1

Discipline Formation and Research Training: Chicken or Egg?*

James Turner

Introduction

Each of the chapters in this collection inquires into how education for research developed in a specific discipline or cluster of disciplines. So at the outset it may be useful to stand back from any one discipline and ask a meta-question that pertains to all. What is the relationship between the development of training specifically for research and the appearance of modern disciplinarity as such? Even though unspoken, this link between disciplinary-mindedness and disciplinary training lies behind each of the following studies of particular disciplines. I throw up my hands at the ancient paradox of which came first, the chicken or the egg. But it might prove illuminating to try to unravel a similar riddle in the history of academic knowledge: did disciplines precede training for research in them, or vice-versa? I have neither the learning nor the hubris to tackle the wide ranges of time and space that my fellow contributors cover in this volume, and I doubt in any case that evidence has yet been assembled that would enable a worldwide investigation into links between disciplinarity and education for research. So, a demure modesty forced upon me, I shall limit my reconnaissance to narrower terrain that for a quarter century I have mapped various bits of.

In the United States and United Kingdom, during the late nineteenth and early twentieth centuries, modern academic disciplines appeared, based in universities. At about the same time, specialized training in those disciplines also commenced. In both countries, such training for research

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took place after students had earned their first university degree. In the US research training typically took place within a formal degree program, in the UK often through less formal mentorship. Post-graduate fellowships frequently supported training in both the US and UK. (These patterns are worth noting because, even as research training was becoming commonplace across the globe, frameworks for it varied widely.) Different disciplines formed at different times. But, in every case I know, instruction in research in the discipline began very close in time to the discipline's formation. This coincidence in time is manifest in the literature, whether one looks at general histories of higher education, such as Roger Geiger's recent book on American higher education, or histories of specific disciplines, such as Peter Novick's classic study of the US historical profession—even though such authors rarely, if ever, comment on the coincidence.[1]

To rephrase the query, now in this more limited, English-speaking, north Atlantic context: Which came first, the discipline or advanced training in it? At first the question seems silly because the answer looks so obvious. The discipline *must* have come first. How could anyone train people to pursue research in a discipline that did not yet exist? But think for a moment. A *field of study* is not necessarily a *discipline* in the modern academic sense. At least in principle, advanced education might evolve in a field before that field became a discipline.

So we must first ask what constitutes a discipline. Why does the question matter? Consider the present status of disciplinarity. Disciplines are so integral to modern academic knowledge that they fade into the landscape, and often the character of disciplinarity itself (as distinct from the qualities of a particular discipline) does not seem to need explication. An excellent recent history of *inter*disciplinarity devotes much time and intelligence to defining interdisciplinarity but never sees a need to explain the *disciplinarity* that logically precedes interdisciplinarity.[2] Disciplines are just *there*.

Yet the birth of modern disciplinarity was unprecedented and momentous. Discipline-formation transformed all academic knowledge, from the natural sciences to the human sciences. It splintered knowledge into newly distinct, separate provinces. So it does need to be explained, its nature and

[1] Roger L. Geiger, *The History of American Higher Education: Learning and Culture from the Founding to World War II* (Princeton, 2015), especially Chap. 8; Peter Novick, *That Noble Dream: The 'Objectivity Question' and the American Historical Profession* (Cambridge, 1988), *passim*. I cannot think of a historian who has paid attention to this issue of timing, though my knowledge of these literatures is hardly exhaustive and my memory belongs to a 70-something.

[2] Harvey J. Graff, *Undisciplining Knowledge: Interdisciplinarity in the Twentieth Century* (Baltimore, 2015).

origin understood. This job may be especially urgent today when interdisciplinarity is the Hallelujah Chorus sung by university administrators and when disciplinarity has come under growing criticism, particularly perhaps in the humanities, for allegedly promoting hyperspecialization and blocking a broad view of interrelated problems. What exactly are we academics talking about when we talk about—or rant about—disciplines and interdisciplinarity? The question is complex and delicate, with a history still surprisingly obscure, considering how much ink has been spilled in arguing about it. Again, I mean not the much-written-about historical background of specific disciplines—'the rise of English studies' or the 'history of sociological analysis'—but the history of our modern notion of disciplinarity as such.[3]

For scholars writing (or reading) in English, semantic confusion may hide the radical change that disciplinarity brought. The word *discipline* has been used in academic contexts for centuries. It could mean *instruction*, but it could also mean *a branch of knowledge*. Already around 1400 Geoffrey Chaucer used *discipline* in the latter sense in his *Canterbury Tales*.[4] But this long persistence of the word in academic usage obscures the discontinuity created when disciplinary specialization took off in the nineteenth century, especially the later nineteenth century. Comparing earlier uses of *discipline* with more recent usage makes the novelty easier to see. Textual philologists in the sixteenth and seventeenth centuries, for instance, agreed broadly on the kinds of problems to address and on methods to resolve them. They also developed distinctive tools for keeping track of information (such as commonplace books) and for spreading knowledge (such as commentaries and editions).[5] These shared traits made textual philology a discipline. But such early-modern disciplines in no way monopolized a scholar's time and energy. One individual might study ancient Roman archaeology, the Bible, and medieval English literary texts. Disciplines around 1900 also agreed on their problems and methods. They, too, developed distinctive technologies for organizing data (like files of index cards) and for broadcasting knowledge (like discipline-specific journals). Yet modern disciplines grew much more strictly divided. By the 1920s vanishingly few—if

[3] D. J. Palmer, *The Rise of English Studies: An Account of the Study of English Language and Literature from its Origins to the Making of the Oxford English School* (London, 1965); Tom Bottomore and Robert Nisbet, (eds.), *A History of Sociological Analysis* (New York, 1978).

