant that as research achieved ever greater scales, "the industriousness and talent of the individual worker" would become increasingly insufficient. "The organization of work" would require ever greater "institutional stability" and structures that could sustain projects long after those who had initiated them had died.[88]

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83 Quoted in Rebenich, *Mommsen und Harnack*, 832.

84 Mommsen reffered to his scholarship as the "the greatest divinity." See letter of 7 Jan. 1877 quoted in Alfred Heuss, *Theodor Mommsen und das 19. Jahrhundert* (Kiel, 1956), 113.

85 Adolf Harnack, "Die Königlich Preussische Akademie der Wissenschaften" (1900), in Nowack, *Adolf Harnack als Zeitgenosse*, 2: 983–1009, at 1004.

86 Heuss, *Theodor Mommsen*, 108–11. The following paragraph draws on Heuss.

87 Weber, "Wissenschaft als Beruf."

88 Mommsen, *Reden und Aufsätze*, 160.

Finally, Mommsen's "big science" required and cultivated distinct virtues and skills. It helped craft a persona for whom organizational and managerial skill, as well as ever finer attention to detail, was paramount. Within the projects that Mommsen led or was involved in, the managerial mastermind gradually eclipsed the master interpreter or the intuitive critic; the organizer displaced the genius.

SOCIAL PROBLEMS AND THE ARCHIVE

Similar to the challenges that attended the emergence of the metropolis or big industry, conceded Mommsen, scholarship as industry faced problems of social transformation.[89] Especially in the last three decades of the nineteenth century, the internal scholarly debates about the future of philology and history became inextricable from social, cultural, and political debates roiling a belated German industrialization. "Even science," lamented Mommsen, "has its social problems."

Like big industry, "big science" required constant *Betriebskapital*.[90] Mommsen was a consummate negotiator and, as secretary of the academy, he secured a steady increase in state support for the academy's budget.[91] In the 1890s Mommsen also began to raise private funds and in 1894 he played a crucial role in establishing the Elisabeth Heckmann-Wentzel Foundation with an original bequest of 1,500,000 marks.

Mommsen's industrial model required other, non-monetary forms of state support as well.[92] While working in the Vatican's libraries as a young scholar in 1847, he complained about a Professor Sarti, whom the Pope had granted a "Privativa, a monopoly over the complete inscription treasures of papal museums and libraries."[93] Unfortunately, Sarti was "disinclined to all work and especially the need to finish anything." The only solution, Mommsen suggested, was a "diplomatic mediation" or, put more bluntly, an "intervention by the Prussian government" on Mommsen's behalf.

Over time, "big" scholarship's reliance on capital and state-backed authority invited more state and bureaucratic control over *Wissenschaft*. And the state, especially the Prussian state as it transformed itself into a power center of modern Europe, had its own interests in supporting and more closely directing scholarship. These interests were nowhere more evident than in what

89 Theodor Mommsen, "Antwort auf Harnack," in Mommsen, *Reden und Aufsätze*, 209.

90 Quoted in Rebenich, *Mommsen und Harnack*, 81 n.

91 See, for example, Mommsen's letters to Althoff in Stefan Rebenich and Gisa Franke, eds., *Theoodor Mommsen und Friedrich Althoff: Briefwechsel 1882–1903* (Oldenbourg, 2012).

92 Mommsen also successfully secured private funds for various projects. See Stefan Rebenich, *Mommsen und Harnack*, 55–93.

93 Mommsen, "Plan," 227.

eventually came to be known as the *Althoff System*, a system of bureaucratic control and patronage over German education and scholarship that took shape in the last decades of the nineteenth century.[94] It was led by and organized around the Prussian minister of higher education Friedrich Althoff, who had been a key figure in the ministry of "religious, educational, and medical affairs" since 1872 and eventually became its head. Althoff deeply influenced the expansion of the German higher-education system and science in the Wilhelmine period, including the further professionalization of higher education, the increased influence of the state bureaucracy over all aspects of higher education, the rapid expansion of national and international research institutions and programs, and focused support of particular programs and disciplines at particular universities.[95] Althoff used a combination of personal and institutional relationships to organize, administer, and develop a *Kulturstaat* or *Wissenschaftsstaat*.[96] Education and specialized scholarship afforded a global legitimacy to the German state, which supported not just labs and natural-science research with their possible economic benefits but also the large-scale humanistic projects that Mommsen initiated. There was a "deep internal bond between science and the state," wrote Mommsen, that was in part responsible for "Prussia's greatness and Germany's position in the world."[97] For its critics, the academy's "big science" was an extension of Prussian imperialism and nationalism.[98] The wealth and internal status that Germany had largely failed to acquire through colonial expansion was now being achieved through *Wissenschaft*.

These same critics also pointed out that the state's desire for an expanded science and the academy's willingness to play along had a deleterious effect on the practice of science. Industrialized methods of scholarly organization in which, as Mommsen himself wrote, "one leads and many labor" led to experiences of

94 Max Weber had his unique struggles with Althoff. See Arthur Mitzman, *The Iron Cage: An Historical Interpretation of Max Weber* (New York, 1970), chapter 5, "Althoff, Weber Sr., and Marriage."

95 See Hartwin Spenkuch, "Die Politik des Kultusministeriums gegenüber den Wissenschaften und den Hochschulen," in Wolfgang Neugebauer, ed., *Acta Borussica: Preussen als Kulturstatt* (Berlin, 2010), 165–238.

96 Ibid.

97 Mommsen, *Reden und Aufsätze*, 197; Mommsen to Wilamowitz, letter 393, 25 Feb. 1894 in Rebenich and Franke, *Mommsen und Althoff Briefwechsel*. Mommsen and Althoff's correspondence shows how Althoff and Mommsen maintained and even exploited social and political networks to secure research funds, faculty and academy positions, and recommendations. By the 1890s, however, Mommsen was increasingly intent on coordinating projects among several national and international academies. See Ulrich von Wilamowitz, *Geschichte der Philologie* (Stuttgart, 1998), 71.

