

RESEARCH ARTICLE

Inscribed, Coded, Archived: Digitizing Early Modern Medical Casebooks

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What does it mean to make a new archive out of an old archive? This article describes how the Casebooks Project transformed thousands of consultations recorded by the seventeenth-century English astrologer-physicians, Simon Forman and Richard Napier, into the *Casebooks Digital Edition*. At the same time, it reflects on the nature of the production of knowledge, now and four hundred years ago. It builds on work that interrogates materiality and considers the ways in which remediation destabilizes notions of inscription, dissemination, and preservation. It resists the temptation to reduce cases to data and presents a model of an enduring digital archive. Remediating Forman's and Napier's manuscripts shows how knowledges in the past and in the present are made in writing, within encounters, and through archives.

Keywords: Casebooks; cases; data; archives; digital editing; digital humanities

Introduction

In the early 1590s, Simon Forman, a man with pretensions of learning and status, moved to London and established himself as an astrologer-physician. He systematically recorded his consultations in notebooks that we now call casebooks. By the end of the decade, he was consulted more than a thousand times each year. His success and his methods attracted attention from the College of Physicians with whom he was in conflict for the rest of his life. In 1599 Forman met Richard Napier, a shy clergyman from Buckinghamshire, the brother of Robert Napier, a merchant who from time to time consulted Forman about his ships. Forman taught Napier his methods, and Napier soon set up a thriving practice in his village of Great Linford, Buckinghamshire. Forman's casebooks survive for six years, from 1596 to 1603, totaling 10,000 consultations. Napier's survive for more than three decades, from 1597 to 1634, containing 70,000 consultations. Napier followed Forman's system, though with decreasing rigor over the years. Together they and their associates and assistants—more than a dozen hands appear in the records—recorded 80,000 consultations. These papers passed to Napier's heirs, and in the 1670s Elias Ashmole collected them for their astrological and antiquarian value. He had them bound into volumes which he bequeathed to the newly founded Ashmolean Museum at the University of Oxford. In 1860 they were moved to the Bodleian Library, where they will remain forever.¹

Forman's and Napier's casebooks are one of the most extensive surviving sets of private medical records in history.² Navigating their contents is challenging. They are ordered for the most part chronologically and lack other early modern tools of information retrieval, with the exception of some indexes of names, diseases, and treatments added to Napier's late casebooks by his nephew and others.³ In his 1845 catalogue of the

¹ The major studies of Forman are: Rowse, *Simon Forman*; Traister, *Notorious Astrological Physician*; Kassell, *Medicine and Magic*. The major studies of Napier are: MacDonald, *Mystical Bedlam*; Sawyer, "Patients, Healers and Disease"; Hadass, *Medicine, Religion, and Magic*.

² Dinges et al., *Medical Practice*; Kassell, "Casebooks in Early Modern England."

³ To locate the indexes, go to <https://casebooks.lib.cam.ac.uk/>. Under the "Browse" menu select "All," then under "Document type" select "Note," then "Notebook." Alternatively, type "Index" into the keyword search (under "Search" → "Keywords"). See also an attempt to number some of Forman's cases, summarized in NOTE254, and Ashmole's marking of cases with slips of paper. NOTE254 can be located by using "Go to case/identified entity" under the "Search" menu. Ashmole's bookmarks are listed, like indexes, in the facets under "Notebooks." More work could be done on the astrologers' labeling of cases with notes in the middle of charts. We did not code this feature.

Ashmole manuscripts, William Black listed the dates for each volume and calendared some of their cases.⁴ But even once a case is identified—choice examples about famous people and women’s bodies have received attention—the astrologers’ messy handwriting and astrological cosmologies often impede comprehension (Figure 1).⁵

Social historians, beginning with Keith Thomas, sought to quantify their contents. Thomas discussed Forman’s and Napier’s casebooks alongside those of their astrological successors William Lilly and John Booker; noted that their lack of systematic recording made them resistant to statistical analysis; and provided basic calculations of the occupations of Lilly’s clients and the sex distribution of Booker’s.⁶ A decade later, Michael MacDonald combined computational techniques and discursive analysis to study madness through a sample of “2,000 obscure rustics” in Napier’s casebooks. His evocative account included data about the distributions of Napier’s clients by age, sex, marital status, social status, and place of residence.⁷ Under MacDonald’s direction, Ronald Sawyer similarly sampled Napier’s casebooks to profile his practice as a whole.⁸ Barbara Traister and I, separately, sampled Forman’s casebooks to consider the distribution of his clients by age and sex.⁹ These studies sought to make sense of the numbers of Forman’s and Napier’s cases and drew on particular examples to contribute to the social and cultural histories of early modern magic and medicine.

I was building on these notions of the casebooks as early modern big data when, in 2008, I assembled a team of scholars under the banner of the Casebooks Project and embarked on the preparation of an “electronic”—later “digital”—edition of Forman’s and Napier’s casebooks. Our work went through four stages—pilot, first edition, second edition, and archiving—which overlapped with four phases of funding, mostly from the Wellcome Trust.¹⁰ In an earlier article, I reflected on the ways that the Casebooks Project engaged with the history of medicine, especially the history of early modern medical encounters, and began to explore questions about what it meant to render text as data.¹¹ As inscribed artifacts and historical evidence, I argued, new digital archives, like old paper archives, need to be handled critically. I sketched

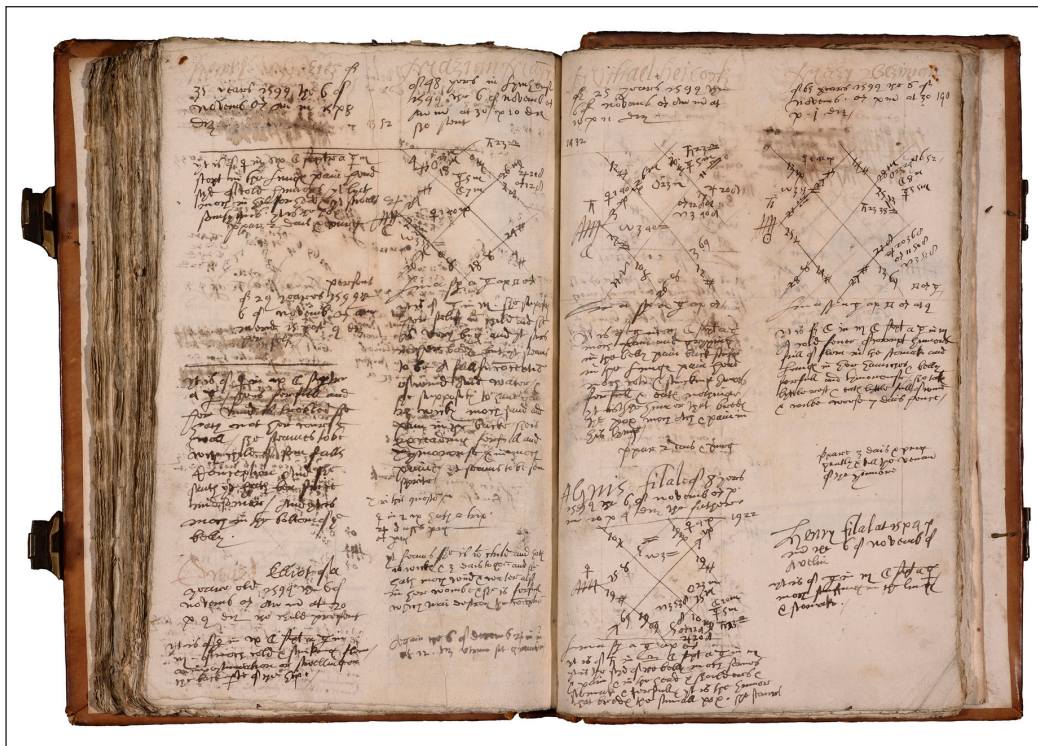


Figure 1: Simon Forman’s casebook open to a page from November 1599. MS Ashmole 219, ff. 189v–90r. © Bodleian Library, University of Oxford.

⁴ Black, *Catalogue*.

⁵ See Kassell et al., “Scholarship on the casebooks.”

⁶ Thomas, *Decline of Magic*, 362–82, esp. 378–79 and n. 192.

⁷ MacDonald, *Mystical Bedlam*, xii (quotation), 40–54, 233–35.

⁸ Sawyer, “Patients, Healers, and Disease.”