[4] *Oxford English Dictionary*, s. v. *discipline*; Geoffrey Chaucer, 'The Canon's Yeoman's Tale', line 700.

[5] See, for samples of this early-modern world of learning, Ann M. Blair, *Too Much to Know: Managing Scholarly Information before the Modern Age* (New Haven, 2010); Anthony Grafton, *Joseph Scaliger: A Study in the History of Classical Scholarship*, 2 vols. (Oxford, 1983–93); Peter N. Miller, *Peiresc's Europe: Learning and Virtue in the Seventeenth Century* (New Haven, 2000).

any—scholars would try to edit Roman poets, *Paradise Lost*, and the New Testament, as the Cambridge philologist Richard Bentley did in the early eighteenth century, or to publish on ancient Greek temple architecture, Ralph Waldo Emerson, and Dante, as the Harvard professor Charles Eliot Norton did in the late nineteenth.[6]

The triumph of disciplinarity was not inevitable. It did not inexorably flow from the piling up of more and more information, so that (as I often hear) eventually these data just had to be divided into manageable heaps arranged by subject matter. People have always had 'too much to know', to steal the title of Ann Blair's masterful book on scholarly information-management in Europe before the modern age.[7] Disciplinarity is one way, not the only way, of organizing massive information flow. Nor did the rise of the research university demand that scholars and scientists now pledge allegiance to a single modern discipline. The anatomist and historian Elliott Coues, the paleontologist and ethnologist William Dall, the anthropologist and ornithologist Henry Henshaw, the geologist and archaeologist William Holmes, the meteorologist and astronomer Cleveland Abbe, the theologian and experimental psychologist George Ladd, the archaeologist and geologist Newton Winchell, the economist and sociologist William Graham Sumner, the bacteriologist and archaeologist Theophil Prudden, the zoologist and art historian Edward Morse all flourished in the era when research universities came to dominate the academic landscape, just to cite several examples who appear in the *American National Biography Online*. In fact, there is good reason to believe that two *different* ideals of research competed in the new research universities. One was the disciplinary specialization still familiar to us. The other might be called a paradigm of 'common erudition'. Both demanded deep research, both deprecated dilettantism. Both required thorough learning, both valued real expertise. But where one ideal posited little or no connection between specialized areas of knowledge, the other continued to regard the map of knowledge as undivided and to insist that a scholar or scientist could work responsibly in two widely separated locations on it. The struggle over the research ideal did not pit ignorant 'generalists' against erudite 'specialists' but involved two opposed notions of how research should be carried on.[8] Contingent events not yet well understood, rather than inexorable fate, eventually brought victory to the disciplinary specialists.

[6] Kristine Louise Haugen, *Richard Bentley: Poetry and Enlightenment* (Cambridge, MA, 2011), 130–49, 170–81, 188–95, 205–10, 219–29; James Turner, *The Liberal Education of Charles Eliot Norton* (Baltimore, 1999), 295, 310, 333–4, 398, 488, 489, 492.

[7] Blair, *Too Much to Know.*

[8] James Turner, 'The Forgotten History of the Research Ideal', in Turner, *Language, Religion, Knowledge: Past and Present* (Notre Dame, IN., 2003), 95–106.

What qualities, then, define these new-model disciplines, our disciplines? First, their practitioners normally see themselves as expert in a single area of knowledge. That is, scholars and scientists regard their discipline as set apart from other disciplines, pursuing different subjects with different methods. Second, modern disciplines have institutional walls, such as academic departments, to divide them. These walls have leaked ever since they were built; yet historians, astronomers, and sociologists do hobnob mostly with members of their own clan when sharing their research or discussing teaching in their discipline (as distinct from when griping about the university administration or arguing over how to tweak the college's curricular requirements). Third, modern disciplines develop a scholarly infrastructure that fosters dialogue within the discipline and discourages communication across disciplinary lines. Disciplines construct learned societies like the (US) College Art Association, where art historians read papers to each other; and they spawn disciplinary publications such as the (UK) *Economic Journal*, where economists write for each other. These last two traits—institutional walls and disciplinary infrastructure—follow from the first. If professors did not understand themselves as belonging to a single specialized discipline, they would create neither university departments nor journals devoted exclusively to that discipline.

Where did learned men and women get this idea of directing their energies to a single discipline? The question matters. Attacks on disciplinarity today focus on the scholarly weaknesses arising from self-dedication to a single, insulated field of knowledge—and defenses of disciplinarity invoke the strengths entailed in just such a focus. The question also brings us back to the relationship between discipline-formation and advanced training in scholarship.

I have only begun to nose around in the history of disciplinarity. Indeed, every piece of evidence that follows derives from research I undertook on other aspects of the history of academic knowledge. In this research the novelty—and puzzling origin—of disciplinarity kept intruding, even though I was not looking in that direction. But, ipso facto, my information is limited and unsystematic. I know the history only of disciplines in the humanities and humanistic social sciences in the English-speaking world, and that only partially and tentatively.