98 Lionel Gossman, *Orpheus Philologicus: Bachofen versus Mommsen on the Study of Antiquity* (Philadelphia, 1983), 21–42.

alienation and detachment among the academic workers.[99] Confronted with a surfeit of material and the division of labor designed to manage it, scholars, as the physiologist and academy member Emil du Bois-Reymond said in 1882, "don't know what will become of this piece on which they are filing away."[100] They remain ignorant of the "destiny of the whole" (*Bestimmung des Ganzen*). The scale of these projects required an unprecedented number and different types of people, a range of willing helpers from highly trained philologists and historians, who led teams and oversaw entire projects, to a scholarly army of office workers and locals who, in the case of the *CIL*, had little training in epigraphy.

Like Linnaeus, who oversaw a global network of naturalists sending specimens to Uppsala, Mommsen managed a network of collaborators, or *Mitarbeiter* as he called them, who devoted themselves to specific and distinct tasks: collecting, excerpting, glossing, bibliographic work, editing and a range of other tasks. Each position in the industrial organization of scholarship had a different status and the divided structure ensured that scholars were separated from one another and, except perhaps for a very few, that they had little sense of the whole project. And from Berlin Mommsen and a few select colleagues oversaw the compilation of material as commission members.

In the 1890s, Mommsen and Harnack sought to further institutionalize these labor structures by establishing a more permanent position for some of their collaborators—*wissenschaftliche Beamten*, or scholarly civil servants. These permanent positions elevated the status of the highly educated scholars who were already leading teams and projects.[101] *Wissenschaftliche Beamten* stood between the academy's commissions and the more general army of collaborators and assistants. They oversaw daily correspondence, led the actual work of collecting and collating material, coordinated and edited manuscripts in progress, and reported to the commission on the status of the projects. These new forms of scholarly labor were needed, noted Mommsen and Harnack, because the structures of the research university couldn't support the scale of the projects. The university was an institution of professors, who were required to teach and to conduct research, and students, who left after their studies were complete. The university could not guarantee that the "tediously acquired work" of Mommsen's projects wouldn't be lost.[102]

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99 Mommsen, *Reden und Aufsätze*, 69.

100 "Wissenschaftliche Zustände der Gegenwart," in *Mathematische und Naturwissenschaftliche Mittheilungen aus den Sitzungsberichte der Königlich Preussischen Akademie der Wissenschaften zu Berlin* (Berlin, 1882), 177–88, at 183.

101 On the development of these see Hoffmann, *Weibliche Arbeitswelten*, 100.

102 Nowack, *Harnack als Zeitgenosse*, 58. For a detailed picture of this mundane but *mühsame* work, see the letters between Mommsen and Herman Dessau, which consisted primarily

Finally, Mommsen's "big science" made method central to scholarly practice in the humanistic and cultural sciences. Given the monumental and collective character of the work, research methods, practices, and technologies had to be institutionalized in order to guarantee their stability beyond the "life span of the individual person in order to safeguard the progress of the work."[103] And there were two primary ways to accomplish this: the endless accumulation of material and, just as importantly, the training of *Arbeitsgenossen*. This reliance on method was representative of a broader and much longer shift in the very concept of science in which the unity of knowledge came to be embodied not in the scholarly subject of science but in the processes of knowledge.[104]

The individual scholar could only see the next step, the next task; thus his faith in the process, in the method, was crucial. Without a commitment to method, there was little motivation or encouragement for him to carry out his daily fragmented tasks. "Whoever has participated in academic activities," wrote Mommsen, "can comfort himself in the hope that when he lays down his work, another will step in for him, perhaps someone lesser, perhaps someone better. But he will always have the privilege, more than others, to have an effect beyond his own life with his work."[105] Like the institution of the academy, method stood in for the unity of knowledge, and the commitment to method stood in for the desire to know.

By the end of the century, Mommen's big projects, as other scholars have noted, had become a model not just for philological and historical scholarship, but also for the physical and natural sciences as well.[106] Inspired by Mommsen's organizational practices, the German astronomer and academy member Arthur Auwers, for example, proposed a massive project to systematically collect, organize, and compare all *Fixsternbeobachtungen* that had been recorded across Europe between 1750 and 1900. When Auwer first proposed the *Thesaurus positionum stellarum affixarum* to the academy in 1900, he began not with a discussion of modern astronomy but with an extended recollection of Leibniz's attempt to collect, catalogue, and organize the surfeit of printed material that had

of discussions about money, budgets, and detailed reports of newly found (or confirmed) inscriptions. See, for example, Manfred G. Schmidt, ed., *Herman Dessau (1856–1931): Zum 150. Geburtstag des Berliner Althistorikers und Epigraphikers* (Berlin 2009).

103 Mommsen, *Reden und Aufsätze*, 160.

104 Hans Blumenberg, "Philosophischer Ursprung und philosophische Kritik des Begriffs der wissenschaftliche Methode," *Studium Generale* 5/5 (1952), 133–42.

