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The Radical's Catalogue

Antonio Panizzi, Virginia Woolf, and the British Museum Library's *Catalogue of Printed Books*

Devin Griffiths

Eight years ago (which is something like eight decades in Google years) Gregory Crane asked a provocative question: "What do you do with a million books?" He drew inspiration from the Carnegie-Mellon Million Book Project and Google Books, which emerged from the older Google Print the previous year. The Million Books Project had only recently passed 600,000 scanned volumes, and it was estimated that Google Books would eventually contain tens of millions (as of April 2013 the collection has surpassed 30 million works).[1] Recently these efforts have encountered new institutional and legal hurdles, prompting a second-generation effort to found new open-access databases like the Digital Public Library of America. But Crane's question points to a long-standing dilemma that we are still trying to solve: we might be able to bring millions of archival documents and artifacts together, but it is unclear what they will *do* together, in particular, which strategies of search and analysis will make these massive collections useful. This is a problem that can emerge at any scale. Most recently, the economist Thomas Piketty has drawn widespread criticism for his attempt to pull together, in his analysis of *Capital in the Twenty-First Century*, hundreds of resources that document three hundred years of economic and tax records in twenty different countries. Piketty argues that "advances in computer technology have made it much easier to collect and process large amounts of historical data," but these advances also precipitate increasingly complex problems of standardization.[2] The adjustments and projections that Piketty deploys in reading across a mixed set of incomplete, inconsistent, and contradictory sources have produced grumbles that range from "sourcing and definitional problems" to the charge that some results are effectively invented.[3] Studies like Piketty's, which draw upon "[e]xtensive historical and comparative data," must work in disparate languages and different intellectual idioms—from archives that encode distinct assumptions about the world, what matters in that world, and how to get at those matters.

In such examples scale and standardization are uneasily poised. It is a truism that texts—whether they consist of tax records or scholarly books—do not speak for themselves, but they also cannot speak to each other. In terms of this concern for the relationship between sources, the Piketty debate reflects the vexed relation between books and the technologies that index them. There is an inherent tension between the power of an expansive index to coordinate a wide range of materials and the limitations of the embedded procedures that institutions use to decide what to index and how. Expansions in scale bring this tension into crisis, as the increasing quantity of sources demands qualitatively different procedures to draw them together. This problem of the scalar transformation of print materials gained particular focus in the nineteenth century, as institutions including the British Museum, the French Bibliothèque Nationale, and the rapidly-growing American Library of Congress built collections that surpassed a million items by the close of the century.[4] The unprecedented scale of these collections forced new institutional and organizational challenges: libraries had to build new buildings, devise new procedures for acquiring, organizing, and retrieving books, and delimit new spaces that would permit users to work in them efficiently and safely. Collections burned and wars intervened, but by the end of the century, the physical infrastructure and bibliographic conventions of the major twentieth-century libraries had taken shape.[5] The decades Karl Marx spent working on *Capital* in the reading room of the British Museum Library serve as one of the more famous examples of the potential power and impact of these expansive new systems for organizing the printed word.

Marx was also one of many thinkers who prompted later generations of historians and social theorists to worry the problem of how these new collections, in their motivation, in the way that they organized the world of books, in their decisions regarding the protocols of their use, embedded idiosyncratic values and ideologies. For the last several decades, historians have explored how such national institutions flourished at the intersection between empire and its state apparatus, as part of the larger growth of what has been termed the "imperial archive": a network of museums, government institutions, and quasigovernmental societies that sought to collect and discipline the world's cultural and natural artifacts.[6] As has been pointed out (and was often expressed then), this aspiration to comprehensive knowledge, with its concomitant fantasy of imperial power, continually ran up against limitations. The total archive was always incomplete, always pulled in different directions. This inherent limitation, however, has

not affected the intuitive sense in which institutions like the British Museum Library have been cast as unilateral extensions of state power. In place of studies by the Library's most important modern historian, P. R. Harris, it is descriptions by authors like Virginia Woolf, and theories derived from Michel Foucault, Michel de Certeau, and Jacques Derrida (for at least the last two generations of social historians and literary scholars) that have done most to shape a background scholarly understanding of the British Museum Library and its impact.[7]

The examples of Piketty and Marx suggest an alternative approach, one that examines the implications of the Library as it developed in the nineteenth century, and in particular its immense *Catalogue of Printed Books* as a technology that, in the scale of the materials it indexed and in its redesign as a more dynamic system than the print indexes that preceded it, elevated the problems picked out by later critics. Cataloguing quickly emerged as one of the primary tasks of the British Museum Library in the nineteenth century. At the center of these efforts was Antonio Panizzi, the celebrated Keeper of Printed Books (1837–56) and then Chief Librarian (1856–66). Ostensibly a tool for identifying objects within a collection, catalogues served both ordinal and cardinal functions: they helped to locate physical items within the building even as they measured and evaluated relationships that existed within the collection as a whole. The scale of the vast collective efforts they supported forced the new catalogues to abandon the "rational" or "classed" catalogue, which, in the nineteenth century, meant a comprehensive catalogue organized by a hierarchy of subjects, in favor of a more elementary (and also more complex) relationship between identity, location, and time.[8] Publication date and place, along with new strategies for dealing with collective and anonymous authorship, became essential to such large collections, because the availability of multiple editions and copies became a particular challenge.

I am interested in how the archival practices of the British Museum's catalogue of printed books, particularly decisions about structure that were communicated through features of script, format, and institutional design, liberalized access to the printed word in far-reaching ways. In order to describe what was revolutionary about these new bibliographic systems, I draw on the analytic language of modern Library Information Science (LIS) and the history of computing. While this vocabulary is clearly anachronistic when applied to the manuscript and print-based procedures of a Victorian library, it helps to pick out features for which there was no adequate vocabulary in the nineteenth century. Panizzi's new catalogue involved many

important changes, from devolution into a strictly manuscript slip catalogue of printed books (its format for more than six decades), to a complicated set of 91 classificatory rules, changes that proved bewildering and controversial to many contemporaries, but which shaped the next generation of card-based catalogues and classification systems in significant ways. Joseph Kittler is one of many theorists who see a deep relationship between catalogues as a medium for print information and the formal constituents of the Turing machine.[9] If Panizzi's catalogue did not constitute an information technology in the modern sense, the model of the Turing machine can elucidate features that made Panizzi's catalogue so influential as a bibliographic technology. In order to be able to compute any problem, a Turing machine requires a discretely indexed and limitless memory, and infinite time to work.[10] Similarly, the elaborate rules of Panizzi's classification mitigated idiosyncrasy and moved toward a strict indexing that served higher-order operations of crossreferencing and supplementary indexes, while its manuscript slip format made the catalogue limitless in principle, capable of the endless revision required by new accessions and inevitable additions to the classificatory rules. The Panizzi catalogue was not an early computer, but it was Turing-*like*; an important attempt to redesign the catalogue as an iterative system of information rather than a stable physical object. And it was interactive, if not for its primary users, at least with respect to the museum librarians who consulted and revised it as they searched the stacks for uncatalogued books and searched publishing lists for books that evaded deposit. As a way to render the library as a more dynamic, open institution, and by elevating geography and date as coordinates for thinking about the collection, the Panizzi catalogue helped support the modes of critical history to which it would eventually be subject.

The essay that follows has two central movements. In the first section, I explore the implications of the institutional design of Panizzi's catalogue, its schemes of classification and its layout. Contemporary debates demonstrate how radical Panizzi's new design turned out to be, and help draw out the implications of this classification, which established the *Catalogue* as something more than a comprehensive index of physical texts.[11] Important to this discussion is a recreation of the manuscript slip catalogue, previously understood to be destroyed at the close of the nineteenth century, now made possible by the discovery of a portion of one working copy. The implications of these decisions regarding both procedure and physical organization are drawn out in the second section of the present essay, which takes Virginia Woolf's *A Room of One's Own* (1929) as an influential evaluation of

the *Catalogue*'s operation in the world, both in terms of its physical format and the institutional structures that built up around it. Woolf's famous critique of the ideology of scholarship, which fictionalizes a visit to the British Museum, is actually derived in important respects from the library's approach to cataloguing, which highlighted the idiosyncrasies of alternative classed catalogues and their potential to distort literary history. In the final analysis, Woolf's essay underscores the transformative, even radical features of Panizzi's work.

The manuscript catalogue that took initial shape in the 1830s and constituted the primary index for the British Museum Library's print collections for more than fifty years was the collective labor of hundreds of individuals, but its genesis and development was so closely identified with Panizzi's tenure that it is generally seen as his work. It had an extremely difficult birth: the catalogue's runaway costs and ever-expanding time to completion were a regular subject of newspaper editorials and helped launch two parliamentary inquiries. By mid-century these problems made the catalogue notorious, and this notoriety made Panizzi a national figure. More than cost and time, the challenge that Panizzi faced in the general catalogue was to devise a dynamic organization that could both coordinate the existing collection of printed books and absorb the rapid influx of new works. The physical challenge of locating a book within miles of shelving encouraged the catalogue to become more interactive, more explicit in its coordination of book location, retrieval, and expansion. From the 1840s, as Panizzi and his librarians honed innovative bibliographic techniques and addressed unforeseen challenges, the ultimate printing of the *Catalogue of Printed Books in the Library of the British Museum* evolved from a purpose to a notional goal. Panizzi successfully resisted a printing of the *Catalogue* under his tenure.[12] The ultimately successful effort to print was only undertaken after his retirement, and issued in a series of forty-eight volumes from 1881 to 1900. The printed catalogue gave a time-bound snapshot of a dynamic bibliographic system that transformed the spatial, administrative, and material distribution of the British Museum Library, and permanently changed how the collections were understood. As the print edition, the general catalogue came to be known as "GK1" internally, in reference to later catalogues ("GK2" and "GK3") produced by the Department of Printed Books, but this is a misnomer as applied to the catalogue that developed under Panizzi, which existed exclusively in manuscript in order to take advantage of the flexibility of that format.