If you do not see where to head, you can only take a leap in the dark. I am going to hazard a hypothesis about the link between discipline-formation and advanced training in research, derived from two case studies. The first involves a pair of anthropologists at Oxford just after 1900. The second concerns graduate education in the last quarter of the nineteenth century at America's first thoroughly research-oriented university.

Two cases amount to anecdotes, not data; but anecdotes can set us thinking about why disciplinarity developed when and as it did.

The first case centers on an Oxford student and her mentor. The student was Barbara Freire-Marreco (1879–1967), who in 1908 was awarded the first diploma for postgraduate study in anthropology.[9] Her mentor was John Linton Myres (1869–1954), who helped to create the diploma program just mentioned.[10] Consider Myres first.

A British social anthropologist today would regard Myres as a founder of her discipline. Besides shaping the program at Oxford, in 1901 he initiated the Royal Anthropological Institute's monthly journal, *Man*. Later he served as president of the Institute (1928–1931).[11] In 1912 he co-edited the fourth edition of *Notes and Queries on Anthropology*, a standard reference. In 1923 he published a book on Neolithic and Bronze Age cultures, in 1934 another on the ethnology of prehistoric Indo-European peoples.[12] He was a recognized authority on Ice Age humans in Europe.[13] In the 1920s he headed the Folk-Lore Society.[14] An anthropologist to the core.

But wait! As a young fellow of two Oxford colleges, Myres worked mainly on early Greek archaeology.[15] In 1907 he moved to Liverpool University as professor of Greek and lecturer on ancient geography. He returned to Oxford in 1910 as Wykeham Professor of Ancient History. In 1914 he delivered the inaugural Sather Lectures in Classical Literature at the University of California. A second invitation to give these eminent lectures in 1927 resulted in his magnum opus, *Who Were the Greeks?*[16] Late in life, Myres wrote a book titled *Herodotus: Father of History* and another called *Homer and His Critics*, not to mention a technical study of ancient

[9] When I first encountered Freire-Marreco in the Bodleian Library's manuscript collections well over a decade ago, it was nearly impossible to learn anything about her from secondary sources. Happily there is now a diligently researched biography: Mary Ellen Blair, *A Life Well Led: The Biography of Barbara Freire-Marreco Aitken, British Anthropologist* (Santa Fe, NM, 2008). Unnoted information about Freire-Marreco comes from this book.

[10] For Myres, see principally John Boardman, 'Myres, Sir John Linton (1869–1954)', *Oxford Dictionary of National Biography*, http://www.oxforddnb.com/view/article/35180. All information about Myres not otherwise noted comes from this article.

[11] Earlier, Myres had been secretary of the Institute. *Man* was renamed the *Journal of the Royal Anthropological Institute* in 1995.

[12] Information about Myres's publications comes either from WorldCat or the Hathi Trust digital catalog.

[13] R. M. Fleming to J. L. Myres, June 17, 1930, MS. Myres 14, f. 40, Myres Papers, Bodleian Library, Oxford University.

[14] Alison Petch, 'Barbara Freire-Marreco (Mrs. Robert Aitken)', in *England: The Other Within*, Pitt-Rivers Museum, Oxford University, http://england.prm.ox.ac.uk/englishness-Barbara-Freire-Marreco.html.

[15] Myres was a fellow of Magdalen College (1892–95) and then of Christ Church (1895–1907).

[16] Joseph Fontenrose, *A Brief History of the Sather Professorship*, http://www.classics.berkeley.edu/people/sather/history.

Greek drama.[17] He served as president of the Hellenic Society and chairman of the British School at Athens, major institutions for classical studies. Now he looks like a classicist, pure and simple.

In fact Myres was neither classicist nor anthropologist, in the modern disciplinary sense. He was, rather, a holdover from an era before disciplinary lines hardened. While professor of Greek in Liverpool, he also lectured on the 'systematic [archaeological] excavation of Wales' and 'the antiquities of British Honduras', among numerous other subjects.[18] Myres made a hash of disciplinary divisions as we now understand them. In this he resembled other important scholars of the later nineteenth century, such as his older Scottish contemporary William Robertson Smith (1846–1894), who contributed to biblical criticism, to anthropology, to sociology, to the comparative study of religion—and also published in mathematics and physics.[19]

When Myres first encountered Barbara Freire-Marreco around 1904 or 1905, the UK had no well-defined discipline of anthropology for him to belong to, even if he had wanted to.[20] Anthropology was by then deemed (sometimes grudgingly) a proper university subject. And in 1905 there did exist institutions—the Anthropological Institute and its journal *Man*—that in retrospect *appear* disciplinary.[21] But appearances deceive. Anthropology still lacked the professional specialization associated with a modern discipline. Anthropology was only a hobby for most members of the Anthropological Institute—including its president at the time. (William Gowland, the Anthropological Institute's president in 1905–06, was a professor of metallurgy who, after working for years as a metallurgist in Japan, published on Japanese prehistoric archaeology—as well as on a school of painters in modern Kyoto. He seemed to be interested in all

[17] The last mentioned book was *The Structure of Stichomythia in Attic Tragedy* (1952). The Merriam-Webster Dictionary defines stichomythia as 'dialogue especially of altercation or dispute delivered by two actors in alternating lines (as in classical Greek drama).' *Herodotus: Father of History* appeared in 1953; *Homer and His Critics* was published posthumously in 1958.