⁹ Kassell, “How to Read”; Kassell, *Medicine and Magic*; Traister, “Medicine and Astrology”; Traister, *Notorious Astrological Physician*.

¹⁰ Kassell et al., “Casebooks Project.”

¹¹ Kassell, “Paper Technologies.” See also Hitchcock, “Confronting the Digital.”

the ways that digitization can enhance our understanding of the material nature of the casebooks while cautioning that data visualizations risked representing these messy texts as objective evidence. This article provides a more sustained account of the Casebooks Project and reflects on how this work contributes to the history of knowledge.

Over the past decade, in response to the so-called “digital revolution” and concomitant crises of evidence and long-term thinking, historians have increasingly written about the ways in which knowledge is made and the forms it takes. For instance, Peter Burke called for the history of knowledge “to place the recent ‘digital revolution’ in perspective.”¹² Simone Lässig sketched the shift from an industrial society to a knowledge society and the rise of a reflexive sense that we are experiencing a knowledge revolution that is faster and of greater magnitude than any previous historical change.¹³ Jo Guldi and David Armitage blamed “information overload” for the crisis in long-term thinking and championed *longue-durée* history forged from big data to provide guidance for the future.¹⁴ Alex Csiszar, through a history of scientific periodicals, charted the “morselization of knowledge,” cautioned against “new scientific access fantasies,” and prophesied that “Our new experiments in knowledge expression will also generate new narratives of the past.”¹⁵ Whether focused on archives, information, data, cases, observations, or objectivity, bibliographies are now full of histories of the shifting nature of epistemic practices from the Middle Ages through the present day.¹⁶ These studies interrogate materiality and mediality. They show us that archives are at once fixed and mutable entities and that data as a form and a notion is factitious. The *Casebooks Digital Edition*, like many digital humanities projects, grapples with the mechanics and rationale of changing epistemic practices.¹⁷

This article reflects on the nature of the production of knowledge now and four hundred years ago through Forman’s and Napier’s casebooks. It shows the importance of resisting the temptation to reduce cases to statistical data and presents a model of an enduring digital archive.¹⁸ First, I introduce the *Casebooks* website and proceed by questions, beginning with, What does it mean to make a new archive out of an old archive? Then I step back to consider what casebooks are and why doctors wrote them before dwelling on what information Forman’s and Napier’s casebooks record, what information the *Casebooks Digital Edition* represents, and how we make a digital edition durable. Remediating Forman’s and Napier’s manuscripts shows how knowledges in the past and in the present are made in writing, within encounters, and through archives.

What does it mean to make a new archive out of an old archive?

The Casebooks Project homepage introduces itself and carries a simple tagline: “In the decades around 1600, the astrologers Simon Forman and Richard Napier produced one of the largest surviving sets of medical records in history. The Casebooks Project, a team of scholars at the University of Cambridge, has transformed this paper archive into a digital archive.” What does this mean?

First, the project is the people who do the work, not their outputs. Our recommended form of citation went through several iterations before we realized that we are the Casebooks Project and our main output is the *Casebooks Digital Edition*. Throughout this article, I use “we” to acknowledge that our work was a collective endeavor. Although most historians are attentive to the collaborative and contextual nature of knowledge production, the academy has been slow to reflect on the ways that digital technologies, grant cultures, and the corporatization of universities have changed how we work. I will not dwell on these important matters here, except to highlight the need for continuing efforts to reconsider how innovative work is evaluated and credit for it apportioned.¹⁹

Secondly, the *Casebooks Digital Edition* literally transforms a paper archive into a digital archive. This was a creative process. We did not simply digitize images of the casebooks or transcribe their content and

¹² Burke, *History of Knowledge*, 1.

¹³ Lässig, “History of Knowledge,” 33.

¹⁴ Guldi and Armitage, *Manifesto*, 88.

¹⁵ Csiszar, *Scientific Journal*, 20–21.

¹⁶ For surveys, see Yale, “History of Archives”; Jardine, “Paper Tools”; Bittel et al., *Working with Paper*, 1–14; Craven, *What Are Archives?*; Blair et al., *Information*.

¹⁷ Collectif Multitudes, “Digital Humanities Manifesto 2.0.” On DH, see for instance, Berry and Fagerjord, *Digital Humanities*; Burdick et al., *Digital Humanities*; Schreibman et al., *New Companion*; Terras et al., *Defining Digital Humanities*; Crymble, *Technology and the Historian*. For a succinct account, see Drucker, “Looking Back.” On digital work by historians of science, see Post and Weber, “Learned Websites.”

¹⁸ Manoff, “Archive and Database,” evaluates theoretical work on digital archives up to 2010. On related questions and their political import when dealing with a collection of data extracted and digitized from the patient records involving Indigenous members of the Gila River Indian Community, see Radin, “Digital Natives.” On computational methods for historians and philosophers of science, see Gibson et al., “Computational History.”

¹⁹ Jordanova, *History in Practice*. In 2015, the American Historical Association issued Guidelines for the Professional Evaluation of Digital Scholarship by Historians.

dump it or dismembered versions of it onto the World Wide Web.²⁰ Rather, our editing entailed analyzing the manuscripts, coding their contents, and representing the resulting data.²¹ We did not presume that the original paper archive was a pristine entity with a self-evident meaning, nor that it was unpalatably raw. By definition, written matter, even Forman's and Napier's crude notebooks, is cooked.²² We call our edition, and the dataset it represents, an *archive* to encourage our readers to think of its contents as text, not data.

The *Casebooks Digital Edition* contains roughly 152,000 digital pages, one for each of the 80,000 cases and 10,000 notes (and ancillary material) recorded by the astrologers and each of the 62,000 identified entities (i.e., person, organization, ship) designated by the editors. The edition takes the form of a bespoke interface for searching and accessing the data (**Figure 2**) and is accompanied by a critical introduction that includes explanatory material about the casebooks, the project and its editorial conventions, the histories of astrology and medicine, as well as other supporting information. It also hosts Forman's guide to astrological medicine, the key, as it were, to his methods.²³ The edition includes images of the manuscript of each case, and the full volumes can be viewed page by page through the Cambridge Digital Library platform.²⁴ The *Casebooks Dataset*, which underlies the digital edition, can be downloaded via GitHub.²⁵ We encoded the manuscripts in XML (Extensible Markup Language) following TEI (Text Encoding Initiative) standards, as documented in our editorial and tagging guidelines.²⁶ According to one computation, our dataset contains approximately 3.5 million words of edited text plus six times that much metadata. Finally, separate from the edition, we produced less formal full-text transcripts of around 500 cases in modern spelling and punctuation accessible via a *WordPress* site.²⁷

In order to ensure that the categories in the dataset and interface afford meaning to a broad range of readers, in the third stage of the project, prompted by our funders, we established an "engagement framework." For us, engagement was about shaping and improving our research, not, principally, about disseminating it. To launch this stage of the project, we invited scholars with humanities, medical, and museum expertise to a workshop and tasked them with exploring our edition. A report summarized their recommendations.²⁸ We also conducted teaching experiments, made a ninety-second animated film, and held workshops for reading the records. The centerpiece of the engagement framework was work with six acclaimed artists—Jasmina Cibic, Federico Díaz, Lynn Hershman, Rémy Markowitsch, Lindsay Seers, and Tunga—that culminated in an exhibition at Ambika P3, a large post-industrial space in central London, curated by Michael Mazière in spring 2017. We documented this work in a book and a nine-minute film and lodged them on the *Casebooks* website.²⁹ More opportunistically, we accepted the invitation of Jennifer Schneiderei of Nyamyam, a computer game developer, to act as historical consultants for a story-based comedy about Simon Forman and his patients. *Astrologaster*—a title borrowed from John Melton's 1620 anti-astrological book—was released in May 2019. In the final stage of our work, we invited guest contributors to identify cases relevant to their research. Their findings and frustrations helped us to improve the edition and website. We included their selections in our full-text transcriptions—Leah Astbury on "Bad Marriages," "Can Beget No Child," and "Childbirth and After"; Boyd Brogan on "Chastity Diseases"; Philippa Carter on "Frenzy"; Laura Gowing on "Women in Service"; Ofer Hadass on "Angels"; Michael Walkden on "Mind-Gut Connection"; Olivia Weisser on "Venereal Disease"—together with batches on topics ranging from Animals to Witchcraft selected by the project team. A case or two a day featured in our *Twitter* feed, @hpscsebooks.