105 Mommsen quoted in Heuss, *Theodor Mommsen*, 118–19.

106 Similarly, the Deutsche Zoologische Gesellschaft began a project to organize all forms of animals that became the *Nomenclatur animalium generum et subgenerum* in 1912. On the exemplary quality of these humanistic projects within the academy see Conrad Grau, *Die Preußische Akademie der Wissenschaften zu Berlin* (Berlin, 1993), 195.

plagued early eighteenth-century scholars. Late nineteenth-century astronomers, contended Auwer, faced a similar problem: massive amounts of data and no system to make sense of it. If twentieth-century astronomers were not to inherit a "chaotic heap" of observations, then he and his had "to collate into a uniform, universal catalogue all material containing observed positions for fixed stars of the entirety of meridian observations for the period of 1750–1900."[107] Such a project would compile all observations from written records, translate them into a "universally understandable language," and, finally, determine the location of a star for a given period. In his description of the project, Auwer repeatedly alluded to philological techniques and concepts for collecting and organizing a surfeit of material. By supporting the effort to create a common catalogue of star positions, the academy would finally, as Auwer put it, provide the "care" for the sciences of the natural and physical class that it had long afforded those of the philological-historical class. The natural and physical sciences would finally be able to enter the "era" of the *Großbetrieb der Wissenschaften*.[108] What bound these projects together, from Mommsen's *CIL* to Auwer's star catalogue, was not a metaphysical insight but the often mundane, sometimes invisible, practices of collection, compilation, and observation as institutionalized in the academy.[109]

NIETZSCHE'S CRITIQUE OF THE BIG HUMANITIES

But what was the purpose of all this compiling and managing? Even before many of the academy's biggest projects had begun, Mommsen and what some critics dismissed as his "Prussian scholarship" faced concerns that his new scholarly practices would undermine humanistic inquiry. First, critics questioned the epistemic value of merely collecting "facts" for future scholarship. Similarly, critics doubted whether the archival work of collection and compilation could be so neatly separated from theoretical and interpretive questions. Second, critics suggested that scholarship as *Großbetrieb* entangled scholarly purposes with non-scholarly interests in unprecedented and dangerous ways. Finally, critics worried that "big scholarship" separated specialized scholarship (*Wissenschaft*) from personal transformation (*Bildung*), purportedly the true purpose of humanistic scholarship. Young scholars began their studies with sincere questions about their lives and a sense, however vague, that specialized scholarship could help them address questions of meaning, but these concerns were gradually deflected and ultimately extirpated by the "factory-like conditions" of modern scholarship.

[107] *Sitzungsberichte der Preußischen Akademie der Wissenschaften* 1 (1900), 667.

[108] Ibid., 669. Auwer's *Fixstern* catalogue published forty-eight volumes between 1922 and 1965 with over a million entries form over 450 different catalogues.

[109] Daston, "Science, Humanities, Wissen, Wissenschaft."

These debates about the purposes of scholarship anticipated Weber's elegiac observation in 1917 that specialized scholarship, *Wissenschaft*, had nothing to teach about the "meaning of the world" (*Sinn der Welt*). Mommsen had helped sunder science and scholarship from life.

These criticisms and anxieties were usually leveled as a single, often sweeping, attack on contemporary *Wissenschaft* and its betrayal of a lost ideal. When Wilhelm von Humboldt and his fellow idealists, such as Schelling, Fichte, and Schleiermacher, laid out the norms and ideals of the modern research university at the beginning of the century, they touted *Wissenschaft* as the sustaining ethical ground for a new institution of knowledge. The modern university, they suggested, would be grounded not on its relation to the state or the church but on its relation to rational inquiry or *Wissenschaft* as a practice with its own virtues, goods, and institutions. *Wissenschaft* as institutionalized in the research university and, most particularly, the seminar, was a practice of personal perfection and even self-transcendence. For most of the nineteenth century, *Wissenschaft* stood in for the unity of knowledge and was invoked in almost reverential terms. Unlike French and English scholars, German scholars, having been schooled in the classical *Gymanasium* and its neo-humanist ideals, generally remained, throughout at least the last third of the nineteenth century, committed to the notion that there was still a unified *Wissenschaft*, even as they debated the methods, practices, and ideals that constituted its various, more specialized, forms.[110]

Over the course of the nineteenth century, however, the university's critics and defenders increasingly doubted whether *Wissenschaft* in its modern, increasingly bureaucratic, and highly specialized form could sustain a distinct and meaningful form of life.[111] The gradual loss of confidence in the unity of *Wissenschaft* manifested itself in various fields and groups of scholars, but it was perhaps nowhere more evident than in philology and related fields. Decades of textual and higher criticism—from E. G. Eichhorn's *Einleitung ins Alte Testament* (1780–83) and F. A. Wolf's *Prolegomena ad Homerum* (1795) to Karl Lachmann's *Betrachtungen über Homers Illiad* (1837–41) and Barthold Niebuhr's *Römische Geschichte* (3 volumes, 1811–32)—had eroded scholars' and students' faith in the potential of ancient texts and cultures to change lives. Amidst the minutiae and

[110] See Lorraine Daston, "Die Akademien und die Einheit der Wissenschaft: Die Disziplinierung der Disziplinen" in Jürgen Kocka, ed., *Die Königlich Preußische Akademie der Wissenschaften zu Berlin im Kaiserreich* (Berlin, 1999), 61–84.

[111] For exemplary worries see August Boeckh, "Über das Verhältnis der Wissenschaft zum Leben," in *Gesammelte Kleine Schriften*, vol. 2 (Leipzig, 1859), 14.

polemics of nineteenth-century philology, *Wissenschaft* and *Bildung* seemed to "contradict" one another.[112]

For its late nineteenth-century critics, Mommsen's "big scholarship," despite its continuities with neo-humanist forms of scholarship, was the nadir of the decades-long decline of *Wissenschaft*. To describe, as Mommsen did, scholarship and the scholarly life in terms of "work" (*Arbeit*) and *Betrieb* was to reduce the scholar and his vocation to the mundane terms of a rationalized modernity bereft of any moral distinctions. Instead of a calling, a *Bestimmung*, as Fichte had described it, the scholarly life had been degraded to just another job.[113]

The division of labor central to Mommsen's "big scholarship" was so troubling because it was thought to cut individual scholars off from the object of their study, which generations of philologists and historians had assumed to be antiquity as a whole, not just particular objects. Antiquity had long been the primary resource for nineteenth-century Prussian cultural humanism and scholarly self-understanding. The primary task of historical study was, as Wilhelm Dilthey argued in his first contribution to the incipient debate in 1883, understanding, not merely explanation. And this required an empathy and imagination that a divided intellectual labor made nearly impossible.[114]