[18] J. L. Myres to Barbara Freire-Marreco, March 27, 1908 (draft), MS. Myres 16, f. 61, Myres Papers.

[19] The best biography is Bernhard Maier, *William Robertson Smith: His Life, His Work, and His Times* (Tübingen, 2009). It stresses his Old Testament criticism more than his other achievements (appropriately for a book published in a series titled Forschungen zum Alten Testament). I hope to write a small book about Smith within the next several years.

[20] Freire-Marreco's correspondence with Myres makes clear that she had been his pupil, presumably in Greek, when an undergraduate at Lady Margaret Hall.

[21] The Anthropological Institute of Great Britain and Ireland became the Royal Anthropological Institute of Great Britain and Ireland in 1907. Organized in 1871, its roots stretched back to the Aborigines' Protection Society, founded in 1837, mostly by Quakers with a background in abolitionism. Among them was Henry Christy, who years later would awaken Edward Tylor's ethnological interests.

things Japanese, rather than specifically in anthropology.[22]) The birth of the journal *Man* is revealing. Since 1869 a magazine called *The Academy* had functioned as Britain's organ of scholarship in all fields outside mathematics and the natural sciences. But in 1896 an American businessman bought *The Academy* and turned it into a less academic, more 'literary' publication. Myres hatched *Man* to fill the void. The Egyptologist Flinders Petrie suggested the title *Man* 'as the counterpart of the [journal] "Nature" which exists already'. Just as *Nature* surveyed the natural sciences, *Man* would cover scholarship concerning the human world—'all archaeology, anthropology, some history (down to French Revolution, say) and some psychology & folklore'. But, no sooner than imagined, this sweeping conception starved to death in the emerging ecosystem of academic disciplines. 'To avoid collision' with existing specialized journals, *Man* excised 'practically all the "history", and a large part of the "archaeology" ' (the classical part). When the first issue came out in 1901, psychology had also vanished; and *Man* carried the subtitle *A Monthly Record of Anthropological Science*. It covered only topics by now understood to pertain to anthropology, like prehistoric archaeology, ethnology, and folklore. The wreck of Myres's original plans produced the accidental semblance of disciplinary specialization.[23]

Myres's pupil Barbara Freire-Marreco—though only ten years younger—turned out a very different type of scholar. She started much as her mentor had, with an undergraduate diploma in classics.[24] Upon graduation, Myres, with no further training, won a fellowship at Magdalen College and began to excavate and publish. In 1906 Freire-Marreco likewise applied for a research fellowship, at Somerville College. Her application proposed a book on tragic drama and the cult of the dead from ancient Greece to modern European folk culture: a project combining what would later be the disciplines of comparative literature, classics, and

[22] M. C. Curthoys, 'Gowland, William (1842–1922)', *Oxford Dictionary of National Biography* online, http://www.oxforddnb.com/view/article/58551.

[23] William Crooke to J. L. Myres, January 30, 1897, and Myres to Havelock Ellis [draft], n.d. [late November or early December 1896], MS. Myres 59, ff. 12–13, ff. 14–15, Myres Papers. *The Academy* was at first published monthly and then semimonthly but became a weekly in 1874. The businessman was John Morgan Richards. His daughter, Pearl Craigie, was a popular novelist (writing as John Oliver Hobbes), which may help to explain the *Academy*'s literary turning under her father's ownership. My account of *Man*'s beginnings comes, slightly modified, from James Turner, *Philology: The Forgotten Origins of the Modern Humanities* (Princeton, 2014), 342.

[24] Freire-Marreco received a *diploma* in classics in 1905 after undergraduate study at Lady Margaret Hall, since women were not yet awarded *degrees* at Oxford, while in 1892 Myres had gotten his *degree* in *literae humaniores*, popularly called 'Greats', the Oxford term for classics.

anthropology. But Somerville turned her down.[25] The next summer she was hired to compile the bibliography in a Festschrift honoring the pioneering anthropologist Edward Tylor.[26] When Oxford's new, mostly postgraduate diploma program in anthropology opened to students that fall, Freire-Marreco was one of the first four to enroll—and the first to finish.[27] In Oxford she studied physical anthropology with Arthur Thomson and social anthropology with R. R. Marett; at home on her own she read in a field called 'Ethics and Social Institutions'; then she went to London University to study for a term with the sociologist L. T. Hobhouse, who 'let me do a very long essay on "Primitive Forms of Society" '.[28] At the end of one academic year she passed the examination for the diploma with distinction.