All of this work contributed to transforming Forman's and Napier's manuscripts from a paper archive into a digital archive. From manuscripts written in ink on paper, bound in codices, and stored in a library, we fashioned a database, a digital edition, and a series of websites. We asked ourselves whether we were participating in a long history of scribal practices and, following Lisa Gitelman and others, reflected on the ways that remediating an archive destabilizes notions of inscription, dissemination, and preservation.³⁰ Ultimately, we embraced the capacity of digitization to move between an edition that guides its readers and an archive that preserves it and created a range of dispersed collections that replicate, repeat, and reconfigure the astrologers' cases and casebooks.

²⁰ Ogilvie, "Scientific Archives," 83.

²¹ Driscoll and Pierazzo, *Digital Scholarly Editing*.

²² Gitelman, "Raw Data"; Burke, *History of Knowledge*, esp. 6, 46; Daston, *Science in the Archives*, 9.

²³ Ralley et al., "Forman's Astrological Judgements."

²⁴ Kassell et al., *Casebooks Manuscripts*.

²⁵ Kassell et al., *Casebooks Dataset*.

²⁶ Young et al., "Editorial and Tagging Guidelines."

²⁷ Kaoukji and Kassell, *Selected Cases in Full*. This site also includes a selective index of the contents of the casebooks to provide access to material from the judgments and treatments not searchable through the main edition.

²⁸ Kassell, *Casebooks Launch Workshop Report*.

²⁹ Kaoukji et al., *CASEBOOKS: Work towards an exhibition*; Kassell et al., "Casebooks at Ambika P3."

³⁰ Gitelman, *Paper Knowledge*, esp. 4, 17–18, 111–35.

Figure 2: A screenshot of the browse and search interface of Lauren Kassell, Michael Hawkins, Robert Ralley, John Young, Joanne Edge, Janet Yvonne Martin-Portugues, and Natalie Kaoukji, eds., *Casebooks Digital Edition*, <https://casebooks.lib.cam.ac.uk/search?sort=sort-volume-name;f1-document-type=Case>. The wide column on the right shows the edited cases with a thumbnail of the manuscript. The narrow column on the left shows the facets that can be refined according to document type, practitioner details, patient details, how, where, and when a consultation took place, information about its contents from the question to payment, and editorial information. The facets also represent the “top ten” patients and querents matching selected categories. Drop down menus at the top allow for a choice of displays (diplomatic, normalized, or normalized with translation) and of criteria for sorting (by date, volume, or relevance).

What are cases and casebooks?

Medical practitioners did not necessarily work with a pen in hand. European doctors developed casebooks—series of cases, recorded day by day—in the 1500s. They modeled themselves on Hippocrates, the ancient father of medicine, who had reputedly recorded case histories on wax tablets and scrolls made from animal skins. As affordable paper replaced expensive parchment and fluid cursive scripts replaced laborious gothic ones, physicians borrowed practices of note-taking from scholars, list-making from administrative registers, and habits of account keeping from merchants.³¹

Their ancient and medieval predecessors had recorded individual cases that were unusual or illustrated their writings and advertised their skill. With few exceptions, cases typically appeared in the margins of philosophical and astronomical texts; like recipes and examples, they were literally marginal forms of

³¹ Kassell, “Casebooks in Early Modern England.”

knowledge. Then, around 1500, they became central as physicians and natural philosophers combined trends to focus on natural particulars over theoretical precepts with regimes of sustained observation.³²

When Forman began recording cases at the end of the sixteenth century, he was participating in broader trends. For instance, at around the same time Gemma Frisius, the Dutch mathematician and physician, reputedly kept a pair of notebooks, one of observations about the stars and weather, the other for medicine.³³ The practice of recording medical consultations, often called medical observations, had become reasonably common. But the resulting manuscripts seldom survived: several hundred, ranging from fragments of a few cases to sequences of many thousands, have been located in European archives dating from before 1700. They are often catalogued as account books, diaries, journals, practice books, collections of cures or observations, or casebooks. The term “casebook” was initially used for legal records in the late seventeenth century and then applied to doctors’ notes in the mid eighteenth century. I inherited the term from studies of early modern medical records, including Forman’s, and use it to refer to the range of records that medical practitioners produced when they recorded their practices.³⁴

Casebooks followed conventions—recording name, date, age, complaint, its cause, perhaps a prescription or payment—but varied from practitioner to practitioner. Some were like account books, written at the time of the encounter. Astrological records typically took this form. Others, like journals or diaries, were written when a doctor returned to his study after a day of visiting patients.³⁵ Mostly we know about cases and casebooks because before 1700 around a hundred doctors assembled collections and published them as a new genre of medical *observationes*, often glossed as case histories. These were typically ordered from head-to-toe or according to disease category and sometimes combined with cases from other historical practitioners.³⁶ Very seldom do the rougher, more immediate notes out of which practitioners assembled these compilations survive.

Many medical and astrological practitioners recorded cases. What makes Forman’s and Napier’s casebooks unusual is that they have survived. As I noted at the outset, compared to other sets of private medical records, they are also exceptionally extensive. But are they important documents, worthy of study, worthy of digitization? More disciplined practitioners digested their casebooks into published collections or even, from the late seventeenth century, contributed choice cases to the transactions of learned societies and medical journals. Most “raw” manuscript notes were discarded or simply forgotten. Published cases, however unresolved or remarkable, became the “data” out of which empirical medicine was constructed decades or even centuries later.³⁷ Neither Forman’s nor Napier’s cases feature in this vast medical library. Their manuscripts were collected and preserved for their astrological and antiquarian value. Are they simply instances of writings that failed to reach print and thus failed to merit being read by those who digested the unfixed yet unchanging variety of pre-modern disease categories into modern medical knowledge? Are Forman’s and Napier’s casebooks cultural refuse? Is the *Casebooks Digital Edition* a mere “resource” for historians of everyday practices and arcane ideas? Of course, my answer is “no,” but I pose these uncomfortable questions because I have been asked versions of them over the past decade.

While much of the work on histories of cases and observations has attended to the formal aspects of epistemic shifts that began in Europe in the 1500s, if not earlier, and is written with one eye on the use of cases in medical education and publishing through the twentieth century and the more recent rise of individualized medicine, the Casebooks Project centers on the practices embodied in a single archive that spans forty years. Our edition is thus more aligned with histories of knowledges that treat texts, whether learned discourses or scrappy notebooks, as socially produced objects that are created, disseminated, and transformed.³⁸ Cases are usually studied as part of histories of learnedness.³⁹ Forman’s and Napier’s casebooks have historically been considered as substandard, denigrated forms of knowledge precisely because, like traces left by artisans and women or the working notes of the Bohemian physician Georg Handsch, they are

³² Park, “Observation.”

³³ Broecke, “Louvain Instrument Making,” 227n20.

³⁴ Many of these are listed in note 1. For a preference for the term “practice journal,” see Dinges et al., *Medical Practice*.

³⁵ See, for instance, Dinges et al., *Medical Practice*; Kassell, “Casebooks in Early Modern England.”

³⁶ See esp. Pomata, “Sharing Cases”; “Observation Rising”; and “Recipe and Case.”

³⁷ Mendelsohn, “Empiricism in the Library,” esp. 86, 104.

³⁸ Lässig, “History of Knowledge”; Bittel et al., *Working with Paper*. See also Östling et al., “History of Knowledge”; Joas et al., “Introduction.”

³⁹ Forrester, “Thinking in Cases,” remains the best provocation. See also Hess and Mendelsohn, “Case and Series”; Mendelsohn, “Empiricism in the Library”; Pomata, “Sharing Cases”; “Observation Rising”; and “Recipe and Case.”

records of practice.⁴⁰ The *Casebooks Digital Edition* provides a model for understanding the ways in which learned and practical, elite and demotic are entwined within the histories of knowledges. We attended to epistemic practices and epistemic forms, as I will show, by editing the records and, at the same time, the events that produced them.

What information do Forman's and Napier's casebooks record?

When libraries digitize books and manuscripts, their unit of analysis is a page. When we digitized Forman's and Napier's casebooks, our unit of analysis, following the astrologers, was a case. Each case involved practitioners, querents, and patients alongside an array of information about the consultation that brought them together.