Alternately perceived as the tyrant and presiding genius of the library, Panizzi was both a singularly effective librarian and, to some, a profoundly abrasive man. When he refused to give Thomas Carlyle special privileges in the King's Library, the incensed "Sage of Chelsea" resolved to organize and establish his own private institution, the London Library, which still stands in St. James's Square.[13] In addition to a public feud with patron Sir Nicolas Harris, and a long-running dispute with John Edward Gray, the museum's keeper of zoology, Panizzi had police eject the son of the chief librarian, Richard Ellis, for shouting at him, and was later called before the Board of Trustees for a reading room dust-up with a member of Parliament.[14] Panizzi's biographers (who have generally come from the ranks of the museum) shrug at these many disputes, but they all feature his refusal to acknowledge privilege of access to the library's materials.[15] Panizzi was a former Sicilian radical who had campaigned for popular rule. After emigration, he was condemned to death *in absentia* for his criticisms of Francesco IV.[16] A liberal who believed that civil law should check privilege, Panizzi effectively politicized the strict enforcement of library protocol. And this ruling passion for unambiguous and consistently enforced policy is evident in his contributions to what he described as "a catalogue worthy of this institution."[17]

The nineteenth-century British Museum was an institution in rapid flux, subject to the centripetal and centrifugal tensions of its disparate collections. After 1800, and with growing support from Parliament, it entered an expansive era of collection, amassing a range of antiquarian, archeological, and bibliographic artifacts. With the accession of the George III and Grenville libraries, the institution transformed from a single building containing Sir Hans Sloane's natural history specimens, the Hamilton antiquities, a library, and prints, to the separate institutions that stand today as the British Museum, the Natural History Museum, and the British Library. By 1900, the collection space expanded from the roughly 40,000 square foot Montagu House to the more than 200,000 square feet of the quadrangle building and circular reading room—a number that excludes the newer natural history building recently finished in South Kensington (Figure 1). By the close of the nineteenth century, the library collections alone, which roughly doubled every twenty years, contained 44 miles of shelving with more than two million books.[18] The divorce of the British Museum's key departments is an important product of the centrifugal forces generated by vast enterprises of collection. In the British Museum's case, division was the product of internal wrangling over distinct institutional demands for space and funding, but more generally, the separation was a consequence of trying to organize dis-

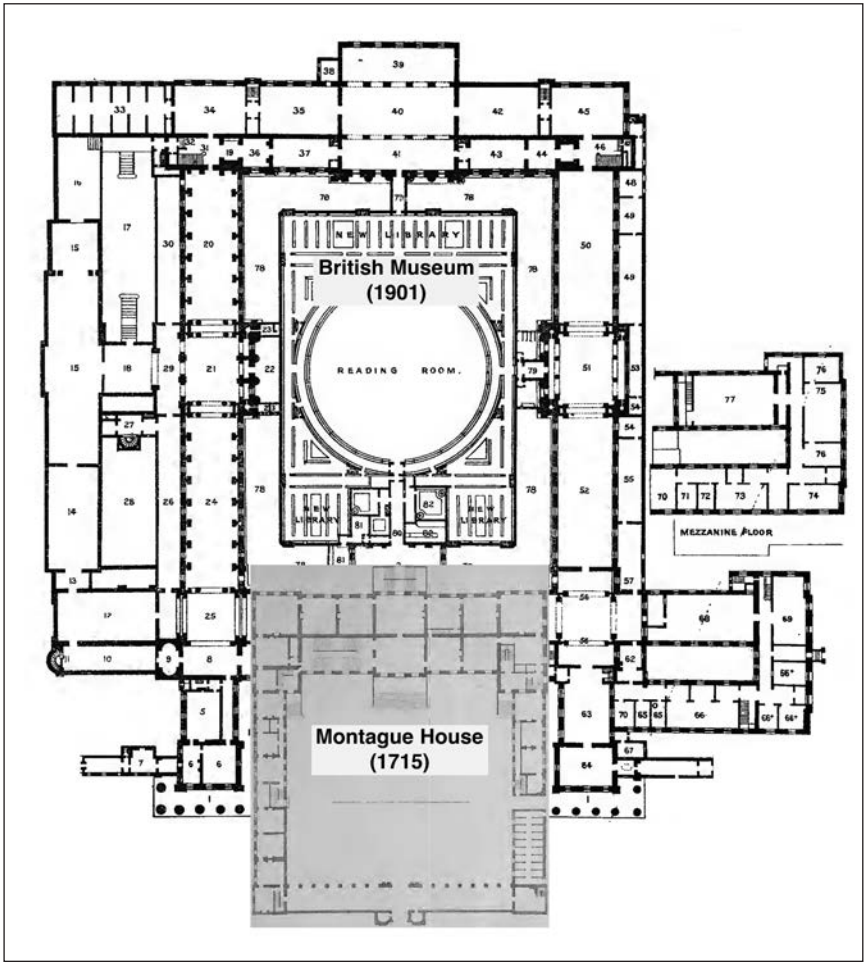


Figure 1. Evolution of the British Museum. Images adapted from the British Museum's *A Guide to the Exhibition Galleries of the British Museum (Bloomsbury)* (1901) (digital image courtesy of Cornell University, Microsoft, and the Internet Archive); and Collin Campbell's *Vitruvius Britannicus* (1715), vol. 1, figure 34 (digital image courtesy of the Getty's Open Content Program and the Internet Archive).

tinct collections meant to be used by distinct groups of visitors from around the world. Anatomists, numismatists, and paleographers (to recognize only a few fields) were part of an international conversation regarding the organizing schemes appropriate to distinct archives—and the strategies that worked for one class of items often did not translate to another.

When Panizzi joined in 1831 there were two primary catalogues; a general catalogue compiled by Henry Ellis and H. H. Baber (1813–19), and a separate printed catalogue of the King George III library, added with the collection's accession in 1823. Items were added to the general catalogue on interleaved manuscript pages; by 1834, the seventeen volumes of the original printed set of the Ellis and Baber catalogue had grown to 40 interleaved large folios.[19] Items were listed under a single heading, with sporadic crossreferencing. Most problematically, anonymous works were listed under an important title word selected by whichever cataloguer added the accession. By the early 1830's, the dire need for a new catalogue initiated a major revision, but it was soon apparent that the new version of the catalogue would take longer than its predecessor. When work on the new catalogue resumed in 1837 (it had been suspended for a laborious hand transcription of the haggard Ellis catalogue), Panizzi was placed in charge, and he soon convinced the museum's board of trustees that the library required a more consistent cataloguing system. The old cataloguing scheme had relied upon 16 rules drawn up by Ellis and reinforced with a variety of ad hoc adaptations and unrecorded conventions. In 1839 Panizzi and his staff drew up a revised 91-rule system that radically revised Ellis's approach; standardized orthography; developed consistent entries for anonymous works, collective entities like the Royal Society, and periodical publications; and incorporated specific rules for crossreferencing by author and works.[20] The new rules developed the novel convention of rendering translations of foreign titles in parenthesis and curatorial insertions in brackets. The rules also innovated in identifying associations as a corporate entity tied to geography, in part to address the duplication of names for such societies and their publications. Bacon's 1620 *Instauratio Magna* would still be listed under Bacon, but the Royal Society's *Philosophical Transactions* of 1670 was located under Academies, Great Britain, London, Royal Society, Philosophical Transactions.[21] The 1813+ Ellis catalogue understood itself as a list of the printed items in the library; the new catalogue would specify their place within the larger universe of printed works, organized by geography and time as well as title and author. The 91 Rules were a "landmark in the history of library cataloguing," influencing a generation of classification systems that were foundational to later cataloguing systems in both Britain and America.[22]

They also generated considerable controversy among library users and bibliographic experts who saw no need for Panizzi's elaborate and time-intensive approach. In 1847 the antiquarian Sir Nicolas Harris, a frequent user who had already scuffled with Panizzi, carped anonymously about the new system in the pages of the *Spectator*:

> [A] correct printed list of a great Library is indispensable for its use . . . [but] what the Public requires, in the first instance at least, is simply a *practical* Catalogue, having the titles or authors' names placed in alphabetical order, and not a Catalogue formed upon so abstruse a plan as to require *ninety-one* rules for its construction; most, if not all, of which rules, must be committed to memory, before any person can be aware under what head he will find even the commonest book in our language.[23]

For Harris, a "practical" catalogue was an organized list, and his sharply critical tone registered his bewildered sense that this new catalogue was something different. The 91 rules articulated a radically different understanding of how volumes should be organized through explicit and non-arbitrary conventions. It provided a window into a world of informatic cross-pressures alien to the familiar bibliographic world Harris knew. Yet for other library users, the general catalogue's departure from convention gave special value. Panizzi's friend, the mathematician Augustus De Morgan, wrote a letter of support to the *Athenaeum* as "A Lover of Old Books," defending the value of a comprehensive and detailed catalogue.[24] In contrast to a "*finding Catalogue* [that] is merely part of the library," a true "*literary catalogue*," containing a "full and *accurate* description of books," provided value independent of the physical collection it described. A "literary" catalogue "would, in fact, be of more use than ever if the library were to be burnt to the ground."[25] This was not an abstract concern. Fires had caused anxiety since the Library of Alexandria; only three years after De Morgan's letter, the American Library of Congress lost two thirds of its collection in a major conflagration. On Harris's account, a "practical catalogue" excludes any information extrinsic to the purpose of locating a specific volume within a library (though Harris does not seem to appreciate that, like the earlier Baber and Ellis catalogue, that simplicity depended upon unstated conventions and idiosyncrasies in practice). If its library was destroyed a practical catalogue would be worthless. De Morgan recognized, by contrast, that the catalogue could be (and already was) more than an indexical list of a collection of material objects, because it represented a description of what books were and how they related to each other in the world—an entity that transcended its collection.[26] For this reason a catalogue should be "literary," explicitly setting out a broader description of what the books are, where they come from, and how they relate to common features like format, geography, authorial identity, and time.

By making these other relationships explicit, this "literary catalogue" could have extraordinary impact, as demonstrated by contemporary efforts in natural history. The radical new theories of biological and geological history that emerged in the nineteenth century developed in close coordination with transformative cataloguing projects.[27] Like their bibliographic analogues, natural history catalogues served in the first instance as a comprehensive index to types and specimens. But an important secondary function was that decisions regarding organization and classification motivated new theories to account for their natural interrelationship. Charles Darwin, as he worked on his developmental theories, spent nearly a decade in the late 1840s and early 1850s producing an immense studious index of virtually all living and fossilized specimens of barnacles.[28] In consequence, *The Origin of Species* (1859) argued that the problem of classification, a focus of contemporary cataloguing efforts, demonstrated the problem of putatively stable distinctions that actually captured species in flux. Darwin notes, for instance, that the *London Catalogue of British Plants* (4th ed., 1853) treats species and varieties as stable categories when, by its own measures, they are often interchangeable.[29]

Though it specifically avoided classifying books in terms of natural kinds, the debate between De Morgan and Harris demonstrates that the British Museum Library's *Catalogue* evolved beyond a strict index into a new theory of bibliographic order. Rather than "literary," this embedded theory of order can more accurately be described as an "ontology," as understood in library and information science and in machine learning. A general definition for ontology, in the sense I mean here, is "an explicit specification of a conceptualization," where "conceptualization" is taken to mean "an abstract, simplified view of the world that we wish to represent for some purpose."[30] Ontologies specify how the components of a representation of the world relate to each other. They are often both classificatory and descriptive—that is, they often both specify the relationships between elements and function as a description of how those elements relate in the world.[31] This vocabulary highlights an important feature of the debate over Panizzi's classification, which explored how decisions with respect to classification and formatting could project a sense of how books relate to each other and to the larger world.[32]

A classic example of ontology that can help clarify the principles of Panizzi's catalogue can be seen in the contrast between Yahoo's original approach to web search and Google's. If you go to http://directory.yahoo.com, you will see how Yahoo used to organize the websites of the world: as a

hierarchical, nested relationships that categorized and subcategorized all indexed sites. This required individual website analysts (ontologists) to locate where each website belonged, while adjusting the larger system of categories to make it all fit together. This presented clear problems. For instance, some categories needed to show up under multiple headings in order to be found in the different locations within the hierarchy where users might look. In the case of "Libraries," there are listings under both "References" and under "Arts & Humanities." As Clay Shirkey describes it, "When you go to Literature—which is part of Humanities, not Entertainment—you are told, similarly, that booksellers are not 'really' there. Because they are a commercial service, booksellers are 'really' in Business."[33] A more sympathetic take is given by John Unsworth, who notes that such "foolish consistency" is a constant challenge of applied ontologies, because they are forced to adapt to situations that are not anticipated by their explicitly simplified representation of their world. [34] Google, by contrast, performs search through automated or "naïve" algorithms that evaluate the rank of a given search response as a product of value and meaning: it calculates value by testing the number and quality of crosslinks from other pages to each indexed website, and interprets meaning by running that site's content through a semantic model that describes how the specific words on the page relate to the other words used on the web.[35] For Shirkey, this is evidence that Google's success is built upon a semantic and link-based model in place of an ontology, but this is strictly inaccurate. Google's algorithms work because they are based on a more basic ontology, developed by groups like the World Wide Web Consortium and the Internet Engineering Task Force, that specifies how standard elements of the internet ranging from domains to hyperlinks are formatted and organized in relation to each other. Neither Yahoo's directories nor Google's "naïve" search algorithms would function without a more basic and more sparse ontology that establishes standards for the information they then organize. This is true for everything from web searches to the optical character recognition that makes Google Books searchable.