The diploma program focused exclusively on anthropology; and this experience apparently gave Freire-Marreco the impression that such specialization was the ideal for anthropologists. As she was winding up the program, she began to help Myres with editing *Notes and Queries on Anthropology*.[29] (Eventually she rose to become co-editor of the book.) In 1909 she published her 'diploma paper' (that is, thesis) in *Man*. That same year, at last, she won the Somerville College research fellowship. This time her research topic was strictly anthropological: 'the nature of [the] authority of chiefs and kings in uncivilized society'.[30] Her only quandary was which 'uncivilized society' to focus on.[31] That was settled when 'people'—which people, she did not say—began telling her 'how wrong it w[oul]d be to enjoy an anthropological scholarship without fieldwork'. She decided

[25] Barbara Freire-Marreco to J. L. Myres, April 30, May 10, 11, 16, and 19, and June 14, 1906, and Myres to Freire-Marreco, May 10, 18, and 21, 1906 (all drafts), MS. Myres 16, ff. 1–32, Myres Papers; Blair, *Life Well Led*, 30–9. Freire-Marreco hoped to find in the cult of the dead the real ('non-Dionysiac') origins of tragedy. Her correspondence with Myres contains a hint that Jane Harrison may possibly have lurked in the background of this project.

[26] Freire-Marreco to Myres, August 9, 1907, MS. Myres 16, ff. 41–43, Myres Papers; Northcote W. Thomas (ed.), *Anthropological Essays Presented to Edward Burnett Tylor in Honour of his 75th Birthday, Oct. 2, 1907* (Oxford, 1907), 375–409. By this time Freire-Marreco had also developed an interest in Neolithic ceramics.

[27] Alison Petch, 'Anthropology Diploma Students 1907 on', in *The Invention of Museum Anthropology, 1850–1920*, Pitt-Rivers Museum, Oxford University, http://web.prm.ox.ac.uk/sma/index.php/articles/article-index/341-oxford-diploma-students-1907–1920.html. A first degree was not formally required for admission to the program, but most of the early students had one.

[28] Freire-Marreco to Myres, December 6, 1907, and March 28, 1908, MS. Myres 16, ff. 53–54 and 62–64, Myres Papers.

[29] J. L. Myres to Barbara Freire-Marreco, March 27, 1908 (draft), MS. Myres 16, f. 61, Myres Papers.

[30] Petch, 'Freire-Marreco'. The diploma paper was 'Notes on the hair and eye colour of 591 children of school age in Surrey'.

[31] Barbara Freire-Marreco to J. L. Myres, June 16, [1909], MS. Myres 16, ff. 77–78, Myres Papers.

to investigate some Native American societies 'still in working order'.[32] Her choice mattered because in the United States anthropology had fully formed as a specialized discipline by the 1890s.[33] Myres put Freire-Marreco in touch with the American anthropologist Alice Fletcher, who suggested she study the Pueblo Indians of the Southwest. On her way to New Mexico in 1910, Freire-Marreco stopped to talk with leading anthropologists on the east coast, to 'get some idea of the kind of work they are doing'.[34] She apparently met with no one *but* anthropologists.[35]

She arrived in northern New Mexico toward the end of June. In early July, at Alice Fletcher's injunction, she moved into a summer-session camp of the School of American Archaeology in Santa Fe, run by the anthropologist Edgar Lee Hewett, a professional friend of Fletcher. The camp lay some twenty miles northwest of Santa Fe, in Frijoles Canyon on the Parajito Plateau of the Jemez Mountains. (Frijoles Canyon is now within Bandelier National Monument, near Los Alamos.) There the camp students were excavating Ancestral Puebloan structures, and there Freire-Marreco met young anthropologists and got a two-month crash-course in Puebloan culture. She apparently did not take part in the excavations, but Indians from local pueblos did; and Hewett helped her make contacts in the nearby pueblos of Santa Clara and San Ildefonso. In early September, when the camp folded its tents, she moved into Santa Clara Pueblo. There she stayed for four months, visiting other pueblos and sojourning briefly with once-nomadic Indians in Arizona.[36] During some six months of fieldwork she stayed in regular contact with American anthropologists working in the region. A second stint of fieldwork in 1913 cemented cooperation with colleagues in the Southwest and allowed her to visit more leaders of the discipline elsewhere in the US. Her research resulted

[32] Barbara Freire-Marreco to J. L. Myres, July 5, [1909], MS. Myres 16, f. 82, Myres Papers. Freire-Marreco's emphasis.

[33] There is a large literature on the early history of anthropology in the US. For a very brief, fairly recent account of the early professional period, see Sydel Silverman, 'The United States', in Fredrik Barth et al. (eds.), *One Discipline, Four Ways: British, German, French, and American Anthropology* (Chicago, 2005), 258–63.

[34] Freire-Marreco, report to Somerville College fellowship committee, 1911, quoted in Blair, *Life Well Led*, 63.

[35] To judge from her correspondence. For details see Blair, *Life Well Led*, 62–6.

[36] Barbara Freire-Marreco to J. L. Myres, 31 August 1910, MS. Myres 16, ff. 92–3, Myres Papers. She left Santa Clara for Arizona in late November, then returned to Santa Clara just before Christmas and stayed until leaving for home in early February. The School of American Archaeology was later renamed the School of American Research and today is known as the School of Advanced Research. Hewett is perhaps best remembered as chiefly responsible for the Antiquities Act of 1906.

in a monograph, *Ethnobotany of the Tewa Indians* (1916), co-written with two anthropologists she had met in New Mexico.[37]

Her ethnological interests later shifted to topics more easily pursued in England, although she kept up with Americanist publications. Freire-Marreco married in 1920 and never held a permanent academic post, though for a while she lectured at Somerville College and the London School of Economics as a recognized expert on Pueblo Indians. From 1912–1929 she also edited *Notes and Queries in Anthropology* for the Royal Anthropological Institute. For the rest of her life she engaged with ethnology, mostly through the Folklore Society. Until the eve of her death in 1967 she wrote frequently for the journal *Folklore*.[38] Unlike Myres, she never worked in any discipline but anthropology.