One of the first critics of these broader shifts in German scholarship was Friedrich Nietzsche. Trained in Bonn and Leipzig under esteemed philologist and one of Mommsen's *CIL* collaborators Friedrich Ritschl, Nietzsche was appointed professor of classical antiquity at the University of Basle in 1869 at the age of twenty-four. As Mommsen was busy assembling the "archive of the past," Nietzsche began to diagnose modern culture, not to mention himself, as suffering from a bad case of "academic knowledge," or *Wissenschaft*. Although some of the giants in the field, such as F. A. Wolf, Voss, and Boeckh, had decades earlier worried about philology's predilection for hyper-specialization, Nietzsche was the first to situate philology's ills within the broader decline of *Wissenschaft* and, in particular, to tie its misfortune to the very person of the modern philologist. "In antiquity," wrote Nietzsche in a lecture course on classical philology that he gave in the winter of 1873–4, *philologia* had referred not to a particular science (*Wissenschaft*)

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[112] Anthony Grafton, "Polyhistor into Philolog: Notes on the Transformation of German Classical Scholarship," *History of Universities* 3 (1983), 159–92.

[113] See Fichte, *Einige Vorlesungen Über die Bestimmung des Gelehrten*, Part I, vol. 3, in *J. G. Fichte Gesamtausgabe der Bayerischen Akademie der Wissenschaften*, ed. Reinhard Lauth, Hans Jacob, and Hans Gliwitsky (Stuttgart and Bad Canstatt, 1964), I, 3:55.

[114] Wilhelm Dilthey, *Einleitung in die Geisteswissenschaften*, in *Wilhelm Diltheys Gesammelte Schriften*, vol. 1 (Leipzig, 1922). On the broader outlines of this debate see Ringer, *Weber's Methodology*, 9.

but rather to a "general desire for knowledge of all sorts, an attribute."[115] The endless debates about method among nineteenth-century philologists, suggested Nietzsche, obscured a basic, if forgotten, truth: philology was a way of life and the philologist was an ethical persona.[116]

In the winter of 1872, three years after his arrival in Basle, Nietzsche delivered a blistering indictment of modern German universities and *Wissenschaft* in a series of public lectures entitled *On the Future of Our Educational Institutions*. The primary object of his ire was his fellow philologists, whom he accused of neglecting their obligation to help their contemporaries engage ancient cultures as ethical resources. Instead, they collected, dissected, and ultimately desiccated antiquity. With their rigorous critical methods, they reduced the whole to its parts. "Philologists," wrote Nietzsche in his lectures, "perish and are reduced to dust because of the Greeks—that is a loss we can live with—but for Antiquity itself to be shattered because of philologists!"[117] The personal value of studying antiquity—the potential for ethical transformation—had been subordinated to an endless accumulation of information bereft of meaning.

Despite his pointed criticism's of philology's "micrology," however, Nietzsche had produced his own specialized scholarship. He even taught a lecture course in Basle on Latin epigraphy in the winter of 1871–2.[118] Inscriptions, he wrote in those lectures, "reveal" the language, the private and public lives, and the culture of antiquity "much more definitively than all manuscripts."[119] Nietzsche was a self-consciously *modern* and, thus, critical philologist with specialized skills and interests and a commitment to philological rigor.[120] He praised his former teacher Ritschl's *Priscae Latinitatis monumenta epigraphica* (1862–4) as the "greatest example" of epigraphy and ridiculed Boeckh's *CIG* for lacking the

[115] Friedrich Nietzsche, "Encyclopädie der klassichen Philologie," in *Nietzsche Kritische Gesamtausgabe: Vorlesungsaufzeichungen (SS 1870–SS 1871)*, ed. Fritz Bornmann and Mario Carpitella (Berlin 1993), 341–437, at 343.

[116] For a broader discussion of this gap see Marchand, *Down from Olympus*; Anthony J. La Vopa, "Specialists against Specialization: Hellenism as Professional Ideology in German Classical Studies," in Geoffrey Cocks and Konrad H. Jarausch, eds., *German Professions, 1800–1950* (New York: Oxford University Press, 1990), 65–74.

[117] Nietzsche, "Encyclopädie," 343.

[118] Nietzsche, *Vorlesungsaufzeichnungen (WS 1871/72–WS 1874/75)*, ed. Fritz Bornmann and Mario Carpitella, in *Nietzsche Werke Kritische Gesamtausgabe*, vol. 2, pt 4, ed. Giorgio Colli and Mazzino Montinari (Berlin: Walter de Gruyter, 1995), 89–206.

[119] Ibid., 192.

[120] On Nietzsche as philologist see James I. Porter, *Nietzsche and the Philology of the Future* (Stanford, 1992); Christian Emden, "Learning to Read Again: Nietzsche in Leipzig," *Oxford German Studies* 35/2 (2006), 177–90; Christian Benne, *Nietzsche und die historisch-kritische Philologie* (Berlin, 2005).

"necessary rigor."[121] Ritschl, whom Nietzsche referred to as a one of his "heroes of *Wissenschaft*," combined detailed textual study with a broader cultural history.[122]

Like Mommsen, Nietzsche was concerned about the authenticity and legitimacy of the inherited tradition. Printed texts, he warned his Basle students, gave the illusion that ancient texts were modern ones. Their very form obscured fundamental differences and the distance that separated antiquity from the modern age. "We must," therefore, he concluded, "learn to read again, what we unlearned under the superior power of print."[123] Despite the common image of Nietzsche as a self-hating philologist, he was committed to the basic project of German textual criticism: problems of textual transmission and attempts to trace changes over time.[124] But the "explosive increase" in the amount of available material in the last third of the nineteenth century, observed Nietzsche, had challenged philology's confidence that it could sift through all these "facts" and make them meaningful.[125] Modern critical methods and, just as importantly, the modern critical disposition as embodied in the philologist and his "rigor" were necessary to do just that.