This insight into the formative value of an lightweight ontology, drawn here from LIS and computer science, helps to pick out a key emphasis in the nineteenth-century *Catalogue of Printed Books*, and in particular its 91 rules, which answered the need for a simple but explicit ontology that would unambiguously specify how books would be organized. From the perspective of the nineteenth century, this basic ontology might be more accurately described as a system for organizing knowledge, but I wish to hold on to the inference that strategies of organization not only structure the

world they organize but make statements about which relationships matter and how they intersect. The new catalogue was designed to make the classification of books entirely explicit and based upon eminent features of the books themselves. In figuring out how to organize the entries of the new catalogue, Panizzi and his collaborators devised new strategies for discriminating between and ranking overlapping relations of authorship and identity. Though largely an alphabetic catalogue based upon the names of the authors, like the Ellis catalogue before it, formulas had to be developed to deal with anonymous works, works produced by collective groups like societies, and works produced serially, in particular periodicals. All of these competing ways to organize entries had to be ranked and assembled, and this ranking carried over into the prioritization of bibliographic data in the entries themselves, as well as in the extensive crossreferencing. The resulting catalogue was largely purged of the idiosyncrasies and "foolish consistency" of a subject-based "classified" order, which had shaped the initial organization of materials in the British Museum Library.[36] As Thomas Hartwell Horne pointed out in his 1825 *Outlines for the Classification of a Library* (produced at the request of the board of trustees and used both to prepare a separate classified catalogue, as well as to reorganize the physical stacks), the conventions of classed catalogues were largely developed in service of the browsers of private ecclesiastical libraries and bookseller's lists.[37] Browsing was precluded, however, by the shift to a public library that coordinated a massive number of items, and within which physical access to the stacks was forbidden.[38] From the reader's end, the only legacy of such classed schemes in the library was embedded in the pressmarks of the books themselves, added to the catalogue in the 1830s (which encoded the specific room, press, shelf, location along the shelf, and even item location within collected volumes).[39] Readers lacked the competence to translate pressmarks into the physical relation between works in the stacks, and the subject-based order that this spatial arrangement still expressed. The world of books produced by the catalogue was foreign to the physical collection it translated.

Perhaps most important was how the new organizing scheme elevated identity and publication place and time as the most important coordinates for thinking about the relationships between books. The first purpose of the classification scheme was to establish a unique and transparent location in the catalogue for each volume in the library—a foundation for both extensive additional crossreferencing and supplemental catalogues organized by subject. As Panizzi repeatedly emphasized, the unambiguous alphabetical

system was an essential condition for decades of crossreferencing labor.[40] Without a precise alphabetical location to "point" to, a crossreference from the "A" volume would be unable to point to a particular item in the "V" volume. The fuzzy boundaries of richer subject-based ontologies (the source of the "foolish consistency" dilemma which forces the cataloguer to place a work under one heading rather than another plausible alternative) would have made strict crossreference impossible. Restricted to features that could be explicitly identified—title, format, author, publication date and place—the catalogue ignores more problematic decisions about what the books contain, and the idiosyncratic, time-bound, and intellectual biases that such judgments entail.

A perhaps more consequential secondary effect of the ontology on which this classification rested was to elevate location, date, and format as crucial elements of a book's identity. Figure 2 is a page from the 1841 "first" volume, a sample printing that included the 91 rules and demonstrated how the new cataloguing system worked. The example demonstrates the profound effect of Panizzi's 91 rules, which organized publications by societies and associations geographically. In this fashion, terrestrial space became central to the ontology that organized the museum's collections. Moreover, as was emphasized by the typesetting's declension of large capitals into italics and small caps, this spatial imagination was itself organized hierarchically by continental, regional, national, and state relationships. The most specific geographical designation, the city of publication, is removed from these large nested relationships, and given with publication date and format at the close of each entry. In part, this was a nod to the conventional bibliographic role of publication place in catalogues, and it also recognized the independence of the location authorial identity and the physical site where a work is printed. But this convention also places weight upon publication place, along with year and format, as central to the identity of editions. This important function is reinforced by the new layout, which aligned place, date, and format with the right margin of the column, and at the end of each item entry. From this position, the instance of publication becomes a counterpoint to authorial identity, allowing two regimes of scanning, either by author and title, or by time, place, and material form.[41]

Yet the printed 1841 sample volume does not document the MS slip catalogue that the vast majority of patrons encountered in the nineteenth century. The 1841 volume, which only covered the letters A-Azz, was printed as part of an early attempt to meet the December 1844 deadline set by the trustees after difficulties developing a new catalogue in the 1830s. It demonstrated that it was impossible to print on a volume by volume basis,

20 ACADEMIES, *ETC.*

ACADEMIES, LEARNED SOCIETIES, UNIVERSITIES, &c.

See Reuss (J. D.). Repertorium commentationum a societatibus literariis, *etc.* 1801—21. 4°

Acta academica, præsentem academiarum, societatum litterariarum, gymnasiorum et scholarum statum illustrantia . . . 1733—37. *Lipsiæ*, [1734—38]. 4°

AMERICA, ASIA AND EUROPE.

Memoirs of science and the arts, or an abridgment of the transactions published by the principal learned and œconomical societies established in Europe, Asia, and America. Vol. 1, pt. 1. *London*, 1793. 4°

AMERICA.

BARBADOES.

See Europe—*Great Britain and Ireland—Colonies—Barbadoes*, inf.

UNITED STATES OF AMERICA.

ALBANY—*NEW YORK.*

Board of Agriculture of the State of New York.
Memoirs. Vol. 2, 3. *Albany*, 1823—26. 8°

BOSTON—*MASSACHUSETTS.*

American Academy of Arts and Sciences.
Memoirs. Vol. 1. *Boston, U. S.* 1785. 4°
New series. Vol. 1. *Cambridge, U. S.* 1833. 4°

American Education Society.
Nineteenth annual report; with the constitution and rules of the society. *Boston, U. S.* 1835. 8°
Quarterly register and journal. Conducted by E. Cornelius and B. B. Edwards. Vol. 2, 4. *Andover* and *Boston, U. S.* 1830—32. 8°

American Institute of Instruction.
The lectures delivered before the American institute . . . in Boston, August, 1836, including the journal of proceedings and a list of the officers. Published under the direction of the board of censors. *Boston, U. S.* 1837. 8°

Massachusetts Historical Society.
Collections. First series. 10 vol. *Boston and Cambridge, U. S.* 1792—1809. 8°
Second series. 10 vol. *Boston, U. S.* 1815—23. 8°
Third series, vol. 1—6. *Cambridge, U. S.* 1825—37. 8°

Massachusetts Society for promoting Agriculture.
Inquiries by the agricultural society. *Boston, U. S.* 1800. 8°
Another copy.
Papers on agriculture, consisting of communications made to the Massachusetts' society . . . with extracts from various publications, recommended to the attention of farmers, by the trustees of the society. Vol. 1—5. [With the premiums offered by the society, abstracts of the accounts and list of the members.] *Boston, U. S.* 1799, 1804, [5]. 8°

Massachusetts Society for promoting Agriculture.
Another copy. Vol. 2.
Rules and regulations . . . . containing several important communications, *etc.* By the trustees. *Boston, U. S.* 1796. 8°

CAMBRIDGE—*MASSACHUSETTS.*

American Academy of Arts and Sciences.
Memoirs. New series. Vol. 1. *Cambridge, U. S.* 1833. 4°
Another copy.

American Antiquarian Society.
Archaeologia Americana. Transactions and collections. Vol. 1, 2. *Worcester* and *Cambridge, U. S.* 1820—36. 8°

Harvard University.
♔ Catalogus eorum qui in universitate Harvardiana, Cantabrigiæ, in republica Massachusettensi, ab anno 1642 ad 1782, alicujus gradus laurea donati sunt. *Boston, U. S.* 1782. 8°
♔ Catalogus, *etc.* 1642 ad 1791. *Boston, U. S.* 1791. 8°
A catalogue of the officers and students of Harvard university, for the academical year 1833, 34. *Cambridge, U. S.* 1833. 12°
♔ Laws of Harvard college. *Boston, U. S.* 1790. 8°

CINCINNATI—*OHIO.*

Western Literary Institute.
Transactions of the fourth annual meeting of the western literary institute, and college of professional teachers. *Cincinnati*, 1835. 8°

MASSACHUSETTS—*STATE OF.*

See Boston. Cambridge, sup.

NEW YORK—*NEW YORK.*

College of Physicians and Surgeons.
Charter. *See* Medical Society, inf. Report. 1807. 8°

Literary and Philosophical Society.
Transactions. Vol. 1. *New York*, 1815. 4°

Lyceum of Natural History.
Annals. 2 vol. *New York*, 1824—28. 8°

Medical Society.
Report and address, delivered by the president; together with the charter of the college of physicians and surgeons in the city of New York. *New York*, 1807. 8°
Another copy.

New York Historical Society.
Collections . . . . . for the years 1809, 14, 21, 26, 29. 5 vol. *New York*, 1811—29. 8°
Vol. 4 and 5 comprise "The history of the late province of New York, from its discovery, &c. By the Hon. William Smith."