Before commenting further on her, I shall cross the Atlantic to look at early graduate education at the Johns Hopkins University.[39] As soon as it opened in 1876, Hopkins stood out as the most research-intensive university in the United States. Postgraduate training for research in the humanities and social sciences centered on the seminar, or 'seminary' as then called.[40] Hopkins seminars differed widely in pedagogical method.[41] But they shared a single-minded focus on one and only one field of study. At a time when Charles Eliot Norton at Harvard was lecturing on art history to undergraduates, teaching a seminar-like advanced course on Dante, editing the seventeenth-century English poet John Donne, and organizing the Archaeological Institute of America, the Hopkins seminars modeled a different approach: real scholars stuck to one field.

Detailed records survive for three early seminars: the Greek seminary during the years 1877–92; the German seminary for the academic year 1889–90; and the so-called 'Journal Meetings' of the English Seminary from 1895 to 1903.[42] Basil Gildersleeve's Greek seminar—by far the best

[37] The title is a little misleading. Strictly speaking, Tewa is not the name of a people, but the language spoken by the Indians Freire-Marreco lived with in New Mexico.

[38] Petch, 'Freire-Marreco'.

[39] The best study of the early history of Johns Hopkins remains Hugh Hawkins, *Pioneer: A History of the Johns Hopkins University, 1874–1889* (Ithaca, NY., 1960).

[40] The Latinate *seminarium* was also used. Seminars featured as well in mathematics and in some of the natural sciences along with laboratories.

[41] Hawkins, *Pioneer*, 224–32.

[42] Greek Seminary Minutes, Nov. 21, 1877-May 29, 1879, and October 8, 1879-May 25, 1892 (two bound volumes; binding of first volume is wrongly stamped Nov. 21, 1878-May 29, 1879), record group 04.040, subgroup 1, series 7, box 1; Minutes of the Second Section of the Teutonic Seminary, of the Johns Hopkins University, October 1889, bound volume in Records of Department of German (1889–1987), record group 04.100, subgroup 1, series 1, box 1; Minutes of the Journal Meetings of the English Seminary of the Johns Hopkins University (1895–1903), bound volume in Records of Department of English, record group 04.130, series 4, box 1; Johns Hopkins University Archives.

documented—focused annually on a different ancient Greek author. Each member of the seminar developed a research paper connected with that author. For instance, in 1878–79, the seminar centered on the second-century CE satirist Lucian. Weekly meetings in autumn were devoted to Lucian's language: analysis of vocabulary, grammatical forms, and the like. Students also began to prepare a research paper on some aspect of Lucian's works (rhetorical, philosophic, religious, and so forth). Beginning in February, presentation and discussion of these student papers dominated meetings.[43] At no point did any scholarship beyond classical studies sneak into the seminar—not even, say, an article on modern literary satire that might cast light on an ancient satirist. In contrast, in 1880 Gildersleeve founded the *American Journal of Philology*. He intended it to cover 'the whole cycle of philological study' from 'Comparative Grammar' to 'the Teutonic languages'.[44] His seminar students got a much narrower idea of scholarship than his journal readers.

The two other seminars, apparently less rigorous than Gildersleeve's, were equally exclusive in subject matter. The 'Journal Meetings' of the English seminar required its members to critically review recent journal articles and books. All these concerned English language and literature.[45] In Henry Wood's German seminar, student papers mostly summarized research by scholars elsewhere, especially German professors. The papers were hardly cramped in scope; one ranged from the medieval Siegfried stories through the nineteenth century. The *topics*, however, never ventured beyond German language and literature.[46] Yet the professor who ran the seminar had only a few years earlier shifted his own research from English literature to German![47] Again, seminar students got a more disciplinary training than their teacher embodied.

There is no reason to think Johns Hopkins unusual in keeping graduate students focused on a single field of study. The PhD program in history at Brown University in this period was equally unrelenting in requiring

[43] Greek Seminary Minutes, Nov. 21, 1878 [1877]-May 29, 1879, 51 (October 3, 1878), 89 (February 27, 1879).

[44] B. L. Gildersleeve, 'Editorial Note', *American Journal of Philology* 1 (1880), 2. He explicitly told an inquirer from Cornell that the 'country is not yet ready' for a specialized 'Journal of Classical Philology', and 'still less' for 'a Journal of English Philology'. B. L. Gildersleeve to James Morgan Hart, June 6, 1879, in Ward W. Briggs, Jr. (ed.), *The Letters of Basil Lanneau Gildersleeve* (Baltimore, 1987), 84.

[45] Minutes of the Journal Meetings of the English Seminary, *passim*.

[46] Topics included 'Grimm's Dictionary and [the] Beginnings of German Lexicography'; 'West Germanic Versification'; and 'the Alemannic dialect.' Minutes of the Second Section of the Teutonic Seminary, 27 (April 10, 1890), 9 (November 1889), 23–5 (March 27, 1890), 33 (April 24, 1890).