It was the very power of this critical textual tradition to compare and make historical distinctions, however, that, unchecked, also threatened to destroy philology. When limited to critique, philology and history more broadly risked devolving into what Nietzsche termed in *Vom Nutzen und Nachtheil der Historie für das Leben* (1874) an antiquarian mode of scholarship in which the "small, circumscribed, decaying, and obsolete acquire their own dignity and violability." Antiquarianism faced the same problem that all nineteenth-century German historicisms faced: it separated the past from the present so fully as to make the real task of history—ethical transformation in the present–impossible.

In the spring of 1875, a few years after his Basle lectures on education and three years after Wilamowitz had savaged *The Birth of Tragedy* (1872), Nietzsche's critique of philology culminated in "We Philologists," a collection of notes for a volume never published. Although he continued to consider himself a philologist (it's *we* philologists, after all), he lambasted the "incapacity" of his colleagues to engage in meaningful scholarship. With their "false standards" and truncated imaginations, they had destroyed genuine *Wissenschaft* and, thus, a

[121] Nietzsche, *Vorlesungsaufzeichnungen (WS 1871/72–WS 1874/75)*, 192.

[122] Friedrich Nietzsche, *Briefwechsel: Kritische Gesamtausgabe*, Part I, vol. 2, ed. Giorgio Colli and Mazzino Montinari (Berlin, 1975), 18.

[123] Nietzsche, "Encyclopädie der klassichen Philologie," 373.

[124] See, for example, Nietzsche's inaugural lecture at Basle, "Homer und die klassische Philologie" (1869), in which he contributes to the large body of scholarship on Homer. See Emden, "Nietzsche in Leipzig," 181–2.

[125] Nietzsche, "Encyclopädie der klassischen Philologie," 344.

scholarly culture and sustainable practice to be admired.[126] Some "99 out of 100 philologists," he wrote, "shouldn't be philologists."[127]

Most young philology scholars, complained Nietzsche, approached their scholarship as though it were simply a modern job.[128] They labored blindly under the delusion that industriousness, attention to detail, and relentless asceticism—all those virtues extolled by Mommsen—would inevitably lead to the reassembly of antiquity, whole and anew.

This new modern type, "the academic man" (*der wissenschaftliche Mensch*), wrote Nietzsche, "was a real paradox."[129] As the catastrophe of modernity unfolded around him, he just picked flowers and counted "petals." He collated, amended, and edited manuscripts line by line, but failed to attend to the urgent need for meaning and orientation. His obliviousness was born not of stupidity but rather of an unhealthy relation to knowledge. The modern scholar toiled as if the university were a factory in which "every squandered minute would be punished."[130] But he had little understanding of why or to what end:

> There is one way of philologically occupying oneself, and it is very common: one throws himself senselessly or is thrown into some area. And from there he turns right and left and finds some good and new things. But at an hour when no one is watching him, he asks himself: what in the hell does this have to do with me? But by this point he's grown old and used to it all. And so, as in marriage, it continues.[131]

In the face of modernity's stresses and confusions, the philologist merely tended the archive.

Although he never mentions him by name, Mommsen and the Prussian philology for which he stood and the practices of industrial-style scholarship were ever present in his Basle lectures, letters, and other lectures and notes.[132] Since Aristotle's time, wrote Nietzsche, philologists had always collected and organized

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126 Friedrich Nietszche, *Unzeitgemäße Betrachtungen: Vom Nutzen und Nachteil der Historie für das Leben*, in *Friedrich Nietzsche: Sämtliche Werke: Kritische Studienausgabe*, 15 vols., ed. Giorgio Colli and Mazzino Montinari (Munich, 1999), 1: 157–510, at 265. Friedrich Nietzsche, *Friedrich Nietzsche Nachlaß 1875–1879*, in ibid., 8: 9–127, at 21.

127 Ibid., 20.

128 The following paragraphs directly draw on Chad Wellmon and Paul Reitter, "How a Philologist Became a Physician of Modernity: Nietzsche's Lectures on German Education," *Representations* 131/4 (2015), 68–104.

129 Nietzsche, *Nachlaß 1869–1874*, in *Friedrich Nietzsche Kritische Studienausgabe*, 7: 613.

130 Ibid., 614.

131 Nietzsche, "Notizen zu Wir Philologen," in *Friedrich Nietzsche Kritische Studienausgabe*, 8: 53.

132 In his letters, Nietzsche referred simply to "Berlin philology." See Benne, *Nietzsche und die historisch-kritische Philologie*, 292–3.

"a great mass of empirical material."[133] Unlike the philosopher who simply "created out of himself," the philologist created "out of books," manuscripts, out of material stuff.[134] But, as Nietzsche told his young students in 1872, actually becoming a true philologist "depended less on the masses [of material] than on the how"—how the scholar relates to and interprets the material, what he does with the material. The collection and compilation of data and material had to be joined with practices of interpretation.[135] Otherwise, as he warned in a section entitled "How One Becomes a Philologist," a scholar simply uses antiquity to satisfy his "lust for research" or "knowledge" and becomes indistinguishable from a "factory worker," laboring daily on his own little "widget."[136] The university and its related institutions, the *Gymnasium* and the academy, taught students and scholars to sacrifice themselves to *Wissenschaft*. But why? What, asked Nietzsche, is "the value of *Wissenschaft* for us" today?[137]