New York Society.
Alphabetical and analytical catalogue of the library, with a brief historical notice of the institution, the original articles of association in 1754, and the charter and laws of the society. *New York*, 1838. 8°

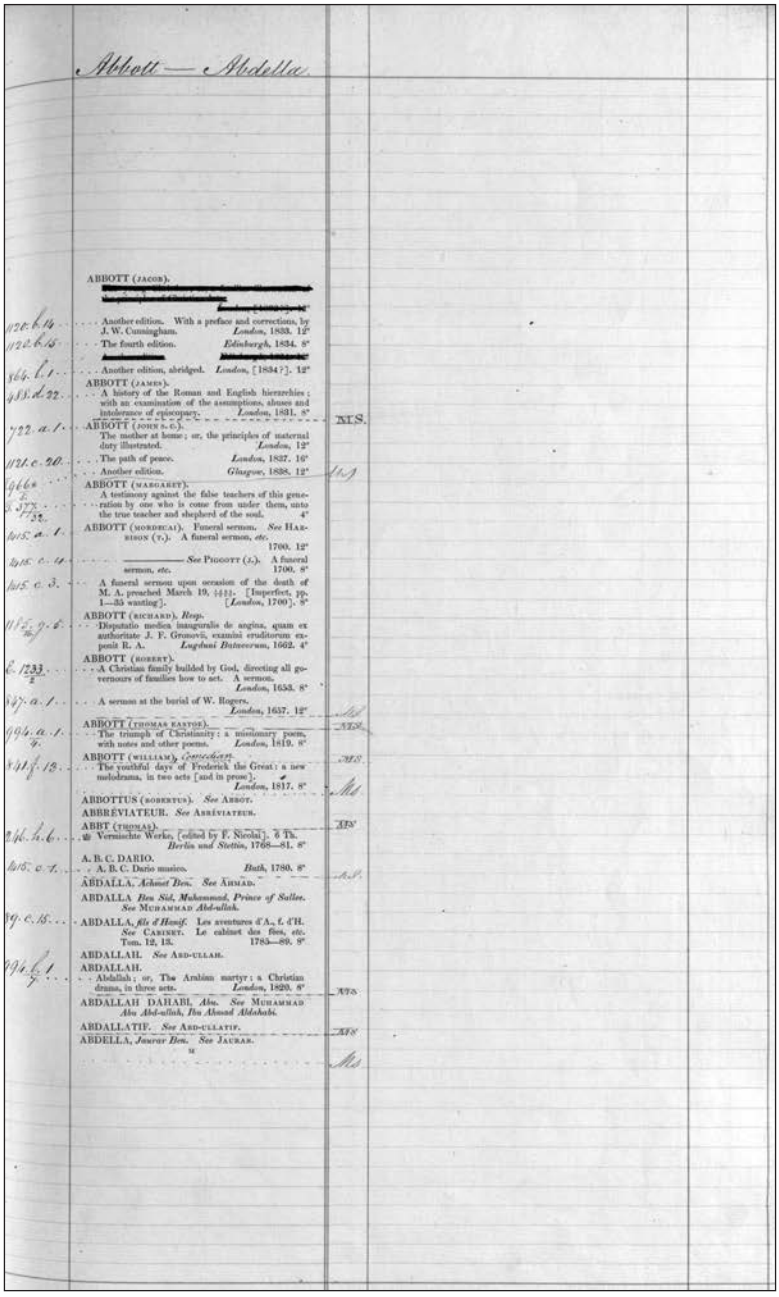
Society for the Promotion of Agriculture, Arts and Manufactures.
Transactions. Pt. 1, 2. *New York*, 1792—94. 4°
Second edition. Vol. 1. *Albany*, 1801. 8°

Figure 2. 1841 volume of the *Catalogue of Printed Books* (digital image courtesy of the University of Minnesota and Google Books).

because accurate crossreferencing was ruled out. Panizzi successfully resisted this piecemeal printing, emphasizing the inevitable errors that it would produce.[42] This launched an extended dispute with the trustees, and in 1850, with the 1844 deadline long past, a royal commission ruled in Panizzi's favor, and printing was halted for thirty years. From the 1840s until the completion of printing in 1900 (the longest tenure of any general catalogue to the library in the nineteenth century), Panizzi's catalogue existed as a collection of bound manuscript slip volumes that eventually numbered in the thousands. The manuscript catalogue was a transformative technology in its own right, rather than a stage in the printing of the GK1. At the same time, it is difficult to reconstruct, because the slips were destroyed as printing proceeded from 1881.

For this reason I was very excited to locate, with the help of the staff at the British Library, an unusual copy of the catalogue, absent from the library's online index. It consists of a second printing of the 1841 first volume, from the same setting, onto elephant folio sheets with ledger ruling, which are interleaved with additional elephant folio sheets which are similarly ruled, and bound in six volumes (Figure 3). It is one of three such working copies which, according to Chaplin, were used as the internal copy and duplicate shelf copies for users (the transcriber would alternate copies in the reading room in order to add accessions).[43] Numerous manuscript additions to the printed sheets correct errors and indicate the location of new accessions, which are then listed in bibliographic format on the following blank sheets (Figure 4). Shelf marks are noted by hand in a column to the left of each entry on both the printed and supplemental pages. The manuscript additions roughly double the number of entries. A comparison to the 1881 *Catalogue* shows that the printed and manuscript additions of these volumes together constitute around a quarter of the entries which were included in that printing, which supports the implication that these interleaved printed copies were phased out sometime in 1849, when the cataloguers switched entirely to a new system of carbon-copied slips.[44] Because all copies were updated at the same time, by the same cataloguers who added accessions to the manuscript slip catalogue, the manuscript entries of these volumes show how the slip catalogue was formatted.

The important point for this discussion is that the manuscript entries conserve the formatting of the 1841 catalogue, which differs from the format of the 1881 *GK* printing, by placing the shelf number to the left of the entry, while right justifying and isolating publication place (underscored for emphasis), date, and format in ultimate position. This convention presents



Abbott — Abdella.

ABBOTT (JACOB).
[redacted]
1120. b. 14 . . . Another edition. With a preface and corrections, by J. W. Cunningham. *London*, 1833. 12°
1120. b. 15 . . . The fourth edition. *Edinburgh*, 1834. 8°
[redacted]
864. l. 1 . . . Another edition, abridged. *London*, [1834?]. 12°
ABBOTT (JAMES).
988. d. 22 . . . A history of the Roman and English hierarchies; with an examination of the assumptions, abuses and intolerance of episcopacy. *London*, 1831. 8°
NTS.
ABBOTT (JOHN S. C.).
722. a. 1 . . . The mother at home; or, the principles of maternal duty illustrated. *London*, 12°
1120. c. 20 . . . The path of peace. *London*, 1837. 16°
. . . Another edition. *Glasgow*, 1838. 12°
ABBOTT (MARGARET).
A testimony against the false teachers of this generation by one who is come from under them, unto the true teacher and shepherd of the soul. 4°
1015. a. 1 . ABBOTT (MORDECAI). Funeral sermon. *See* HARRISON (T.). A funeral sermon, *etc.* 1700. 12°
1015. c. 4 . . . ——— *See* PIGOTT (J.). A funeral sermon, *etc.* 1700. 8°
1015. c. 3 . . . A funeral sermon upon occasion of the death of M. A. preached March 19, ⅓⅓. [Imperfect, pp. 1—33 wanting]. [*London*, 1700]. 8°
ABBOTT (RICHARD). *Resp.*
1175. g. 6 . . . Disputatio medica inauguralis de angina, quam ex authoritate J. F. Gronovii, examini eruditorum expendit R. A. *Lugduni Batavorum*, 1662. 4°
ABBOTT (ROBERT).
E. 1233 . . . A Christian family builded by God, directing all governours of families how to act. A sermon. *London*, 1653. 8°
847. a. 1 . . . A sermon at the burial of W. Rogers. *London*, 1657. 12°
ABBOTT (THOMAS EASTOE).
994. a. 1 . . . The triumph of Christianity: a missionary poem, with notes and other poems. *London*, 1819. 8°
ABBOTT (WILLIAM). *Comedian.*
811. f. 18 . . . The youthful days of Frederick the Great: a new melodrama, in two acts [and in prose]. *London*, 1817. 8°
ABBOTTUS (ROBERTUS). *See* ABBOT.
ABBRÉVIATEUR. *See* ABRÉVIATEUR.
ABBT (THOMAS).
246. h. 6 . . . Vermischte Werke, [edited by F. Nicolai]. 6 Th. *Berlin und Stettin*, 1768—81. 8°
A. B. C. DARIO.
1015. c. 1 . . . A. B. C. Dario musico. *Bath*, 1780. 8°
ABDALLA, *Achmet Ben.* *See* AHMAD.
ABDALLA *Ben Sid, Muhammad, Prince of Sallee.* *See* MUHAMMAD *Abd-allah.*
39. e. 18 . . . ABDALLA, *fils d'Hanif.* Les aventures d'A., f. d'H. *See* CABINET. Le cabinet des fées, *etc.* Tom. 12, 13. 1789—89. 8°
ABDALLAH. *See* ABD-ULLAH.
ABDALLAH.
994. b. 1 . . . Abdallah; or, The Arabian martyr: a Christian drama, in three acts. *London*, 1820. 8°
ABDALLAH DAHABI, *Abu.* *See* MUHAMMAD *Abu Abd-allah, Ibn Ahmad Aldahabi.*
ABDALLATIF. *See* ABD-ULLATIF.
ABDELLA, *Jawar Ben.* *See* JAURAR.

Figure 3. Printed page from the ruled working copy of the post-1841 *Catalogue* (©British Library Board, L.R.419.bb.4, used with permission).

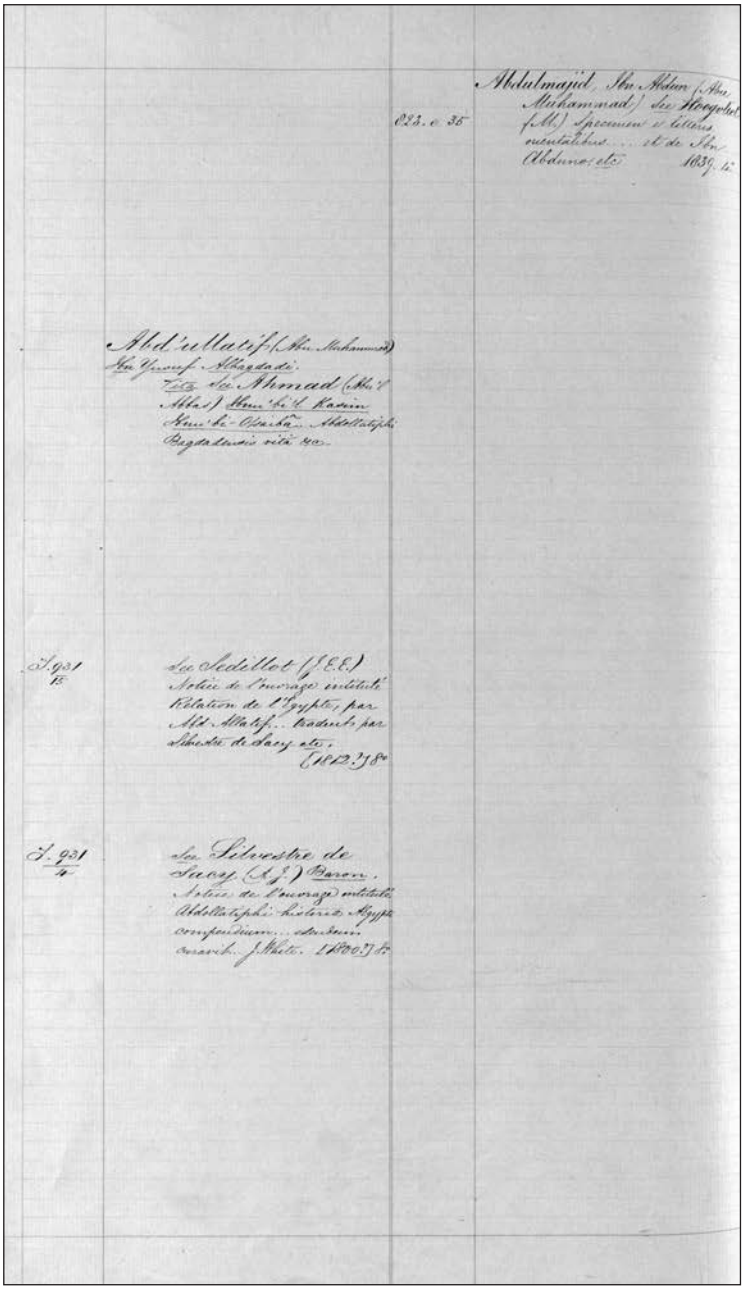


Figure 4. MS page from the ruled working copy of the post-1841 *Catalogue* (©British Library Board, L.R.419.bb.4, used with permission).

books to the user as they are embedded in geographical space and historical time. When we move down the page and across the volumes of the general catalogue, the coordinates of time and space in the right margin map a history that organizes the arbitrary order exhibited by the alphabetic lists and shelf marks to the left. In this fashion, the general catalogue of the British Museum library helped expand our view of book publishing as a process dispersed through history.