[47] Wood moved from an appointment in English to one in German in 1884. Hawkins, *Pioneer*, 162, 166.

graduate students to study history alone.[48] Likewise, Princeton's classics seminar, organized in 1898–99, stuck strictly to classical studies.[49] I have a very haphazard knowledge of several archives bearing on early graduate education at Harvard, Yale, Michigan, and Texas, picked up in research about other questions. This limited information suggests that the pattern was general.

What are we to make of these two case studies? In both, the disciplines involved had not completely gelled. Though scholarly specialization was growing, John Myres was far from the only scholar who published respected work in what now seem distinct disciplines. I mentioned Charles Eliot Norton at Harvard. We could add many names—like the Scot Andrew Lang (classical scholar, historian of Scotland, anthropologist) or the Canadian-American Simon Newcomb (astronomer, mathematician, economist).[50] None of these men had more than a general undergraduate education. Even Gildersleeve, who did get a German PhD and limited his own scholarship to ancient Greek language and literature, was not fully disciplinary in mind-set: the journal he founded aspired to cover the entire, vast range of philology.

Then, in roughly the generation after Myres and Gildersleeve, scholars turned into modern, specialized disciplinary ones. What happened? The emergence of advanced, postgraduate training offers a plausible explanation. Freire-Marreco's mentor Myres exemplified pre-disciplinary scholarship. But her own training as an anthropologist, both in Oxford's diploma program and in her fieldwork among disciplinary anthropologists in America, provided a very different model. So she spent her career living the disciplinary ideal. Her case is particularly compelling because she was doubly an outlier: a woman, who never held a regular academic job. Still disciplinarity guided her life as a scholar. The students educated in the new seminars at Hopkins likewise learned to think of scholars as properly working in only one field. Their graduate education modeled this new

[48] J. Franklin Jameson, 'Graduate Studies in History at Brown University, 1887–1897' (printed brochure in folder containing his letters to H. B. Adams), Herbert Baxter Adams Papers, MS. 4, Series 1, Box 9, Johns Hopkins University Archives.

[49] Records of the Classical Seminary of Princeton University from December 14th 1898 to 19[08] (bound volume with loose pages inserted including a few items post 1908), University Archives, Academic Department Records, Department of Classics, vol. 2, 17–25; Department of Rare Books and Special Collections, Princeton University Library. 'Classical studies' here includes Sanskrit, then commonly a part of graduate training in classics. Thus, the seminar library also held materials on Indo-European comparative philology, which belonged to the discipline of classics as long as Sanskrit did.

[50] Lang lived from 1844 to 1912 and, except briefly in early life, never held an academic post. The largely self-taught Newcomb, 1835–1909, worked mostly in federal scientific institutions but did also serve as professor of mathematics and astronomy at Johns Hopkins University from 1884.

disciplinary ideal—even when the professor leading the seminar did not. In less than two decades classical scholars trained in Gildersleeve's seminar helped to turn his broad-gauged *American Journal of Philology*—and the American Philological Association it served—into nearly exclusive venues for research in classics.

Research training alone cannot *explain* the emergence of disciplinarity. Discipline formation was a complex process. It took decades. Multiple factors must have played into it. For instance, universities now existed within a modern industrial economy; maybe its specialized division of labor encouraged disciplinary specialization. Consider, too, that in the nineteenth century institutions arose to set doctors, lawyers, engineers, and similar professionals apart as distinct, status-conscious groups; possibly professors emulated them. After about 1850 British and American college curricula began to switch from generalized courses for all students to specialized programs for different interests; were professors following suit (or vice-versa)? But in the end mature disciplinarity appeared rather suddenly. The invention of research training may have been the catalyst that made it gel. If so, then research training is the place to start healing any ills disciplinarity now suffers.

To understand better the impact of disciplinary graduate education, it may help to glance at a couple of contemporaries of the Johns Hopkins seminarians who arrived at professional careers in universities via an older route, like the one traveled by J. L. Myres and Charles Norton. Recall that both Myres and Norton became influential university-based scholars with no formal preparation beyond an undergraduate degree (though in Norton's case a quarter century intervened between his bachelor's degree and his professorship).

Norton's approach to preparing students for research careers differed radically from the one that Myres pioneered in 1907 and that Johns Hopkins introduced only a couple of years after Norton started teaching at Harvard in 1874. Harvard began awarding the PhD, upon completion of a dissertation, in 1873.[51] Yet Norton—committed though he was to research and to the university as its home—never directed a dissertation. He mistrusted the disciplinary type of specialization linked with the dissertation—and with the seminar training at Johns Hopkins. (Ironically, Johns Hopkins sent a budding art historian to study with Norton for a semester—supported by his Hopkins fellowship!—before the young man waded into seminars in Baltimore.[52]) Norton feared disciplinary graduate

[51] Harvard awarded this first PhD in mathematics: https://www.gsas.harvard.edu/dean_and_administration/a_short_history.php (accessed July 13, 2016: this page no longer exists).