The astrologers typically constructed their casebooks by dividing a folio page into four quadrants. Longer cases filled two or more quadrants, shorter ones were squeezed into the space in between. In smaller, more portable notebooks a case could fill a page. **Figure 3** shows a representative page from Napier's casebooks. It contains two fairly long cases, each filling a column, with a third shorter case at the bottom left corner.



Figure 3: A page from Richard Napier's casebooks, MS Ashmole 228, f. 204r, Bodleian Library, Oxford, <https://cudl.lib.cam.ac.uk/view/MS-ASHMOLE-00228/417> (accessed 27 June 2019). © Bodleian Library, University of Oxford.

⁴⁰ On Handsch, see Stolberg, "Empiricism" and "Learning." On grubby knowledge, see Daston, "History of Science," esp. 143; Bittel et al., *Working with Paper*, 1–14.

Figure 4 shows the longer case on the left labeled with its constituent parts. Each case is best understood as containing four major classes of information indicated by the letters A to D on the right. “A” designates the *question* and personal information about the patient; “B” is a *chart* of the heavens, technically known as a *horoscope*, calculated for the moment at which the question was asked; “C” is the astrologer’s *judgment* of the case; and “D” is *additional information*.

In this example, the *question* reads:

Elisabeth Hartwell of
Astwood onc[e] Mrs Uvedales
servant. 25 y[ears old] unmarried.
Hath clumpers of blood in
her mouth 15 Sept
die [day] h [on Saturday] h[our]. 1.15 pm 1599

What this means is that Elizabeth Hartwell was the *patient* and probably also the *querent*. Questions could be asked on behalf of someone else, with or without the patient’s permission. Hartwell’s *address* was Astwood, a village 10 miles from Napier’s house, and she was 25 years old and unmarried. She had been a servant to Mrs Uvedale. Familial, professional, and other *relations* were often noted in the casebooks.

After Napier asked questions to glean this information, the client posed her question. In most of Forman’s cases, on which Napier’s system was based, this was some form of What is my disease? Napier’s consulting methods, or at least his records, were more expansive, and the question became a topic. Hence our designation *question topic*. Hartwell suffered from blood clots (“clumpers of blood”) in her mouth, repeated in this case in the middle of the chart. Thus we classified her question as “medical,” relating to “parts of the body” (“head and neck,” specifically “throat and mouth”) and “symptoms” (“bleeding.”) It was posed, perhaps by messenger, on Saturday, 15 September, 1599 at 1:15 pm. The circumstances of the consultation are unclear, and I will say more about this below. The time mattered because, like Forman, Napier mostly used horary astrology. They calculated positions of the stars at the moment a question was asked and plotted them within a *chart*. This may be why the astrologers worked with a pen in hand and wrote their cases, for the most part, in chronological sequence. As noted above, there is no other order to the manuscripts except in some indexes added by Napier’s nephew.

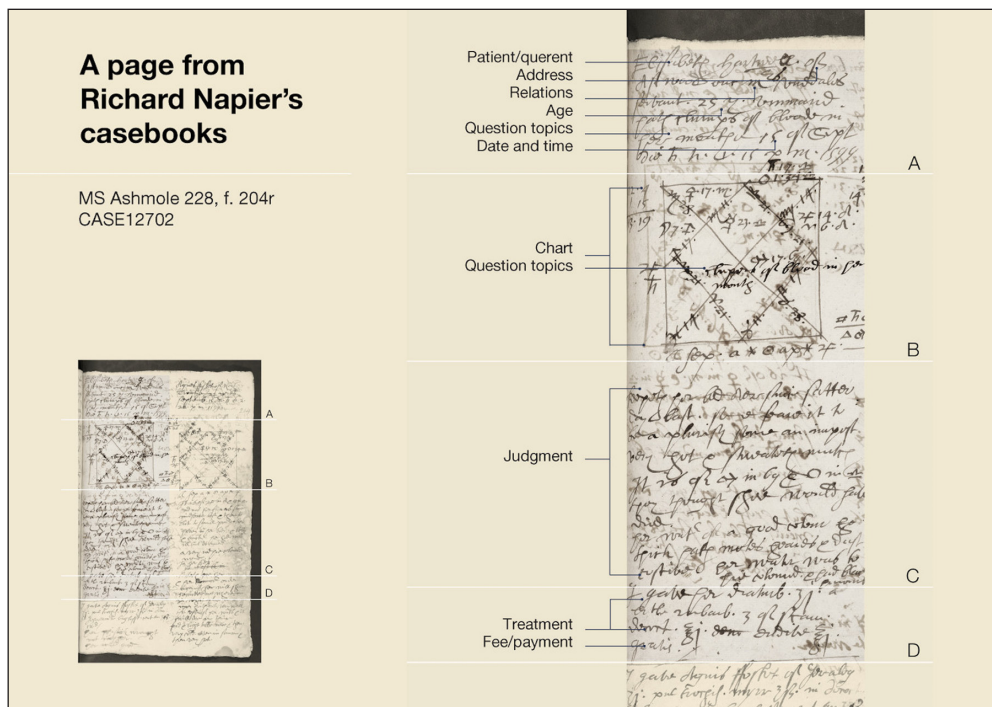


Figure 4: Anatomy of a case, from Lauren Kassell, Michael Hawkins, Robert Ralley, and John Young, “Anatomy of a Case,” *A Critical Introduction to the Casebooks of Simon Forman and Richard Napier, 1596–1634*, <https://casebooks.lib.cam.ac.uk/reading-the-casebooks/anatomy-of-a-case>.

Below the *chart*, the astrologer wrote his *judgment*, a standard astrological term. This is where we learn that Elizabeth Hartwell had been in bed for a week with a fever. Some suspected it was a pleurisy (a problem with the lungs); others feared an impost (swelling). She was hot and sweated much, and those around her had thought she would die. Napier judged that it was caused by the malign influence of Mars in the house of Cancer (associated with the chest, breast, and stomach) and the Sun in the house of Libra (associated with the kidneys, navel, and buttocks). He noted that her urine was thick and full of “motes,” meaning small particles. Then he added that its color was too high and full of black humors. She retched and vomited and was constipated. Napier gave her three sorts of purges and a cooling tincture and waived the fee (“gratis”). This is the further information that we labeled as *treatment* and *fee/payment*.

Forman’s and Napier’s records contain 80,000 cases like this one. The *Casebooks Digital Edition* allows users to see—to locate, read, and understand—all of the astrologers’ cases. It lets them zoom in on particular details about individuals, families, or households; cohorts by age or sex; time (daily, weekly, or seasonal patterns); other classes of information (question topics, payments, relationships, occupations, or places); and specific words or phrases.

We classified 92 percent of the questions as “medical” and the rest as “personal affairs,” “worldly affairs,” and “sex, family, and generation.” We assembled these categories from the specific topics about which the astrologers were consulted, working through several iterations to ensure that the categories reflected the concerns of the astrologers and their clients and made sense to twenty-first-century readers. For instance, questions about sex, family, and generation—childbirth, fertility, fidelity, the sex of a child, marital prospects, marital relations, paternity, pregnancy, romantic relations, wardship, and the upbringing of children—are grouped together. These have been kept distinct from medical questions in order to represent how important lineage was in its own right to most early modern individuals.⁴¹

These 80,000 cases document the everyday activities of 62,000 people. Some were notables like the poet Emilia Lanier and the mad John Villiers, Lord Purbeck, but most, like Elizabeth Hartwell, remain historically obscure.⁴² Within the aggregate, cohorts can be identified that tell us about the encounters that produced these records. Of the 62,000 people, 46,000 were patients, the majority of whom asked their own questions. However, in most of these cases, it is unclear whether the consultation took place in person or by messenger. Similarly, in the cases where a querent asked on behalf of the patient (an additional 7,000 people acted as querents without ever assuming the role of a patient), very few specified whether consent—an important indicator for the astrologers—was granted. As in the case of Elizabeth Hartwell, who was bedridden, it is unclear whether Napier traveled to her, someone consulted him on her behalf, or she sent a messenger. Our editorial judgment is that she asked the question, but how we do not know.

The remaining 9,000 named people in the casebooks who acted as neither patient nor querent were either third parties, such as prospective spouses, runaway servants, missing persons, or suspected witches, thieves, or incidentally mentioned, like Mrs Uvedale in the example above. Astrological encounters encoded social relations, and our edition is designed to prompt further work on the social dynamics of health and illness in early modern England in particular as well as to inform broader studies of how diseases are framed and medical encounters enacted.