Panizzi's catalogue opened the library as a transformative technology. This transformation extended to the institutional systems that supported its function. Starting in the 1830s, the slip catalogue slowly consumed the 1813 Ellis catalogue, known as the "Supplementary catalogue" (already entirely in manuscript form from 1837) and added new accessions. A team of two dozen clerks continually transcribed, retranscribed, rebound, and relocated the volumes as the catalogue grew. Each new slip would contain three entries, with room for two more. When a slip with five entries required an addition, the entries would be rebalanced; clerks divided the references into two separate slips with three entries each. By the 1860s, the catalogue coordinated the actions of nearly a hundred staff members, who actively added recent accessions, combed through the shelves to add uncatalogued titles, checked the general catalogue against the copyright list for works not already submitted for deposit (under Panizzi the library and its solicitors sent regular notices to publishers enforcing compliance with legal deposit), attended auctions to add to the historical collections, combed through bequests like the Thomas Grenville library, located shelving for new volumes and pressmarked them, recorded new items in carbon copies for the internal librarian's catalogues and in interleaved additions to the catalogues for the reading room (moving other items and adding leaves as necessary, removing and replacing worn out slips in all), all the while exchanging around 500 volumes a day for the handwritten request tickets filled out by library patrons and directly supervising the use of rare books.[45]

The technology supporting the catalogue also made it unwieldy: by 1880 the manuscript general catalogue contained around 2,500 volumes.[46] Yet the small army of clerks who maintained the catalogue made it powerfully dynamic and adaptable, continually updated and constantly available for the operations of its users and the internal workings of the library. Configured as an exclusively manuscript system, the catalogue was perhaps the most up to date and comprehensive index in the world. It grew daily, and the interleaved additions meant a searcher did not have to consult supplementary volumes. For this reason, it was an influential precursor to the card

catalogue, eventually adopted at most libraries.[47] It is for this reason that Panizzi, early on convinced that the manuscript catalogue was superior to a time-bound print edition, pushed for a permanent manuscript format, and successfully blocked printing.[48] Figure 5 pictures this system.

The general catalogue was peculiarly fluid in nature, an unstable but organized system that continually adapted to and shaped the collections and researchers that it served. It was a dynamic representation *of* the collection, *for* its users, both patrons and staff. It was clear to contemporaries that the catalogue relied on a paradoxical balance between a steady state and constant change. One 1847 defense presented in the *Athenaeum* (a periodical generally critical of Panizzi) argued that the new manuscript catalogue scheme was necessary because "imperturbable order must be reconciled with perpetual motion."[49]

It would be easy to find in this "imperturbable order," articulated through a central catalogue and a presiding archon who coordinated the imperial periphery of book production, a figure for the "imperial archive." Panizzi's aggressive enforcement of the right of deposit in the various publishing centers of the larger United Kingdom, his prioritization of a manuscript catalogue—useful only to patrons of the British Museum Library—at the expense of a printed catalogue that would be invaluable to other libraries and institutions, register both a governing impulse of centralization and Panizzi's conviction that the British Museum Library should be the chief library of the nation.

Yet this impulse to centralize the records of printed books, particularly, in Panizzi's view, "every book that was printed either by Englishmen or in English or relating to England," represented an early ambition to a comprehensive record that inspired and eventually produced the *English Short Title Catalogue*.[50] This ambition understands the catalogue as a representation of a world of books, particularly its English subset, rather than simply a record of the specimens within the library itself. It is motivated by the recognition that a comprehensive map of that larger community would support research efforts that, by their nature, could not be anticipated. It served both an historical and documentary function, but also a constituting function, producing that collection in a single space where it could be explored. The dynamic and interactive features of the catalogue were important for this reason. Constantly revised and updated as an interface between patrons and the collection, to use the library was to be placed in contact with a world that was constantly coming into being. To read the catalogue this way is, admittedly, to hypostatize the manuscript catalogue at the expense

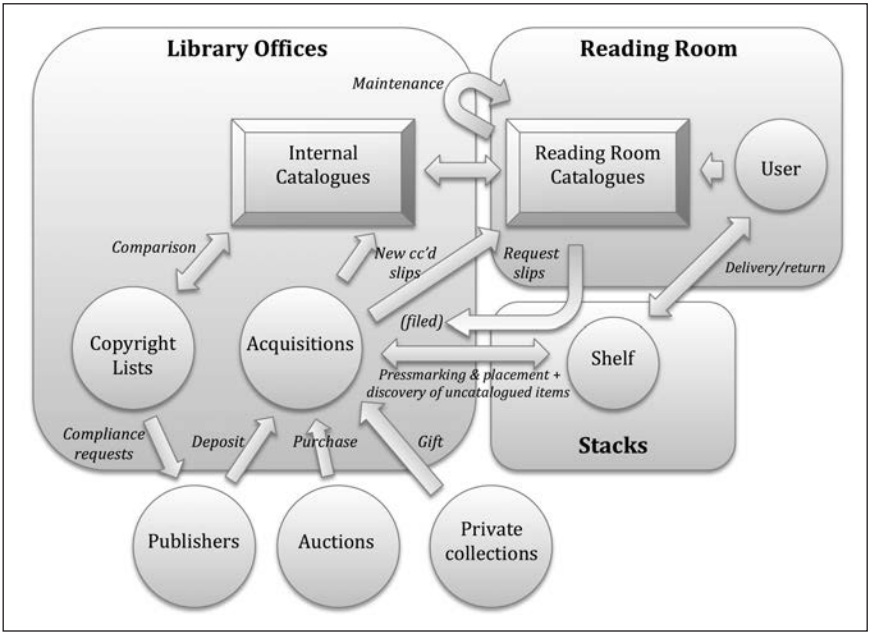


Figure 5. Catalogue operations.

of the print catalogue that superseded it. But it also takes seriously Panizzi's insistence that the manuscript format gave the catalogue a power that print could not. As a more dynamic, open system, the catalogue, rather than serving a disciplinary function, effectively liberalized the history of books and made unsettling features of that history both available and newly visible to the community of readers.

The radical implications of the catalogue are emphasized by a work that is usually read as a critique of the library and its catalogue: Virginia Woolf's *A Room of One's Own* (1929). Woolf's influential essay remains the most famous literary description we have of the British Museum Library and its reading room. The narrator dramatizes her complicated stance (as an authoress) toward the topic of "Women in Fiction" through a series of mise-en-scène. In the second part, she travels to the library, to consult, as she puts it "the learned and the unprejudiced, who have removed themselves above the strife of tongue and the confusion of body."[51] Once there, she "opened a volume of the catalogue" and is overwhelmed both by the sheer number of titles that deal with "Woman," and by the number of them written by men

(40). It soon turns out that the "learned" are anything but "unprejudiced." She orders eight works and scribbles down what she finds in her notebook, under the heading, in block letters, "Women and Poverty." Beneath this heading, she writes "something like":

> Condition in Middle Ages of,
> Habits in the Fiji Islands of,
> Worshipped as goddesses by,
> Weaker in moral sense than,
> Idealism of, . . . (43)

It is an infectiously sharp, funny, and unsettling scene, one of Woolf's most famous analyses of patriarchal power and its inscription in the apparatus of intellectual endeavor. Susan David Bernstein observes that Woolf's strategy, which construes the catalogue as an extension of a masculine academic sphere, reads across the current of an earlier generation of female readers, including Amy Levy, who celebrated the Library and its inclusive reading room as access points for "wide networks of knowledge, information and political action."[52] Woolf's essay is more generally taken as an accurate characterization of the library and its implications. From the 1990s it became a central locus for an approach to thinking about libraries and archives within modernist and women's and gender studies, under the particular influence of Foucault, de Certeau, and Derrida. Among them, Susan Gubar's *Rooms of Our Own* updates the scene of Woolf's essay in a fictionalized internet crawl that runs into countless works on men and masculinity that, nevertheless, seem to point to the same obtuseness that Woolf illustrates here.[53] Readers have long recognized, of course, that Woolf's essay is fictionalized. After all, it stages its first part in "Oxbridge"—that fictional amalgam of Oxford and Cambridge popularized by William Makepeace Thackeray in *Pendennis*. The essay indicates, moreover, that the fiction extends to the research the narrator performs. First she consults "a volume of the catalogue" without specifying which, and then for contrast she looks in "the letter M—" but not, explicitly, "Man" (41). It is only in her research notebook that these searches coalesce into "something like" a bibliographic entry, "Woman and Poverty," with the familiar index shorthand format that follows "Condition in Middle Ages of," etc.

This fictionalization is key because these entries were impossible in GK1. Despite the eminent status of *A Room of One's Own*, no one has noted that the essay treats the catalogue as if it were radically different work than it was.[54] A Bloomsbury resident, Woolf knew the library well, even if she

did not frequent it (she was a life member at the private London Library, where her father, Leslie Stephen, had been president).[55] And her description in *A Room* departs in marked ways from the actual configuration of references in the library. In the 1920s, the "catalogue" Woolf's narrator consults would have been the GK1, with the addition of three decennial supplements covering 1881–1910, and the lists of accessions, printed on a five-year basis. Per Panizzi's rules, the search Woolf's narrator describes, under either "Woman" or "Women," would not give books on that topic, but rather books with those terms featured in the title, as well as books attributed to "A Woman." The original printing of the GK1 contains 88 titles under "WOMAN" with 33 more under "WOMEN." Of those titles, less than a quarter identify the author, and of that fraction, fourteen are explicitly attributed to women, often either Louisa May Alcott, Dinah Craik, Charlotte Young, or "A Woman." In fact, the first two titles, "A Woman's Thoughts about Women" and "The Clever Woman of the Family," are by Craik and Young. Of the unattributed works, about a quarter are songs, and half novels, which, as Woolf would have known, meant that many of these additional titles also had female authors. Of the works attributed to men, only a handful have strikingly misogynist titles, for instance, "Any Woman will do for a man; or, a Warning for those about to marry" by "an old Bachelor." In the later additions and supplements, this picture changes marginally.