In the 1880s and 1890s, German scholars and intellectuals increasingly began to fear that their institutions and culture had been deformed by a bureaucratic and industrial modernity.[138] Nietzsche was not the first to argue this but he was one of the first to suggest that the German faith in *Wissenschaft* had become a corrupted commitment, more an ideology than a real ethical resource. Nietzsche's critique of contemporary philology and history anticipated the worries of historian Johann Gustav Droysen, who lamented that young scholars were being trained simply as "specialists" in "factory work."[139]

Nietzsche's criticisms also echoed the more local concerns of his Basle colleagues Jacob Burckhardt and Johann Bachofen. Burckhardt mockingly wondered why historians and philologists such as Mommsen had yet to realize that a "compilation of various true and well-researched facts is still not truth [and] makes no real historical impression." Similarly, Bachofen argued that Mommsen's form of philology violated the sacred unity of antiquity and forsook

133 Nietzsche, "Encylopädie der klassischen Philologie," 342.
134 Ibid.
135 Ibid., 392.
136 Ibid., 366–7.
137 Nietzsche, *Unzeitgemässe Betrachtungen*, 202–3.
138 Ringer, *Fields of Knowledge*, 200.
139 *Johann Gustav Droysen, Briefwechsel, 1851–1884*, vol. 2 (Stuttgart, 1926), 941 ff. Droysen was writing in this case about the massive *Monumenta Germaniae Historia*, a monumental primary-source collection for German history. Mommsen become a member of its commission in 1874 and led a complete reorganization of the project, including its move to Berlin. See Rebenich, *Mommsen und Harnack*, 63–5.

the philologist's priestly role as mediator between the past and present, sacred and secular.[140]

These nineteenth-century debates about philology were not simply about method, then. They were about the ends of philological scholarship and the very person of the philologist. On the one side, scholars such as Nietzsche, his Basle colleagues, and a growing group of German scholars related to ancient texts as purveyors and transmitters of exemplary forms of life. The task of the philologist or historian was to read critically in order that they might be able to read morally. The scholar of antiquity was to cultivate these textual traditions and, for Nietzsche at least, hold them out as ethical resources for a modernity that lacked its own. Despite his stylized iconoclasm, Nietzsche was in some ways a traditional German Grecophile for whom antiquity of the Greek sort was a moral utopia—he was a humanist in the tradition of F. A. Wolf and Wilhelm von Humboldt.[141] He was concerned about the meaning of texts in the present—how could ancient texts and traditions help address the question of how "I might best live" now. Nietzsche's classicism was driven by a resolute presentism.

On the other side, for scholars such as Mommsen and Harnack, the task of philologists and historians in the present was to assemble and maintain the archive for an unknown future, in which scholars might be able to reengage in the humanist calling of interpretation and meaning making. But until the fact-filled archive was secure such a future had to be deferred.[142] The deferral of the humanist calling was a loss for scholars in the present, but it was a necessary one and one that demanded sacrifice.

DISENCHANTED KNOWLEDGE

Both Nietzsche and Mommsen struggled to understand and adapt to what they considered to be a new era in knowledge, one defined by an explosion of cultural objects; intellectual specialization; the division of labor; and the estrangement of the scholar from his traditions, his scholarship, and meaning. And they did so in the name of *Wissenschaft*, whose traditions, imperatives, and future they understood differently. Whereas Nietzsche embraced the imperative to interpret,

[140] Burckhardt quoted in W. Hardtwig, "Wissenschaft als Macht oder Askese: Jacob Burkhardt," in Hardtwig, *Geschichtskultur und Wissenschaft* (Munich, 1990), 161–88. Bachofen quoted in Gossman, *Orpheus Philologicus*, 23.

[141] Nietzsche, however, abhorred the liberal commitments of a more traditional Humboldtian notion of *Bildung*.

[142] On the moral character of nineteenth-century German philology see Klaus Weimar, *Geschichte der deutschen Literaturwissenschaft bis zum Ende des 19. Jahrhunderts* (Munich, 1989), 226–8.

Mommsen never wavered from a commitment to compile. Nietzsche's ideal scholar was the heroic hermeneut revealing a present haunted by the errors of the past. Mommsen's ideal scholar was the humble hand restoring a past fragmented by those same errors. Despite their different views of who the scholar should be—his aims, disposition, self-understanding—both embraced the basic philological principle that thought required material and a proper skepticism toward the traditions that transmit it over time.[143] Both remained committed to the ideal of the unity of knowledge or *Wissenschaft*. For Nietzsche, such unity was only possible through ethical self-transformation, whereas for Mommsen it was only possible, if at all, through an endlessly deferred collaborative project.

Late nineteenth-century German scholars and intellectuals developed a series of tropes to name the increasingly widespread anxieties about the fate of the scholar and the future of knowledge in the modern age. Elegiac moderns from Nietzsche (*Leben* and *Wissenschaft*) and Weber (*Beruf* and *Betrieb*) to Helmut Plesner (*Universitäten* and *Großforschungszentren*) and Georg Simmel (subjective and objective) juxtaposed the authentic and meaningful with the artificial and mechanical.[144] Any future knowledge would have to overcome what they considered to be the ineluctable decline of modernity.

Mommsen provided perhaps the most salient distinction, at once elegiac and candid. He distinguished between the academy's "loyal workers" and the university's "genius scholars."[145] With their tireless organizing, the former rarely engaged in real "scholarly creation." They simply prepared material for the possibility of a future genius. Mommsen's "loyal worker" and genius represented two different scholarly subjects or personae of knowledge based on their relation to their scholarly objects—that is, what they actually created. Whereas the intellectual object, be it a book or a mental experience, of the "genius scholar" belonged to the individual who created it, that of the academic scholar belonged to a scholarly community and, ultimately, the timeless, dislocated abstraction that the moderns called science. The academic scholar distributes, cultivates, and cares for the "seeds" of knowledge, hoping that they will "bear fruit in a foreign garden."