Forman and Napier, with occasional interjections from their assistants and associates, inscribed their working habits day by day in their casebooks. These notebooks, like daybooks or diaries, were perhaps sitting open on their desks, and they contain other forms of notes scattered among their cases and concentrated in their end pages.⁴³ The lives best documented in the casebooks are those of the astrologers. They were also their own best clients. Their casebooks include numerous questions about themselves and their families, friends, and enemies.

Forman’s and Napier’s casebooks represent questions by thousands of people about dozens of topics, mostly medical, and the work of hundreds of practitioners across four decades. The nature of these records is as significant as the numbers they contain. The *Casebooks Digital Edition* uses digital tools to render Forman’s and Napier’s casebooks legible as both products of medical encounters and archives of everyday experiences.

⁴¹ Kassell, “Fruitful Bodies.”

⁴² On Lanier, see Benson, “Emilia Lanier.”

⁴³ Yeo, *Notebooks*. On Forman’s and Napier’s assistants and associates, see Kassell et al., “Practitioners.” To find the astrologers’ notes, indexed but not tagged with the same granularity as their cases, select “All” under the “Browse” menu. The facets for “Document type” include the category “Note.”

What information does the *Casebooks Digital Edition* represent?

Figure 5 shows our entry for the consultation about Elizabeth Hartwell. We designated each case with a unique number (CASE12702), transcribed the text above the *chart* (category A, the *question*, in **Figure 4**), and systematically labeled the attributes of the full case (everything from A to D) with metadata. This case illustrates eleven of the fifty or so labels that might be attached to a case. In conventional digital editing, metadata is used to describe the attributes of a document, such as the date it was created. We extended the use of metadata to include the content of the texts and labeled, for instance, cases that contained a “medical” question. Digital tools allowed us to represent both what was written in the manuscripts and the encounters—initiated through questions—that produced the records.

Our code for a typical case contains anywhere from five to fifty words of text framed by extensive content-based metadata. **Figure 6** shows the code for CASE12702. It represents details about how the case was written and what it contains. Our edition displays this information and its relationship to the full corpus of cases in search facets—lists of categories with their constitutive quantities—and labels beneath each case.

When deciding which aspects of a case to code, we paid particular attention to the means of the production of medical knowledge within and in relation to medical encounters. We want our readers to imagine that they are watching the astrologer at work in his consulting room. This is where our inquiry is situated, not at the bedside or in the library. Each entry is headed with a natural language summary of who consulted the astrologer and when. For instance, Elizabeth Hartwell’s first question leads with the phrase, “Question asked by the patient on 15 September 1599 at 13:15” (**Figure 5**). The facets represent the editorial judgment that the patient asked the question. Note that the question of whether it took place in person or not is “unclear.” The astrologers specified that a consultation took place in person or was sent only in a minority of cases.