Instead, the notebook probably draws from the British Museum's *Subject Index of Modern Works*, first printed in three volumes covering 1881–1900, and then updated with additional volumes every five years.[56] The brainchild of G. K. Fortescue (and still referred to simply as "Fortescue"), the subject index was conceived after Panizzi's death as a way to respond to the problem of searching by subject in the catalogue. In the late nineteenth century, readers were forced to consult scattered bibliographies for help with specific topics, as well as library "placers" (like Fortescue), who were familiar with what works were grouped together in the subject-based shelves. When Fortescue was given the role of Superintendent of the Reading Room he set out to publish an index that would save this work.[57] The index that heads the entry on "Women" gives something like the outline that Woolf's narrator provides in her notebook (Figure 6). The further fact that entries, in addition to arrangement by subject, are grouped by publication year within subheadings, provides an important clue to the pointed question asked by Woolf's narrator: "Have you any notion of how many books are written about women in the course of one year?" (40). Only a modern supplement like Fortescue's index would group works by year like this; it would make no sense to do so for the full collection in a general catalogue.

912 WOMEN

WOMEN.—Rights and Emancipation.— *continued.*

HAAG (E.) Die wahre Emanzipation der Frau. pp. 61. *Berl.* 1895. 8°. 8415. ee. 49.

See also above, General and Political Works.

Woman in Literature and Art.

DECKER (F.) Über die Stellung der hellenischen Frauen bei Homer. pp. 38. *Magdeburg*, 1883. 4°. 11335. k. 7. (2.)

PERRY (W. C.) The Women of Homer. pp. 242. *Lond.* 1898. 8°. 11335. ee. 32.

BENECKE (E. F. M.) Antimachus of Colophon and the position of Women in Greek Poetry. pp. 256. *Lond.* 1896. 8°. 11312. n. 4.

BRUCHMANN (K.) Ueber die Darstellung der Frauen in der griechischen Tragödie. pp. 32. 1882. 8°. VIRCHOW (R.) Sammlung wissenschaftlicher Vorträge. Ser. XVII. 12249. l.

BALLOU (M. M.) Notable thoughts about Women. pp. 409. *Bost.* 1882. 8°. 12705. i. 14.

GUERRA (L. F.) La Donna e il romanzo. pp. 23. *Napoli*, 1884. 8°. 11840. k. 42. (6.)

TANINI (F.) La Donna secondo il giudizio dei dotti e dei proverbi di tutti i popoli. pp. 479. *Prato*, 1884. 8°. 8416. cc. 34.

GEIGER (L.) Dichter und Frauen. pp. 384. *Berl.* 1896. 8°. 010707. f. 43.

MARHOLM, afterwards HANSSON (L.) Wir Frauen und unsere Dichter. pp. 218. *Wien*, 1895. 8°. 011824. e. 79.

—— We Women and our Authors. An English rendering by H. Ramsden. pp. 215. *Lond.* 1899. 8°. 011851. de. 64.

MONKSHOOD (G. F.) *pseud.* Woman and the Wits. Epigrams. pp. 174. *Lond.* 1899. 8°. 08416. ff. 24.

KRABBES (T.) Die Frau im altfranzoesischen Karls-Epos. pp. 84. 1884. 8°. STENGEL (E. M.) Ausgaben aus dem Gebiete der romanischen Philologie. Pt. 18. 11498. i.

NEFF (T. L.) La Satire des Femmes dans la poésie lyrique française du moyen âge. pp. 118. *Paris*, 1900. 8°. 011852. k. 21.

MICHELANGELI (M. P.) La Donna nella Divina Commedia. pp. 102. *Messina*, 1898. 8°. 11421. d. 25.

GENÉE (R.) Klassische Frauenbilder von Shakespeare, Lessing, Goethe und Schiller. pp. 222. *Berl.* 1884. 8°. 11840. cc. 50.

MARTIN (H.) *Lady.* Shakespeare's Female Characters. pp. 443. *Edinb.* 1885. 8°. 11765. ff. 19.

LEWES (L.) Shakespeares Frauengestalten. pp. 409. *Stuttg.* 1893. 8°. 11766. c. 46.

JAMESON (A. B.) Shakspeare's Heroines. Characteristics of Women. pp. 331. *Lond.* 1897. 8°. 11765. b. 55.

BURGGRAF (J.) Schillors Frauengestalten. pp. 490. *Stuttg.* 1897. 8°. 011851. g. 12.

BALZAC (H. de) La Femme et l'amour d'après H. de Balzac. pp. 295. *Paris*, 1888. 12°. 8415. ccc. 39.

BOCCARDI (A.) La Donna nell'opera di H. Ibsen. pp. 51. *Milano*, 1893. 8°. 011824. f. 67. (8.)

GILLILAND (M. S.) Ibsen's Women. pp. 32. *Lond.* 1894. 4°. 011824. f. 66. (4.)

BERGEMANN (P.) Die werdende Frau in der neuen Dichtung. pp. 51. *Leipz.* 1898. 8°. 8416. h. 33. (1.)

CIBCHETTI (G.) Per l' arte contro la Donna. pp. 79. *Bolog.* 1885. 8°. 8416. aa. 52.

CLARK (A.) Paper on Art and the New Woman. pp. 26. *Uitenhage*, 1897. 8°. 7807. bb. 30.

WOMEN—*continued.*

Professions and Work.

General.

GENNA (E.) Irresponsible philanthropists: chapters on the employment of Gentlewomen. pp. 128. *Lond.* 1881. 8°. 8275. aaa. 16

HILL (A. H.) Business Aspects of Ladies' Work. pp. 12. *Lond.* 1881. 12°. 8277. aa. 13. (5.)

CHURCH (E. R.) Money-making for Ladies. pp. 221. *N.Y.* 1882. 8°. 8416. b. 44.

HUBBARD (L. M.) The Englishwoman's Year-Book. pp. 215. *Lond.* 1882. 8°. 8416. c. 19.

HUTH (A. H.) Employment of Women. pp. 40. *Lond.* 1882. 8°. 8416. ccc. 23. (2.)

GROGAN (M.) How Women may earn a Living. pp. 120. *Lond.* 1883. 8°. 8416. bb. 34.

KINGSBURY (E.) Work for Women. pp. 186. *Lond.* 1884. 16°. 8416. d. 36.

SELF-HELP, for Women. pp. 120. *Lond.* 1885. 8°. 8416. c. 34.

FRIEDLÄNDER (E.) Il lavoro delle Donne. pp. 138. *Roma*, 1886. 8°. 8275. g. 25.

HADLAND (S.) Occupations of Women other than teaching. pp. 14. *Lond.* 1886. 8°. 8416. d. 32. (4.)

PFEIFFER (E.) Women and Work. An essay. pp. 186. *Lond.* 1887. 8°. 8416. dd. 9.

WORK AND LEISURE MANUALS. Work for Women Workers. *Lond.* 1887, *etc.* 8°. 10351. ccc. 7.

GRAFFENRIED (C. de) Needs of self-supporting Women. pp. 10. 1890. 8°. Johns Hopkins University Studies Notes, 1890. No. 1. Ac. 2689.

KARSLAND (V.) Women and their work. pp. 166. *Lond.* 1891. 8°. 8416. dd. 43.

LADIES. Ladies at Work. Papers on paid employments for ladies. pp. 143. *Lond.* 1893. 8°. 8415. h. 31.

MERCIER (A.) Work and how to do it. pp. 178. *Lond.* 1891. 8°. 8415. de. 16.

CHAUVIN (J.) Étude sur les professions accessibles aux Femmes. pp. 296. *Paris*, 1892. 8°. 8416. g. 40.

BRISTOL. *Ladies' Association for the care of Girls.* Women workers. Papers. 2 pt. *Bristol*, 1893. 8°. 8416. g. 39.

HONE (A. M.) Woman's enterprise and genius. pp. 324. *Lond.* 1893. 8°. 8416. e. 31.

BULLEY (A. A.) and WHITLEY (M.) Women's work. pp. 172. 1894. 8°. GIBBINS (H. de B.) Social Questions of to-day. No. 13. 08276. e.

GLIMPSES. A Lady's search for work about the world. pp. 201. *Lond.* 1894. 8°. 4767. d. 17.

BATESON (M.) Professional Women upon their professions. pp. 133. *Lond.* 1895. 8°. 8415. ee. 43.

DAHMS (G.) Der Existenzkampf der Frau im modernen Leben. 10 Hfte. *Berl.* 1895, 96. 8°. 8416. g. 46.

DONVILLE (F. de) Les Professions des femmes. pp. 388. *Paris*, 1895. 12°. 8416. ff. 9.

HARTT (I. W.) How to Make Money, although a woman. pp. 142. *N.Y.* 1895. 8°. 8416. df. 25.

STEWART (B.) Outlines of Business Knowledge requisite for Women. pp. 51. *Lond.* 1897. 8°. 08228. i. 6.

PHILIPPS (L.) A Dictionary of Employments open to Women. pp. 152. *Lond.* 1898. 8°. 08416. i. 5.

PRATT (E. A.) A Woman's Work for Women. pp. 132. *Lond.* 1898. 8°. 10827. de. 5.

Figure 6. "WOMEN" from Fortescue's *Subject Index of the Modern Works*, vol. 3 (1903) (digital image courtesy of Harvard University and Google Books).

Woolf may have consulted the GK1 for the lectures on "Women and Literature" that produced *A Room of One's Own*, but her description almost certainly draws from her experience with Fortescue (and perhaps also, the volumes of Wright and Purnell's *Subject Index of the London Library* 1909 & 1923). The narrator writes "Women and Poverty" in "block letters" because this reflects the gradated typography subject indices used to separate major from minor headings (as seen in Figure 6). Fortescue, from the beginning, contained subheadings both for "Women in Literature and Art" and for professional women in "Literature, Art and Science." By constructing the alternative category, "Women and Poverty," Woolf's narrator makes a dry joke about the challenge of establishing oneself as an authoress on one's own, but more broadly, creates the categorical space to pull together titles that address the history of the study of women. The implication of the essay is that her search pulls a "dozen volumes or so" that include discussions by Alexander Pope, La Bruyère, Dr. Johnson, and Johann Wolfgang von Goethe—but there was in fact no way to search for this longer history by subject at the British Museum, as Fortescue only covers books acquired after 1881. My point here is less that Woolf's narrator treats the dispersed literary history of GK1 as if it were classed like Fortescue's index (which she certainly does) than the important purpose this serves. By erasing the difference between two references that index (on the one hand) the entire collection and (on the other) its most recent accessions, and equating the corporate authorship of the museum with the individual authority of one of its servants, Woolf is able to construe the marginalization of women throughout print history as if continuous with their *fin de siècle* pathologization. The catalogue becomes the meeting place between studies of "*The Mental, Moral, and Physical Inferiority of the Female Sex*" and the lost history of "Judith Shakespeare"—the central object of the third portion of her essay. In practice Fortescue's index is fundamentally distinct from the GK1, and not just because of its distinct purpose, its individual authorship, or its accessory status. Fortescue relied for subjects on the language of the "current literature" itself, in an attempt to prevent idiosyncratic subject descriptions that had the effect of encoding contemporary bias. Panizzi's catalogue, by contrast, prevents indexers from considering anything but title, name, place, format, and year. It effectively forced the indexers to be "learned and unprejudiced" by constricting their field of judgment to elements of the title page.