The debates around the future of philology prefigured and even echoed many of the better-known concerns of the *Methodenstreit* of the 1890s and early

143 Mommsen in a letter to Althoff from 6 August 1893 in Stefan Rebenich, ed., *Theodor Mommsen und Friedrich Althoff: Briefwechsel 1882–1903* (Oldenbourg, 2012), 693.

144 Spoerhase, "*Big Humanities*," 16; and Kahlert, "Große Projekte"; see Weber, "Wissenschaft als Beruf"; Helmut Plesner, "Zur Soziologie der modernen Forschung und ihrer Organisation in der detuschen Universität," in Max Scheler, ed., *Versuche zu einer Soziologie der Wissenschaft* (Munich, 1924), 407–25.

145 Mommsen in Harnack, *Geschichte*, 1003.

nineteenth century, especially Max Weber's attempts to come to terms with the crisis of values and historical knowledge.[146] Like Mommsen and Nietzsche, scholars such as Weber struggled to understand how the cultural and social sciences could discern significance when faced, as Fritz Ringer put it, with an "infinite manifold of objects."[147] The self-proclaimed critics of positivism who followed in Nietzsche's skeptical wake raised questions not only about the value of compiling so many facts but more particularly about whether more material (or data) necessarily implied a new epistemology of science (*Wissenschaft*). Could the collection of data be clearly separated from the making of knowledge? These underlying concerns raised further questions about the status of values, subjectivity, objectivity, method, and meaning in *Wissenschaft*, questions that eventually led to attempts to distinguish the cultural and social sciences more sharply from the natural and physical sciences.

Looking back in 1905 on the emergence of the *Großbetrieb der Wissenschaften*, Harnack acknowledged its social and ethical effects: the division of intellectual and scholarly labor, the mechanization of work, the overemphasis on collecting and processing material as opposed to spiritually penetrating them, and the "stultification of scholars." Mommsen's vision of scholarship as *Großbetrieb* undermined the long and, among nineteenth-century German scholars of all fields, dearly held assumption that *Wissenschaft* rightly practiced yielded *Bildung*.

In 1917, Weber delivered his lecture "Wissenschaft als Beruf,"[148] which can be read as a commentary of sorts on Nietzsche's critique of Mommsen and big humanities as the consummate form of rationalized, disenchanted knowledge. For critics such as Nietzsche, *Wissenschaft* as *Betrieb* represented the final and complete estrangement of *Bildung* from *Wissenschaft*—the threat of the material (objective) over the personal (subjective). Weber tied the estrangement of scholarship from personal meaning to the "Americanization" of the university. But Mommsen, Althoff, and Harnack had already turned the academy, if not the university, into a modern *Betrieb* in which workers were separated from their means of production and a few star scholars functioned like managers in a knowledge factory.

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146 See especially Max Weber, "Die Objektivität sozialwissenschaftlicher und sozialpolitischer Erkenntnis"; Weber, "Kritische Studien auf dem Gebiet der kulturwissenschaftlichen Logik" (1906); Weber, "Der Sinn der Wertfreiheit der soziologischen und ökonomischen Wissenschaften" (1914); Weber, "Wissenschaft als Beruf" (1917), all in Max Weber, *Schriften zur Wissenschaftslehre* (Stuttgart, 1991).

147 Fritz Ringer, *Weber's Methodology* (Cambridge, MA, 1997), 46.

148 Fritz Ringer, *Decline of the German Mandarins: The German Academic Community* (Hannover, 1990), 253–8.

HUMANITIES IN A DIGITAL AGE AND THE FUTURE OF KNOWLEDGE

The story of Nietzsche versus Mommsen was the story of big science against small science, collaboration against solitary study, compilation against interpretation, archival assembly against theoretical reflection, efficient training against moral transformation. These were epistemological and ethical, even moral, distinctions. By accusing Mommsen of waging *Dampfmaschinenwissenschaft* or mechanized science, Nietzsche and Bachofen claimed that he lacked the proper reverence for antiquity. Modern philology was both an agent and unwitting effect of the disenchantment of antiquity. And because philology was the consummate discipline of nineteenth-century Germany, its fate stood in for the fate of the sciences and humanities more broadly.

For some contemporary critics, digital humanities may well be the apotheosis of the long history of the big humanities. The humanities in our digital age are currently haunted by the specter of positivism. Anxieties about a positivistic shift and fears about "distant reading" are particularly pronounced among scholars of literature. As I have suggested, however, accusations of positivism have a history that is almost inextricable from the history of practices of compilation. In the case of philology, Mommsen never claimed that interpretation was not necessary—that facts could speak for themselves. He only suggested that the assembly of the archive could proceed, in part, distinct from its interpretation.

For Mommsen, the virtue of documentary facts was their purported "neutrality with respect to theory" and their lack of human intention.[149] When he appealed to the thing-like quality of ancient Roman inscriptions, the gravity, permanence, and positionality of their stony presence, he invoked the stubbornness of the modern fact and its presumed ability to keep subjective interpretation, speculation, and intention in check. But these facts were not simply to be used for the purposes of the present. They were also there to draw scholars beyond themselves, to enable communion with foreign minds and cultures to allow for what Nietzsche claimed was the central task of philology: comparison.[150]

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149 Lorraine Daston, "Marvelous Facts and Miraculous Evidence in Early Modern Europe," *Critical Inquiry* 18 (1991), 93–124. See also Daston, "Reviews on Artifact and Experiment," *Isis* 79/3 (1988), 452–67.

150 Nietzsche, "Encylopädie der klassischen Philologie."

Models, practices, and theories help make data visible and accessible.[151] The suggestion by some that contemporary data practices are unprecedented obscures this reality by overlooking the history of such models, practices, and theories. Data—be it 180,000 inscriptions or hundreds of digitized novels—cannot speak for itself. It is always collected, organized, edited, made accessible, and given meaning, whether in nineteenth-century printed volumes or in twenty-first-century graphs. And yet, as Mommsen argued, compilation and interpretation are not identical—they can be distinct activities.