Figure 5: CASE12702 from Lauren Kassell, Michael Hawkins, Robert Ralley, John Young, Joanne Edge, Janet Yvonne Martin-Portugues, and Natalie Kaoukji, eds., “CASE12702,” *The Casebooks of Simon Forman and Richard Napier, 1596–1634: A Digital Edition*, <https://casebooks.lib.cam.ac.uk/cases/CASE12702>.

```

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schematypens="http://relaxng.org/ns/structure/1.0"?
>
<?xml-model href="schema/casebooks.rng"
type="application/xml"
schematypens="http://purl.oclc.org/dsdl/schematron"
?>
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<!ENTITY % entities SYSTEM "schema/entities.dtd">
%entities;
]>
<TEI xmlns:xi="http://www.w3.org/2001/XInclude"
xmlns:svg="http://www.w3.org/2000/svg"
xmlns="http://www.tei-c.org/ns/1.0"
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<surname>Uvedale</surname></persName>
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rend="overline">r</hi>s</hi></orig><reg>Mrs</reg></
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y. &Vowel;nmarried. <lb/>hath
clum<choice><orig>&crossedp;</orig><reg>per</reg></
choice>s of bloode in <lb/>her mouthe 15 of Sept
<lb/>&SaturdayN; h. 1. 15 p m. 1599<note
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Figure 6: XML for CASE12702.

Our edition extends from the scenario of the encounter across a person's life and into the community. Readers can see all of the cases in which a person was involved: each individual was given a unique number and dedicated page. **Figure 7** is the page for Elizabeth Hartwell, PERSON12608.

This is how we know that she did not die after her first consultation, which was in 1599. She consulted Napier twice more in 1601. She only consulted him these three times; some people have dozens of cases. The edition also allows us to situate any given individual in terms of facets for ages of patients and querents (see **Figure 8a** and **8b**). Social networks, as shown in **Figure 9**, locate individuals within their families and communities.

Casebooks

Browse Search Reading the casebooks Astrological medicine Using the casebooks About us

Elizabeth Hartwell (PERSON12608)

Personal details | Case details | Social network

Sex: Female
Birth: 1573-09-16-1577-05-08 (est.)
Death: Not recorded in the casebooks
Spouses: None recorded in the casebooks
Occupation: 'Servant', c. 15 September 1599
Residences: 'England > Buckinghamshire > Astwood > Unspecified', c. 15 September 1599 & 7 May 1601

Browse the three cases in which Elizabeth Hartwell (PERSON12608) is involved.

Case details

Excel CSV Column visibility

Search:

Case	Date	Time	Querent(s)	Patient(s)	Topic(s)	Entry type
CASE12702	1599-09-15	13:15	Self	Self	Medical > Parts of the body > Head and neck (Throat and mouth) Medical > Symptoms (specified) (Bleeding)	Horary
CASE19378	1601-05-07	09:00	Self	Self	Medical (Not specified in question) Medical > Witchcraft and devil (Witchcraft suffered (medical))	Horary
CASE19405	1601-05-09	11:20	Self	Self	Medical > Symptoms (specified) > Diarrhoea and bloody flux (Flux)	Horary

Showing 1 to 3 of 3 entries

Social relationship network

This person is part of a large social network that may be slow to display.

Draw network

Figure 7: Elizabeth Hartwell's person page. Lauren Kassell, Michael Hawkins, Robert Ralley, John Young, Joanne Edge, Janet Yvonne Martin-Portugues, and Natalie Kaoukji, eds., "Elizabeth Hartwell (PERSON12608)," *The Casebooks of Simon Forman and Richard Napier, 1596–1634: A Digital Edition*, <https://casebooks.lib.cam.ac.uk/identified-entities/PERSON12608>.

a) Patient details	b) Person asking the question
Patient is	Querent is
◦ Female (43813)	◦ Female (40423)
◦ Male (35760)	◦ Male (34086)
◦ Unknown (942)	◦ Unknown (5801)
Patient's age	Querent's age
▣ 000-009 (5568)	▣ 000-009 (39)
▣ 010-019 (8254)	▣ 010-019 (7407)
▣ 020-029 (19103)	▣ 020-029 (18204)
▣ 030-039 (15560)	▣ 030-039 (15346)
▣ 040-049 (12394)	▣ 040-049 (12533)
▣ 050-059 (8574)	▣ 050-059 (8563)
▣ 060-069 (5261)	▣ 060-069 (5355)
▣ 070-079 (1403)	▣ 070-079 (1347)
▣ 080-089 (448)	▣ 080-089 (426)
▣ 090-099 (46)	▣ 090-099 (44)
▣ 100-109 (6)	▣ 100-109 (4)
Number of patients	Querent is identified
◦ Multiple patients (1047)	◦ No (6682)
◦ Single patient (78827)	◦ Yes (73257)

Figure 8a and b: Facets for ages of patients and querents from the full corpus of cases. Lauren Kassell, Michael Hawkins, Robert Ralley, John Young, Joanne Edge, Janet Yvonne Martin-Portugues, and Natalie Kaoukji, eds., *The Casebooks of Simon Forman and Richard Napier, 1596–1634: A Digital Edition*, <https://casebooks.lib.cam.ac.uk/search?f1-document-type=Case::Entry;sort=sort-date>.

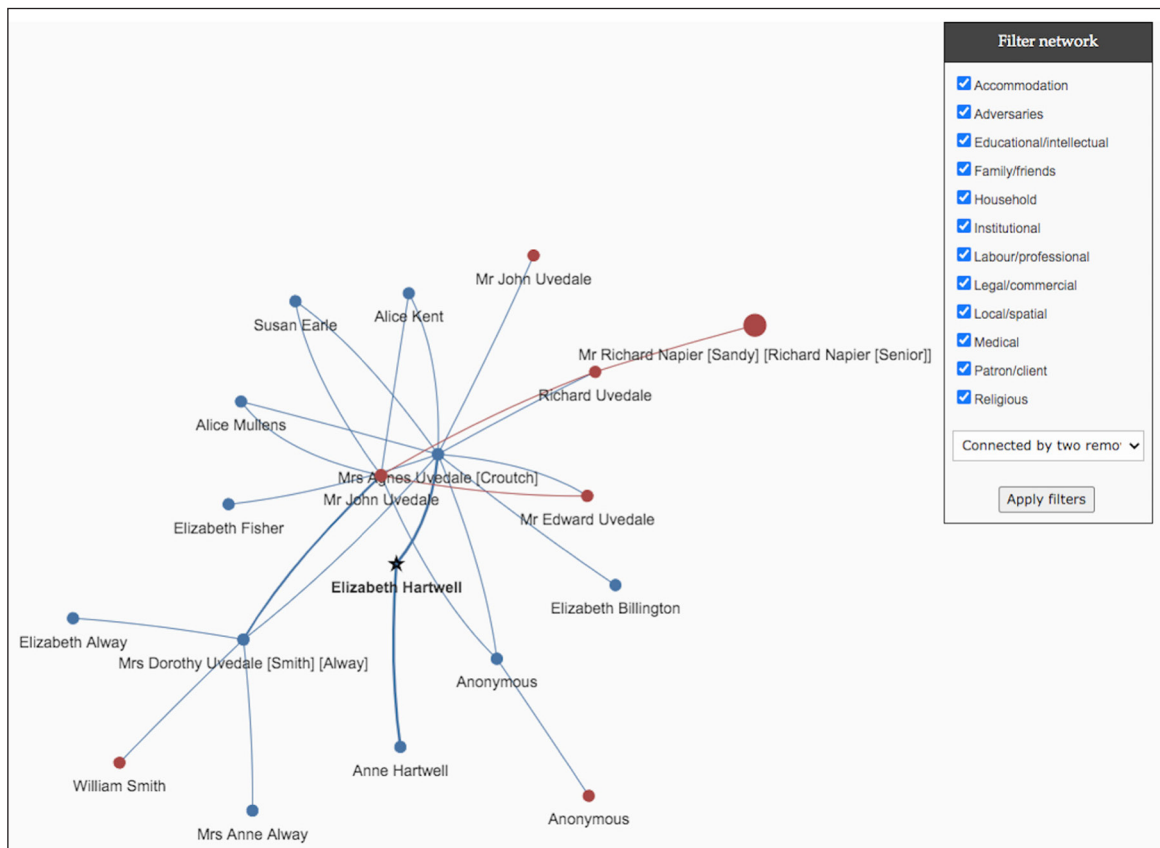


Figure 9: Elizabeth Hartwell's social network. Lauren Kassell, Michael Hawkins, Robert Ralley, John Young, Joanne Edge, Janet Yvonne Martin-Portugues, and Natalie Kaoukji, eds., "Elizabeth Hartwell (PERSON12608)," *The Casebooks of Simon Forman and Richard Napier, 1596–1634: A Digital Edition*, <https://casebooks.lib.cam.ac.uk/identified-entities/PERSON12608>.

We want readers to imagine the astrologers writing their notebooks in order to draw attention to their form as well as their content. Our facets include document type, practitioner details, patient details, how, where, and when a consultation took place, information about its contents from the question to payment as described above, and editorial information. It is now a commonplace that digitization risks flattening objects, a problem that is especially acute when written documents are rendered as code. At the same time, remediation has the potential to accentuate rather than efface the materiality of a text. Casebooks are physical objects produced through performative encounters and archival practices. Our edition situates each case on a page and locates it and its actors in time and place.

Someone watching the astrologers writing their notebooks, however, would not be able to follow them and their clients' hopes, fears, and worries beyond the page. Our edition allows readers to search and sort the full expanse of these records in terms of, for instance, information about patients and querents, the kinds of questions they asked and in what circumstances, and the situation of these records and the encounters they document hour by hour, month by month, year by year. In our first edition, users located this information through a search form and data visualizations. As noted earlier, from the outset we established taxonomies of topics and their aggregates, reviewing them as we worked, based on the questions the astrologers were asked. Our data visualizations of the age and sex of patients and querents and of question topics seemed to be misleading readers—we learned this from the way our students and others used the edition—into using qualitative data about, for instance, symptoms, as though it had a quantitative significance in terms of disease prevalence. In our second edition, we moved to searches conducted by clicking through facets, just as you would narrow a search when looking for an article or buying a pair of shoes online. As we saw in **Figure 6**, this allows readers to deduce that women in their twenties consulted the astrologers more than other cohorts. Clicking on the facet leads to these cases and thus, constantly returns the reader to the case as a unit of analysis. The quantitative leads to the qualitative; data is never separated from a case; any illusion of digital clarity carries a tinge of thick description.

When we moved to facets, we gained the capacity to allow keyword searching, a tool that risks readers assuming that their language meshes with that of the astrologers and their editors, but also produces serendipitous results (try, for instance, searching for “apple” or “yellow”). We also abandoned most of our data visualizations, retaining only the social networks, in part because they were misleading and in part, as I will discuss below, because of the pragmatics of maintaining the site.

We designed the edition to help readers locate relevant cases for intensive study and, at the same time, to encourage them to resist using our data uncritically. This was especially significant for the medical question topics. For instance, our topics include 1,480 cases in which the astrologers were asked about pregnancy.⁴⁴ This does not mean that 1,480 women were pregnant. Nor does it mean that the astrologers only considered pregnancy as a possibility in 1,480 cases. In fact, the astrologers probably considered pregnancy as a possibility in all cases of women of childbearing age, that is, in 30,000 cases with women as patients. As the facets show, the 1,480 cases in which the astrologers were asked about pregnancy are comprised of three sorts. The majority, 1,338 cases, concern women asking the astrologers whether they were pregnant. Most probably wanted to be. In 155 cases, someone else asked the question. In 13 cases, there were multiple patients, though pregnancy might not apply to all of them. To understand pregnancy, and fertility more generally, in the casebooks, we need to consider these 1,480 cases, the other cases in which these women feature, and other cases of women—married and unmarried—of childbearing age. Our edition helps readers find, situate, and understand these cases from the perspectives of the astrologers and their clients. We present early modern big data in the form of inscribed cases and connected individuals.