The contrast between GK1 and Fortescue foregrounds a problem of ideological bias that Woolf turns to account. In order to make the pervasive

exclusion of female authorship clear, Woolf obscures how the catalogue's resistance to that purpose signals a resistance to directive ideology in general. Panizzi was less an antagonist of sexual bias than an irascible critic of bias in general—both social and intellectual. He argued, before a select committee of Parliament, that "I want a poor student to have the same means of indulging his learned curiosity, of following his rational pursuits, of consulting the same authorities, of fathoming the most intricate inquiry, as the richest man in the kingdom, as far as books go."[58] This liberal ambition has a quintessentially utopian strain, but it also hits an important conceptual note regarding intricacy. The *most* "intricate inquiries" interrogate the casual assumptions that a classed catalogue would enshrine. For this reason, the catalogue is more closely aligned with *A Room of One's Own* than the essay can admit.[59]

For these reasons, the *Catalogue of Printed Books* was a more radical agent than we have recognized. The possibility of radical issue is implicit in the coordinated design of the library and its catalogue. Ruth Holberman has explored how the reading room, as a public space that welcomed female intellectuals, helped writers like Woolf stage a shift from the public status of the female intellectual to the counter-public agency of explicit feminism.[60] Users including Woolf and Marx sat at radial banks of desks, radiating out from the circular cabinets of the catalogue at their center ("B" in Figure 7). Panizzi's role in designing the circular reading room for the quadrangle building is a famous chapter in the architectural history of the museum, and his attention extended to the design of the cabinets that housed the catalogue. Set at the center of the reading room, the manuscript catalogues skirted the supervisor's desk. Where some have seen the circular design of the reading room as panoptic—enabling the supervisor's strategies of surveillance and control—I see a space that conceives of the centralized catalogue as the primary interface between the library and the user. To move between catalogue and desk was to oscillate between the history of what had been written and repurposing that history to new ends. Never a room of one's own, Panizzi's reading room was designed to be *everyone's* room. His desire to make the "poor student" as comfortable as the "richest man" extended even to the climate. When Marx observed that the reading room was "the only cool place in London" it was to the credit of the catalogue cabinets that Panizzi had designed, which piped in either cold or hot air, depending on season.[61] When it reopened in 1857, the reconfigured British Museum was built around the new catalogue—the focal point of museum's endless circulation of printed books (and conditioned air).

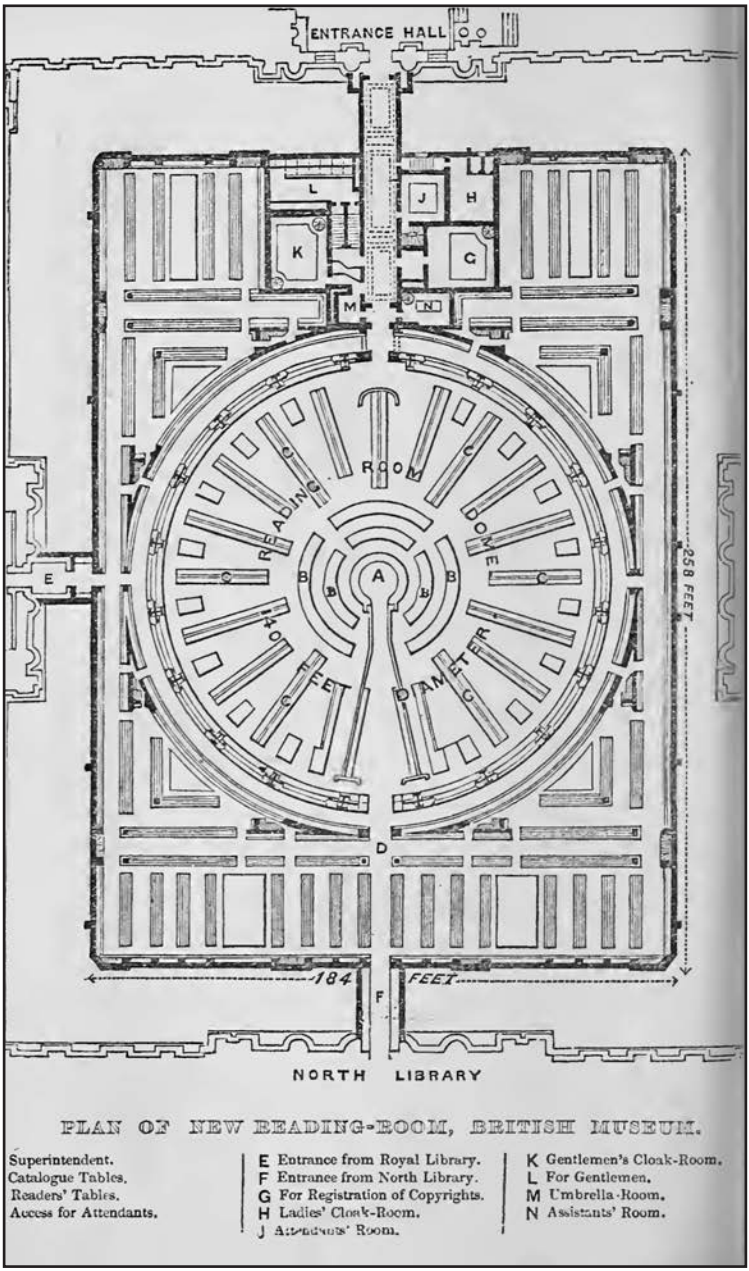


Figure 7. Plan of Reading Room, from British Museum, *New Reading-Room and Libraries* (1858) (digital image courtesy of the Natural History Museum Library, London, and the Internet Archive).

The architecture, the manuscript format, the institution as a whole evolved to support the dynamism of that catalogue. Book history has long emphasized the dynamic features of print culture, for example Robert Darnton's famous circular diagram of the cycle of book production.[62] While printed books form a circuit of dynamic feedback in the extended and dispersed sense of the punctual cycles of book production, the British Museum catalogue lived through this dynamism on each day of its varied lifespan. The manuscript technologies of Panizzi's catalogue dislodge it from the resting point of the print artifact. Its constant use, evaluation, and expansion served as the central organizing principle of the British Museum in the mid-nineteenth century. It was a core feature of the patron's exposure to the library's works, and had direct impact upon the collections themselves, as archivists consulted its pages to determine both where books were housed, and which books the library did not yet contain.

Roger Chartier anticipated this point two decades ago, in discussing the emancipation of early modern catalogues from physical collections. Theorizing a "universal library" that contained all printed works, these early catalogues produced "a conceptual entity detached from any particular material presence."[63] The title of this essay, "Libraries without Walls," points to the virtualization of the library by means of the catalogue, and Chartier uses this perspective to forecast the implications of the digital age, in which books will be accessed through computer monitors. In comparison to these sixteenth-century volumes, the general catalogue of the British Museum presented a particularly tight and embedded formulation of the library as a system in the world. The catalogue focused the circuits of exchange and textual circulation in a coherent, dynamic, and peculiarly interactive package. Users like Nicolas Harris found the new catalogue bewildering precisely because it explicitly articulated the library and its materials as an active system rather than a physical collection of books.

A central effort for this essay is to understand the British Museum Library and its catalogue as a new theater of discovery rather than a system of control; to supplement a critical perspective on the relationship between structures of knowledge and power with the transformative "techniques of the observer" ascribed by Jonathan Crary to the technologies guiding public experience in the nineteenth century.[64] As we have seen, the library's famous reading room was designed to set the readers in a physical space continuous with a transformative catalogue. More important was its access to a potentially unlimited and strictly unmanageable universe of print. The catalogue picked out features to organize that world—title, author, place, format, and

date—which were eminent rather than disciplinary. It provided an experience of printed works rooted in a dispersed historical and geographic field, by means of its sparse and sometimes alien system of order. It made history a central category for thinking through the structure of collections. The British Museum's catalogue dated the world of print; it exposed books through a past that was many-sided and interactive. The dynamic history furnished by the general catalogue, as it was embedded in the museum library, promoted the thicker historicism of a work like Marx's *Capital*, allowing users to move through time and across it, to test the complexities of history. On this view, the catalogue is a technology that translates the inclusive vision of the nineteenth-century liberal state into new and sometimes radical ways of exploring the past and imagining the future. The experience is telescopic, as the known constellations of books recede into the more nebulous but more nuanced background of print. It is for this reason that Woolf's essay, with its insight into academic bias, has continued to shake up our sense of the past—it is alive to the innumerable possibilities that the catalogue presents.

Notes

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1. Gregory Crane, "What Do You Do with a Million Books?," *D-Lib Magazine*, 12:3 (March 2006), accessed 15 January 2011, http://www.dlib.org/dlib/march06/crane/03crane.html. James Crawford, "On the Future of Books," *Google Books Search Blog*, 14 October 2010, http://booksearch.blogspot.com/2010/10/on-future-of-books.html. Robert Darnton, "The National Digital Public Library is Launched," *New York Review of Books*, 25 April 2013, accessed 2 May 2014, http://www.nybooks.com/articles/archives/2013/apr/25/national-digital-public-library-launched/.

2. Thomas Piketty, *Capital in the Twenty-First Century* (Cambridge: Harvard University Press, 2014), 20.

3. Chris Giles, "Data Problems with Capital in the 21st Century," *Financial Times,* 23 May 2014, accessed 27 May 2014, http://blogs.ft.com/money-supply/2014/05/23/data-problems-with-capital-in-the-21st-century/.

4. The Library of Congress estimated that it had 790,000 volumes at the close of the century, with approximately another 220,000 pamphlets. *Annual Report of the Librarian of Congress* (Washington: Government Printing Office, 1897), 4. The Department of Printed Books at the British Museum comprised 1,360,000 volumes in 1888. P. R. Harris, *A History of the British Museum Library* (London: British Library, 1998), 347.

5. The new Library of Congress building was finished in 1897, while the LC classification system, based upon Cutter's alphabetic "Expansive Classification," was sketched out in 1899. Leo E. LaMontagne, *American Library Classification* (Hamden, CT: Shoestring, 1961), 228–29.

6. Thomas Richards, *The Imperial Archive* (New York: Verso, 1986), 6.

7. The most influential treatments of the British Museum Library include Foucault's *Archaeology of Knowledge* (New York: Pantheon, 1972), which argues that the archive—construed in a much more capacious way than a simple collection of documents—inscribes a relation between power and knowledge that underwrites scientific understanding in the modern state, de Certeau's *Practice of Everyday Life* (Berkeley: University of California, 1984), which analyzes the strategies of political hegemony, and Derrida's "Archive Fever," *Diacritics* 25:2 (Summer 1995): 9–26, which sees archives as manifestations of the "arkhe," which is the origin point for organized power in social systems.