[52] This was Waldo Pratt. Turner, *Liberal Education of Norton*, 285–6.

education as intellectually and morally narrowing.[53] He certainly saw the need to form scholars, but he practiced a looser mode of apprenticeship than that on offer in PhD programs. He typically mentored promising students in scholarship as undergraduates and continued when they started professorial careers.

The results are illuminating. His style of 'advanced training for research'—his mentorship—encouraged students to stretch their scholarly wings far beyond any single discipline; and breadth showed in the results. Take a couple of examples. George Woodberry studied under Norton as an undergraduate. After graduating in 1877, he got a job as professor of English and history at the new University of Nebraska, where Norton advised him long-distance. Fired in 1882 along with several other professors in a political ambush, Woodberry returned to the Boston area as a free-lancer. There he wrote a history of wood-engraving; a solid biography of Edgar Allan Poe; poetry (admired in its day); and scholarly essays aimed at general readers, on topics ranging from classical Greek sculpture to Darwin's autobiography (with a strong bias toward English poetry). His scholarship landed him at Columbia University in 1891, first as professor of literature and then, in 1899, as head of Columbia's new department of comparative literature—before he unexpectedly resigned in 1904 to return to independent writing. His scholarly and poetic output was large and varied.[54] Arthur Richmond Marsh was another undergraduate protégé of Norton's, graduating in 1883. After a year as a lecturer at Harvard, Marsh became assistant professor of English at another college on the plains, Kansas University. Norton arranged publication opportunities for Marsh back east that stretched his scholarly range as far back as ancient Greek art. In 1891 Marsh returned to Harvard as *its* first (assistant) professor of comparative literature—indeed the first in the US. (Did Norton have a hand in the appointment?) Marsh published relatively little but was promoted to full professor in 1899. Not long thereafter, he resigned and went into the cotton brokerage business.[55]

[53] Ibid, 253–60, 282–6, 338–44, 368.

[54] Ibid, 269, 287, 294, 331; Vincent Freimarck, 'Woodberry, George Edward', *American National Biography Online*; George Edward Woodberry, *Studies in Letters and Life* (Boston and New York, 1890); Louis V. Ledoux, *The Poetry of George Edward Woodberry: A Critical Study* (New York, 1918), 14–15; K. K. Ruthven, *Ezra Pound as Literary Critic* (London, 1990), 6. Woodberry also cited the historian Henry Adams as an important influence on him when an undergraduate.

[55] Turner, *Liberal Education of Norton*, 342; *Harvard Crimson*, April 3 and June 16, 1883; *Quinquennial Catalogue of the Officers and Graduates of Harvard University* (Cambridge, MA, 1905), 28, 66, 253; 'The K.U. Poets of Yester-Year', *Graduate Magazine of the University of Kansas* 21 (November 1922), 5–6; Marsh, review of Charles Waldstein's *Essays on the Art of Pheidias*, *American Journal of Archaeology* 2 (1886), 182–7; Ruthven, *Pound as Literary Critic*, 6. For Marsh's conception of the new field, see Arthur Richmond Marsh, 'The

The parallels are curious. Both Woodberry and Marsh ranged far more widely in their scholarship than a Johns Hopkins PhD might have. This breadth may explain why both of them were tapped to pioneer the new field of comparative literature, which required the ability to navigate among a variety of national literatures, ancient and modern. Norton's protégés could manage that. Gildersleeve's and Wood's students probably could not. Yet Woodberry and Marsh both bailed out of the university and turned their energies elsewhere. No evidence survives to explain why. Had the grip of disciplinary specialization already tightened enough to make the two men give up on an academic career? Norton did mentor other students who became successful Harvard professors. Irving Babbitt nominally taught French literature, but his several books wandered far beyond it.[56] Charles Grandgent made his greatest reputation as a Dante scholar; but he, too, published in other areas, especially early in his career.[57] So it was possible, with enough persistence and erudition, for a non-disciplinary scholar to make his way in the early twentieth-century research university. Still, one wonders if Norton's version of 'advanced training for research' trained his students for a dying world, leaving them ill at ease in the new one a-borning.

However one answers that question, the triumph of disciplinarity after 1900 is patent, and its pervasiveness in research training equally obvious. My hypothesis is that, in the Anglo-American context, research-oriented graduate education actually precipitated disciplinarity. This guess may or may not point in the right direction. Only extensive research in multiple contexts can decide. I hope eventually to contribute to that work. Meanwhile, these preliminary speculations suggest a very large—and up to now unasked—question about how the modern organization of academic knowledge came to exist.

University of Notre Dame

Comparative Study of Literature', *Publications of the Modern Language Association of America* 11 (1896), 151–70. I cannot find a biographical article on Marsh, and the few available details of his life have to be pieced together from a large number of scattered, allusive references in online sources.

[56] Turner, *Liberal Education of Norton*, 344–5; David Hoeveler, 'Babbitt, Irving', *American National Biography Online*. Babbitt encountered Norton in his advanced course on Dante when Babbitt was studying for a master's degree in classics at Harvard. It seems likely, though I am not sure, that he also took one or more of Norton's art-history courses as an undergraduate in 1885–89.

[57] Grandgent lacks an article in the *American National Biography*, but see the obituary in *Speculum* 15 (1940), 379–81. His frequent appearances in the first two decades of the *Publications of the Modern Language Association of America* (1886) show his range of scholarly interests.