As a digital humanities project, we repurposed tools designed for shopping online and managing scientific data to make seventeenth-century records legible to twenty-first-century readers. As scholarly editors and authors of a website, we wrote explanatory pages initially to introduce and explain the casebooks and our edition and later with a view to recording our expertise for an imagined future audience. We worried that a time would come when the content of the new archive and the old archive might be similarly inscrutable. And we realized that while the codex has and will endure, the digital edition is fragile. Thus, I will conclude with some reflections on the durability of digital archives.

How do we make a digital archive durable?

Paper codices are durable. Digital archives are not. Data, especially when it is encoded following standards like XML and TEI, has a robust legacy, but the forms in which it is accessed and displayed tend towards obsolescence. However solid a digital edition’s back end, its front end, like all websites, will degrade. Should published scholarship be disposable? Websites certainly are: we have thrown away two.⁴⁵

Halfway through our work on Forman’s and Napier’s casebooks, we realized that when you make a new archive out of an old archive, you put your new archive in the library. Before this, our edition ran off a server in my university department with an agreement to keep it plugged in for ten years. Our data would be secured in an open repository in compliance with the assurances that we provided when applying for funding, but our web-based interface would rapidly degrade. To address this insecurity, we added a fourth stage—archiving and preservation—to the project.

The Cambridge University Library agreed to host our edition, including, with the permission of the Bodleian Libraries, images of the manuscripts. We secured additional funding to cover the costs of the library’s software developers and some hardware and adapted our data to fit within the Cambridge Digital Library’s system (which uses XTF). Because our unit of analysis is a case and Cambridge Digital Library’s unit is a page, it became clear that although a skeletal version of our edition would be accessible through the Cambridge Digital Library as a finding aid to their digital facsimile of the manuscripts, the full edition needed its own “instance” within the library website. As Cambridge Digital Library updates its systems, the *Casebooks Digital Edition* should be carried forward with it. Without bespoke maintenance, however, its functionality is likely to degrade. To minimize this risk and for the analytic reasons noted above, we limited our use of graphical displays. We established a Casebooks Editorial Committee and secured a memorandum of understanding between this committee and the Cambridge University Library to maintain the site for a decade from our launch in 2019. A decade is a long time for digital technologies and a short time for conventional scholarship lodged in libraries. Degradation is a recognized problem within digital humanities,

⁴⁴ Select “Cases” under the “Browse” menu. Scroll down to “Consultation details.” Under “Question asked” select “Pregnancy.” To see cases with multiple topics, e.g., “Pregnancy” and “Medical,” select both terms: 757 cases are returned. Alternatively, under the “Search” menu, select “Keyword” and type “pregnancy.”

⁴⁵ Kassell et al., “Casebooks Project.”

especially digital editing, and it is increasingly identified as one of the real costs of maintaining digital scholarship.

Digital archives have been compared with earlier endeavors to publish historical documents, such as the *Monumenta Germaniae Historica* and the *Oldenburg Correspondence*.⁴⁶ This article monumentalizes Forman's and Napier's casebooks and our edition of them: the old archive is in the Bodleian Library; the new archive is on the website of the Cambridge University Library. These are enduring institutions. We have combined conventional scholarly methods and playful experiments to design an edition that represents casebooks as texts and as encounters. We want our readers to understand early modern big data day by day, case by case. We do not know whether, or indeed how, our work will be read in fifty or five hundred years, but we challenge our libraries and universities to ensure that digital archives, like paper archives, endure.⁴⁷

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Bibliography

Casebooks Digital Edition

Kaoukji, Natalie, Lauren Kassell, and Michael Mazière. *CASEBOOKS: Work Towards an Exhibition at Ambika P3*. London: Printed at the University of Westminster for the Casebooks Project, 2017.

Kaoukji, Natalie, and Lauren Kassell. *Selected Cases in Full – From Simon Forman's and Richard Napier's Medical Records*. <https://casebooks.wordpress.com/>.

Kassell, Lauren. *Casebooks Launch Workshop Report*. Oxford, 2015. <https://casebooks.lib.cam.ac.uk/data/Casebooks-launch-workshop-report.pdf>.

⁴⁶ Ogilvie, "Scientific Archives," 78. I am very grateful to Lorraine Daston for comparing *Casebooks* to these endeavors in 2014.

⁴⁷ Manoff, "Archive and Database," esp. 394–96.

Kassell, Lauren, Michael Hawkins, Robert Ralley, and John Young. *The Manuscripts of Simon Forman's and Richard Napier's Casebooks, 1596–1634*. <https://cudl.lib.cam.ac.uk/collections/casebooks>.

- Benson, Pamela. "Emilia Lanier." <https://casebooks.lib.cam.ac.uk/using-the-casebooks/meet-the-patients/emilia-lanier>.
- Kassell, Lauren, et al. "Casebooks at Ambika P3." <https://casebooks.lib.cam.ac.uk/about-us/casebooks-at-ambika-p3>.
- Kassell, Lauren, et al. "Casebooks Project." <https://casebooks.lib.cam.ac.uk/about-us/casebooks-project>.
- Kassell, Lauren, et al. "Practitioners." <https://casebooks.lib.cam.ac.uk/reading-the-casebooks/who-were-the-practitioners/practitioners>.
- Kassell, Lauren, et al. "Scholarship on the Casebooks." <https://casebooks.lib.cam.ac.uk/astrological-medicine/scholarship-on-the-casebooks>.
- Ralley, Robert, et al. "A Critical Edition of Simon Forman's 'The Astrologicalle Judgements of Phisick and Other Questions.'" <https://casebooks.lib.cam.ac.uk/transcriptions/TEXT5>.
- Young, John, et al. "Editorial and Tagging Guidelines." <https://casebooks.lib.cam.ac.uk/about-us/editorial-and-tagging-guidelines>.

Kassell, Lauren, Michael Hawkins, Robert Ralley, John Young, Joanne Edge, and Janet Yvonne Martin-Portugues. *The Casebooks of Simon Forman and Richard Napier, 1596–1634: A dataset of 80,000 Astrological Consultations*. <https://github.com/CasebooksProject>.

Kassell, Lauren, Michael Hawkins, Robert Ralley, John Young, Joanne Edge, Janet Yvonne Martin-Portugues, and Natalie Kaoukji, eds. *The Casebooks of Simon Forman and Richard Napier, 1596–1634: A Digital Edition*. <https://casebooks.lib.cam.ac.uk>.

Other sources and literature

- American Historical Association. "Guidelines for the Professional Evaluation of Digital Scholarship by Historians." <https://www.historians.org/teaching-and-learning/digital-history-resources/evaluation-of-digital-scholarship-in-history/guidelines-for-the-professional-evaluation-of-digital-scholarship-by-historians> (accessed 3 July 2020).
- Berry, David M., and Anders Fagerjord. *Digital Humanities: Knowledge and Critique in a Digital Age*. Cambridge, UK: Polity Press, 2017.
- Bittel, Carla, Elaine Leong, and Christine von Oertzen, eds. *Working with Paper: Gendered Practices in the History of Knowledge*. Pittsburgh: Pittsburgh University Press, 2019. DOI: <https://doi.org/10.2307/j.ctvk8w0tg>
- Black, William. *A Descriptive, Analytical, and Critical Catalogue of the Manuscripts Bequeathed unto the University of Oxford by Elias Ashmole*. Oxford: Oxford University Press, 1845.
- Blair, Ann, Paul Duguid, Anja Goeing, and Anthony Grafton, eds. *Information: A Historical Companion*. Princeton: Princeton University Press, 2021. DOI: <https://doi.org/10.2307/j.ctv1pdrbbs>
- Burdick, Anne, Joanna Drucker, Peter Lunenfeld, Tod Presner, and Jeffrey Schnapp. *Digital-Humanities*. Cambridge, MA: MIT Press, 2012.
- Burke, Peter. *What is the History of Knowledge?* Cambridge, UK: Polity Press, 2015.