8. Robert Belknap gives a distinction in degree between the list, "a simple series of units, without the descriptive enhancement a catalogue usually provides," and the catalogue, which is "more comprehensive, conveys more information, and is more amenable to digression than the list" in his playful *The List: The Uses and Pleasures of Cataloguing* (New Haven: Yale University Press, 2004), 2–3. What I mean to emphasize his how the catalogue, though it develops from lists, is distinct in kind, particularly, in the requirement of an ontology (as discussed later in this essay), and in the catalogue's distinct understanding of how it will be used and how that use will change it.

9. See Kittler's summary in "The History of Communication Media," *CTheory*, 30 July 1996, accessed 28 May 2014, http://www.ctheory.net/articles.aspx?id=45.

10. See David Barker-Plummer's discussion in "Turing Machines," *The Stanford Encyclopedia of Philosophy*, accessed 14 August 2014, http://plato.stanford.edu/archives/sum2013/entries/turing-machine/.

11. I will discuss some of these debates later, but a good summary can be found in the second chapter of A. H. Chapin's *GK: 150 Years of the General Catalogue of Printed Books in the British Museum* (Brookfield, VT: Scolar Press, 1987).

12. Ibid., 6, 35–37.

13. William Baker, *The Early History of the London Library* (Lewiston: Edwin Mellen, 1992), 6–12. In private letters Carlyle described the librarian as "Vulture Panizzi." Letter to Lady Ashburton, 23 September 1855, *The Carlyle Letters Online [CLO]*, accessed 10 November 2010.

14. For Sir Nicolas Harris's account of his dispute with Panizzi, see his *Animadversions on the Library and Catalogues of the British Museum* (London: R. Bentley, 1846). The other incidents are briefly described in Harris, *History of the British Museum Library*, 170–71, 161–62, 230.

15. The most important study of Panizzi is Edward Miller's *Prince of Librarians* (Athens: Ohio University Press, 1967). P. R. Harris's article on Panizzi in the *Oxford Dictionary of National Biography* also provides a valuable condensed account.

16. Louis Fagan, *The Life and Correspondence of Sir Anthony Panizzi* (Boston: Houghton Mifflin, 1881), 1:45–47.

17. Quoted by Chaplin, *GK*, 7.

18. Estimates derived from scale plans of Montagu house in Campbell's *Vitruvius Britannicus* (1715) and Smirk's plans for the Quadrangle building, in Harris's *History of the British Museum Library*, Plan C. Estimate of library holdings given in A. W. Jarvis and R. Turtle, "The Jubilee of the British Museum Reading Room," *Country Life*, 4 March 1907: 641-42. Regarding the rate of increase of library collections, see Edward Edwards's *Lives of the Founders of the British Museum* (New York: B. Franklin, 1969) 573–75.

19. Chaplin, *GK*, 2.

20. The 91 rules are reprinted in the abortive 1841 "First volume" of the project, the *Catalogue of Printed Books in the British Museum*, v. 1 (London: J. B. Nicols and Son, 1841).

21. Nicolas Harris, *Animadversions on the Library and Catalogues of the British Museum* (London: R. Bentley, 1846), 20–21.

22. Chaplin, *GK*, 15, 68–74.

23. Harris, *Animadversions*, 17–18. Harris's dispute with Panizzi escalated when Panizzi charged that it was rooted in Harris's unhappiness that he had been required to start using the pressmarks recently added to the catalogue.

24. De Morgan claimed authorship of the letter the following year during his testimony before the Royal Commission investigating the British Museum. *Report of the Commissioners Appointed to Enquire into the Constitution and Government of the British Museum* (London: William Clowes and Sons, 1850), 377–78.

25. "British Museum Catalogue," *Athenaeum* 1103 (16 December 1848): 1264.

26. Note that what De Morgan seems to indicate with the designation of "literary" is a sense of comprehension of a higher order than merely "literate." Both a literary catalogue and a finding catalogue, by their nature, are organized alphabetically by the order of letters, but only the former has an awareness of the higher-order relations of the textual world, the world of letters.

27. In addition to Darwin's example, Jean Baptiste Lamarck's *Système des animaux sans vertèbres* (Paris: Deterville, 1801) articulated a theory of evolution that he used to arrange specimens at the Jardin des Plantes, and the uniformitarian theories Charles Lyell set out in his *Principles of Geology* (London: J. Murray, 1830–33) drew upon his work as editor of the numerous maps and surveys published through the *Transactions of the Geological Society of London* in the 1820s. For a discussion of the importance of cataloguing to nineteenth-century debates about species, see Gordon McOuat's illuminating analysis in "Cataloguing Power: Delineating 'Competent Naturalists' and the Meaning of Species in the British Museum," *British Journal for the History of Science* 34:1 (March 2001): 1–28. Adrian Johns has described the enormous importance of such cataloguing efforts for observational astronomy of the sixteenth and seventeenth centuries in his marvelous work on *The Nature of the Book* (Chicago: University of Chicago Press, 1998).

28. Charles Darwin, *A Monograph on the Sub-class Cirripedia*, 2 vols. (London: Ray Society, 1851–54). Charles Darwin, *A Monograph on the Lepididae* (London: Ray Society, 1851). Charles Darwin, *A Monograph on the Fossil Balanidae and Verrucidae of Great Britain* (London: Paleographical Society, 1854).

29. Charles Darwin, *On the Origin of* Species (London: J. Murray, 1859), *Darwin Online*, accessed 26 August 2014, http://darwin-online.org.uk/content/frameset?itemID=F373&viewtype=text&pageseq=1.

30. Thomas R. Gruber, "A Translation Approach to Portable Ontology Specifications," *Knowledge Acquisition* 5, no. 2 (1993): 199–220, 199.

31. F. Giunchiglia, B. Dutta, and V. Maltese, "Faceted Lightweight Ontologies," in *Conceptual Modeling: Foundations and Applications*, ed. Alexander T. Borgia, Vinay K. Chaudhri, and Paolo Georgini (Berlin: Springer, 2009), 36.

32. See C. M. Sperberg-McQueen's discussion in "Classification and its Structures," *A Companion to Digital Humanities*, ed. Susan Schreibman, Raymond George Siemens, and John M. Unsworth (Oxford: Blackwell Publishing, 2007), 162.

33. Clay Shirkey, "Ontology is Overrated: Categories, Links, and Tags," *shirkey.com*, accessed 14 February 2011, http://www.shirky.com/writings/ontology_overrated.html.

34. John Unsworth, "Knowledge Representation in Humanities Computing," *brandies.edu*, accessed 4 March 2011, http://www3.isrl.illinois.edu/~unsworth/KR/KRinHC.html.

35. Sergey Brin and Lawrence Page, "The Anatomy of a Large-Scale Hypertextual Web Search Engine," *stanford.edu*, accessed 14 February 2011, http://infolab.stanford.

edu/~backrub/google.html. It is really remarkable to think of Google being launched from this simple academic document.

36. Harris, *History of the British Museum Library*, 6.

37. Thomas Hartwell Horne, *Outlines for the Classification of a Library* (London: G. Woodfall, 1825).

38. This overlooks the small fraction of the collection located in presses in the reading rooms and galleries, as well as the reference works placed in the reading rooms for convenience.

39. The legacy of a reorganization of the library's holdings by class at the turn of the century. See Harris, *History of the British Museum Library*, 58–59, 154–55.

40. Ibid., 123.

41. Chaplin notes the peculiarity of aligning date to the right margin in the 1841 volume. *GK*, 32.

42. Harris, *History of the British Museum Library*, 120–21.

43. It does not seem that Chaplin was aware that this copy still existed. His brief discussion in *GK* (39) is drawn from internal records regarding the catalogue, and this probably accounts for his statement that they were bound in five, rather than the actual six volumes. Though they were repaired in 1954 (as noted in private correspondence with Adrian Edwards, Lead Curator at the British Library), all six retain the original gold-tooled bindings.

44. Chaplin, *GK*, 41–42.

45. As P. R. Harris documents, the staff of the printed books department rose from 79 in 1856 to 105 in 1875, not including a dozen reading room attendants. Panizzi's more consistent enforcement of the right of deposit was new to the library. See Harris, *History of the British Museum Library*, 129–202, 309, and also K. A. Manley's study of enforcement action against publisher Henry Bohn, "The Book Wolf Bites a Bohn: Panizzi, Henry Bohn and Legal Deposit, 1850–53," *The Library of the British Museum*, ed. P. R. Harris (London: British Library, 1991), 145–64.

46. From private correspondence with Adrian Edwards, Lead Curator, British Library.

47. See W. J. Haggerston, "The Newcastle-upon-Tyne Card Catalogue," *Library Journal,* January 1986: 7–9.

48. Harris, *History of the British Museum Library*, 121, 123.

49. Anon., "Library of the British Museum" *Atheneum* 1015 (10 April 1847): 389.

50. Quoted in Miller, *Prince*, 275. Panizzi's nationalism (his biographers repeatedly insist that Panizzi, as a naturalized Italian, was British rather than a Briton) was also counterbalanced by his pronounced cosmopolitanism. Not only was he a regular correspondent and visitor of librarians and archives spread across Europe, he was deeply engaged in the Italian Risorgimento and as a mediator between the British government and foreign governments, especially the imperial court of Louis Napoleon. See the twelfth chapter of Miller. For a discussion of how the *English Short Title Catalogue* emerged in connection with work on the British Museum Catalogue of Printed Books, see Chaplin, *GK*, 50–51.

51. Virginia Woolf, *A Room of One's Own* (London: Hogarth Press, 1929), 39. All further references given parenthetically by page.

52. Susan David Bernstein, *Roomscape: Women Writers in the British Museum from George Eliot to Virginia Woolf* (Edinburgh: Edinburgh University Press, 2013), 1. Cf. 1–5, 159–164.

53. Susan Gubar, *Rooms of Our Own* (Urbana: University of Illinois Press, 2006).

54. This is true even of Bernstein's *Roomscape*, which gives the most extended reconstruction of the experience of Woolf and other women in the British Museum Library.

55. Bernstein, *Roomscape*, 150–51.

56. G.K. Fortescue, *Subject Index of the Modern Works Added to the Library of the British Museum in the Years 1881–1900* (London: British Museum, 1902–03).

57. F. J. Hill, "'Fortescue': The British Museum and British Library Subject Index," *British Library Journal* (1986): 58–63.

58. Reprinted in Edward Miller, "Antonio Panizzi and the British Museum," *British Library Journal* 5, no. 1 (Spring 1979): 1–17.

59. Though I note that the original cover design for *A Room* features a large dome that revolves around a small circular clock face, a configuration that reflects the circular elements of the British Museum reading room, with its round catalogue and supervisor's desk placed beneath its famous dome (see Figure 7).

60. "Women in the British Museum Reading Room during the Late-Nineteenth and Early-Twentieth Centuries: From Quasi- to Counterpublic," *Feminist Studies* 28, no. 3 (Autumn 2003): 489–512.

61. British Museum, *New Reading Room and Libraries* (London: 1867).

62. Robert Darnton, "What is the History of Books?" *Daedalus* 111, no. 3 (Summer 1982): 68.

63. Roger Chartier, "Libraries without Walls," *Representations*, 42 (Spring 1993): 47.

64. Jonathan Crary, *Techniques of the Observer* (Cambridge: Massachusetts Institute of Technology Press, 1990).