Late nineteenth-century debates about what constituted humanistic inquiry or philology, in particular, were never resolved in favor of one particular practice or method. The humanistic sciences flourished in myriad forms and did so in constant engagement with ever new arrangements of methods, practices, and technologies. This is crucial to remember. Whatever else the digital or computational humanities are, they, like the broader humanities, are diverse and not reducible to text mining or "distant" reading. The digital humanities include a dizzying array of work, methods, and purposes.[152] Franco Moretti and his particular version of "distant reading" is but one example. Methodological eclecticism, however, is not an excuse to ignore the real incapacities and limitations of current practices in the face of new kinds of evidence and material.

Although humanistic science or the humanities were not bound to one method or notion of evidence, they did share a common disposition: a commitment to cultivating and engaging what August Boeckh referred to as "knowledge of what is and has been known."[153] Philology stood in for a common scholarly project; it was the basis of the cultural sciences. Neither Mommsen nor Nietzsche doubted the promise of philology. They only debated the best ways of going about it and the ends to which they should be put. Mommsen's "big scholarship," as well as Nietzsche's reinvention of philology as genealogy, were devoted to a tireless and rigorous cultivation and consideration of "tradition"—that is, the transmission and compilation of culture and texts over time.[154] Both realized that without an archive, there would be nothing to interpret and no material from which to make meaning.

As our archive is gradually being transformed from a print to a digital archive in large part without the input of humanities scholars, the future of philology

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[151] Chris Anderson, "The End of Theory: The Data Deluge Makes Scientific Method Obsolete," *Wired*, 23 June 2008, at www.wired.com/2008/06/pb-theory.

[152] See Patrik Svensson and David Theo Goldberg, eds., *Between Humanities and the Digital* (Cambridge, MA, 2015).

[153] August Boeckh, in *Enzyklopädie und Methodologie der philologischen Wissenschaften*, ed. E. Brautuscheck (Leipzig, 1877), 10.

[154] Spoerhase, "*Big Humanities*," 15.

is one of the most important issues confronting the humanities in a digital age. As Jerome McGann and Bethany Nowviskie have put it, we "stand before the vast, near whole-scale transformation of our various and shared cultural inheritance."[155] Considering our contemporary efforts in light of Mommsen's efforts helps us see that constructing archives, be it inscription collections or digital data sets, is never *merely* the aggregation of facts.[156] The collection, organization, and filtration, which are integral to the creation of an archive and the maintenance of traditions, are dependent on particular practices, tools, and techniques that themselves have histories. As humanist scholars reflect again on the differences between collecting and interpreting facts, we would do well to remember that we do so within a tradition of debating similar questions.

The longer history of the "big humanities" can help us understand that changes in scale and method have historically entailed changes in the most basic ways that humanities scholars have actually done and related to their scholarship. Not everyone will be *interpreting* the data or formulating the grand grant-driving thoughts. Some scholars or research assistants will collect and code it based on the designs of a managerial master.[157] Many self-identified digital humanists celebrate collaborative scholarship as an unqualified good, but collaborative or collective labor, as the history of big-humanities projects shows, can have negative consequences, such as distinct hierarchies in which "one leads and many labor."

We also need to consider the ways that the capital requirements may require the big humanities to be more legible and visible to administrative processes. All those big-humanities grant applications—from the Office of the Digital Humanities at the National Endowment for the Humanities, Mellon Foundation's Scholarly Communication and Technology Program, the American Council of Learned Societies Digital Innovation and Collaborative Research grants, the SSRC's Digital Humanities grants, to the Deutsche Forschungsgemeinschaft's long history of funding big projects—have distinct categories and protocols required for funding. How do these administrative categories and imperatives shape the kinds of question scholars pose and the work they do?[158] All knowledge practices, humanities or otherwise, can be coopted for various ends, and it

[155] Bethany Nowviskie, "Toward a New Deal," at http://nowviskie.org/2013/new-deal; Jerome McGann, *New Republic of Letters* (Cambridge, MA, 2014), 1–3.

[156] Jerome McGann, "Philology in a New Key," *Critical Inquiry* 39/2 (2013), 327–46.

[157] On the dynamics of labor and hierarchies in digital humanities and the hope that such bureaucratization has not fully captured digital humanities, see Rita Raley, "Digital Humanities for the Next Five Minutes," *differences* 25/1 (2014), 26–45; Wendy Hui Kynong Chun and Lisa Marie Rhody, "Working the Digital Humanities: Uncovering Shadows between the Dark and Light," *differences* 25/1 (2014), 1–25.

[158] For what I find to be an exaggerated account of these questions see Richard Grusin, "The Dark Side of the Digital Humanities," *differences* 25/1 (2014), 79–92.

would be naive to assume that one form of humanistic inquiry—the solitary, interpretive type, for instance—is pure while others—the collaborative, digital, for instance—are impure.[159]

Finally, the history of the big humanities can help us better understand how contemporary debates ostensibly about method are also debates about the persona of the contemporary scholar and the ethics of knowledge. Is the end of scholarship simply new knowledge, ethical transformation, or both? Mommsen and Nietzsche's arguments about how and why to practice humanistic inquiry were two ends of a broad spectrum. Taken in isolation their views limit the goods that the humanities can provide. The more recent polemics of writers such as Jockers and Kirsch are caricatures of these older debates with one suggesting that simply amassing evidence will enlighten us or even set us free and the other suggesting that a Nietzschean-inspired interpretive will could do the same. What is perhaps most instructive in considering the long history of the humanities, however, is just how complex and varied they have always been.

[159] For an insightful discussion of the digital humanities and claims that they are necessarily complicit with the "neoliberal" university see https://lareviewofbooks.org/article/digital-humanities-interview-bethany-nowviskie.