- Collectif Multitudes. "Digital Humanities Manifesto 2.0." *Multitudes* 59, no. 2 (2015 [2008]): 181–95. DOI: <https://doi.org/10.3917/mult.059.0181>
- Craven, Louise. *What Are Archives? Cultural and Theoretical Perspectives: A Reader*. London: Routledge, 2016. DOI: <https://doi.org/10.4324/9781315547497>
- Crymble, Adam. *Technology and the Historian: Transformations in the Digital Age*. Champaign, IL: University of Illinois Press, 2021. DOI: <https://doi.org/10.5406/j.ctv1k03s73>
- Csiszar, Alex. *The Scientific Journal: Authorship and the Politics of Knowledge in the Nineteenth Century*. Chicago: University of Chicago Press, 2018. DOI: <https://doi.org/10.7208/chicago/9780226432533.001.0001>
- Daston, Lorraine. "The History of Science and the History of Knowledge." *KNOW: A Journal of the Formation of Knowledge* 1, no. 1 (2017): 131–54. DOI: <https://doi.org/10.1163/9789004303324>
- Daston, Lorraine, ed. *Science in the Archives: Pasts, Presents, Futures*. Chicago: Chicago University Press, 2017.
- Dinges, Martin, Kay Peter Jankrift, Sabine Schlegelmilch, and Michael Stolberg eds. *Medical Practice, 1600–1900: Physicians and their Patients*. Translated by Margot Saar. Vol. 96 of *Clio medica: Perspectives in Medical Humanities*. Leiden: Brill Rodopi, 2015. DOI: <https://doi.org/10.11647/OBP.0095>

- Driscoll, Matthew James, and Elena Pierazzo, eds. *Digital Scholarly Editing: Theories and Practices*. Cambridge, UK: Open Book Publishing, 2016.
- Drucker, Johanna. "Looking Back and Thinking Ahead: Humanistic Methods and/in Digital Humanities," 1 May 2019. <https://www.cdh.cam.ac.uk/network/distinguished-lecturer-series/johanna-drucker-looking-back-and-thinking-ahead> (accessed 30 July 2019).
- Forrester, John. "If P, Then What? Thinking in Cases." *History of the Human Sciences* 9, no. 3 (1996): 1–25. DOI: <https://doi.org/10.1177/095269519600900301>
- Gibson, Abraham, Manfred D. Laubichler, and Jane Maienschein, eds. "Focus: Computational History and Philosophy of Science." *Isis* 110, no. 3 (2019): 497–566. DOI: <https://doi.org/10.1086/705542>
- Gitelman, Lisa, ed. *"Raw Data" is an Oxymoron*. Cambridge, MA: MIT Press, 2013. DOI: <https://doi.org/10.7551/mitpress/9302.001.0001>
- Gitelman, Lisa. *Paper Knowledge: Toward a Media History of Documents*. Durham: Duke University Press, 2014. DOI: <https://doi.org/10.1215/9780822376767>
- Guldi, Jo, and David Armitage. *The History Manifesto*. Cambridge, UK: Cambridge University Press, 2014. DOI: <https://doi.org/10.1017/9781139923880>
- Hadass, Ofer. *Medicine, Religion, and Magic in Early Stuart England: Richard Napier's Medical Practice*. University Park, PA: Pennsylvania State University Press, 2018. DOI: <https://doi.org/10.5325/j.ctv14gpd57>
- Hess, Volker, and J. Andrew Mendelsohn. "Case and Series: Medical Knowledge and Paper Technology, 1600–1900." *History of Science* 48, no. 3–4 (2010): 287–314. DOI: <https://doi.org/10.1177/007327531004800302>
- Hitchcock, Tim. "Confronting the Digital, or How Academic History Writing Lost the Plot." *Cultural and Social History* 10, no. 1 (2013): 9–23. DOI: <https://doi.org/10.2752/147800413X13515292098070>
- Jardine, Boris. "State of the Field: Paper Tools." *Studies in the History and Philosophy of Science* 64 (2017): 53–63. DOI: <https://doi.org/10.1016/j.shpsa.2017.07.004>
- Joas, Christian, Dominik Knaupp, Fabian Krämer, and Kärin Nickelsen. "Introduction: History of Science or History of Knowledge?" In "History of Science or History of Knowledge?," edited by Christian Joas, Fabian Krämer, and Kärin Nickelsen. Special Issue of *Berichte zur Wissenschaftsgeschichte – History of Science and Humanities* 42 nos. 2–3 (2019): 117–25. DOI: <https://doi.org/10.1002/bewi.201970021>
- Jordanova, Ludmilla. *History in Practice*. 3rd ed. London: Bloomsbury, 2019.
- Kassell, Lauren. "Casebooks in Early Modern England: Medicine, Astrology and Written Records." *Bulletin of the History of Medicine* 88, no. 4 (2014): 595–625. DOI: <https://doi.org/10.1353/bhm.2014.0066>
- Kassell, Lauren. "Fruitful Bodies and Astrological Medicine." In *Reproduction: Antiquity to the Present Day*, edited by Nick Hopwood, Rebecca Flemming, and Lauren Kassell, 223–40. Cambridge, UK: Cambridge University Press, 2018. DOI: <https://doi.org/10.1017/9781107705647.022>
- Kassell, Lauren. "How to Read Simon Forman's Casebooks: Medicine, Astrology, and Gender in Elizabethan London." *Social History of Medicine* 12, no. 1 (1999): 3–18.
- Kassell, Lauren. *Medicine and Magic in Elizabethan London: Simon Forman, Astrologer, Alchemist, and Physician*. Oxford: Oxford University Press, 2005.
- Kassell, Lauren. "Paper Technologies, Digital Technologies: Working with Early Modern Medical Records." In *The Edinburgh Companion to the Critical Medical Humanities*, edited by Anne Whitehead, Angela Woods, Sarah Atkinson, Jane Macnaughton, and Jennifer Richards, 120–35. Edinburgh: Edinburgh University Press, 2016.
- Lässig, Simone. "The History of Knowledge and the Expansion of the Historical Research Agenda." *Bulletin of the German Historical Institute* 59 (2016): 29–58.
- MacDonald, Michael. *Mystical Bedlam: Madness, Anxiety, and Healing in Seventeenth-Century England*. Cambridge, UK: Cambridge University Press, 1981.
- Manoff, Marlene. "Archive and Database as Metaphor: Theorizing the Historical Record." *Libraries and the Academy* 10, no. 4 (2010): 385–98. DOI: <https://doi.org/10.1353/pla.2010.0005>
- Mendelsohn, J. Andrew. "Empiricism in the Library: Medicine's Case Histories." In *Science in the Archives: Pasts, Presents, Futures*, edited by Lorraine Daston, 85–109. Chicago: Chicago University Press, 2017.
- Ogilvie, Brian. "Scientific Archives in the Age of Digitization." *Isis* 107, no. 1 (2016): 77–85. DOI: <https://doi.org/10.1086/686075>
- Östling, Johan, Erling Sandmo, David Larsson Heidenblad, Anna Nilsson Hammar, and Kari H. Nordberg. "The History of Knowledge and the Circulation of Knowledge: An Introduction." In *Circulation of Knowledge: Explorations in the History of Knowledge*, edited by Johan Östling et al., 9–33. Lund: Nordic Academy Press, 2018.

- Park, Katharine. "Observation in the Margins." In *Histories of Scientific Observation*, edited by Lorraine Daston and Elizabeth Lunbeck, 15–44. Chicago: Chicago University Press, 2011.
- Pomata, Gianna. "Observation Rising: Birth of an Epistemic Genre, 1500–1650." In *Histories of Scientific Observation*, edited by Lorraine Daston and Elizabeth Lunbeck, 45–80. Chicago: Chicago University Press, 2011.
- Pomata, Gianna. "Sharing Cases: The Observations in Early Modern Medicine." *Early Science and Medicine* 15, no. 3 (2010): 193–236. DOI: <https://doi.org/10.1163/157338210X493932>
- Pomata, Gianna. "The Recipe and the Case: Epistemic Genres and the Dynamics of Cognitive Practices." In *Wissenschaftsgeschichte und Geschichte des Wissens im Dialog/Connecting Science and Knowledge*, edited by Kaspar von Greyerz, Silvia Flubacher, and Philipp Senn, 131–54. Göttingen: Vanderhoeck & Ruprecht, 2013. DOI: <https://doi.org/10.14220/9783737001717.131>
- Post, Anna-Luna, and Andreas Weber. "Notes on the Reviewing of Learned Websites, Digital Resources, and Tools." *Isis* 109, no. 4 (2018): 796–800. DOI: <https://doi.org/10.1086/701651>
- Radin, Joanna. "'Digital Natives': How Medical and Indigenous Histories Matter for Big Data." *Osiris* 32, no. 1 (2017): 43–64. DOI: <https://doi.org/10.1086/693853>
- Rowse, A. L. *Simon Forman: Sex and Society in Shakespeare's Age*. London: Weidenfield and Nicholson, 1974.
- Sawyer, Ronald. "Patients, Healers, and Disease in the Southeast Midlands, 1597–1634." PhD diss., University of Wisconsin, 1986.
- Schreibman, Susan, Ray Siemens, and John Unsworth, eds. *A New Companion to Digital Humanities*. Chichester: Wiley Blackwell, 2016. DOI: <https://doi.org/10.1002/9781118680605>
- Stolberg, Michael. "Empiricism in Sixteenth-Century Medical Practice: The Notebooks of Georg Handsch." *Early Science and Medicine* 18, no. 6 (2013): 487–516. DOI: <https://doi.org/10.1163/15733823-0186P0001>
- Stolberg, Michael. "Learning from the Common Folks: Academic Physicians and Medical Lay Culture in the Sixteenth Century." *Social History of Medicine* 27, no. 4 (2014): 649–67. DOI: <https://doi.org/10.1093/shm/hku035>
- Terras, Melissa, Julianne Nyhan, and Edward Vanhoutte, eds. *Defining Digital Humanities: A Reader*. London: Routledge, 2013.
- Thomas, Keith. *Religion and the Decline of Magic: Studies in Popular Beliefs in Sixteenth- and Seventeenth-Century England*. Harmondsworth: Penguin, 1973 [1971].
- Traister, Barbara. "Medicine and Astrology in Elizabethan England: The Case of Simon Forman." *Transactions and Studies of the College of Physicians of Philadelphia* 11, no. 4 (1989): 279–97.
- Traister, Barbara. *The Notorious Astrological Physician of London: Works and Days of Simon Forman*. Chicago: Chicago University Press, 2001. DOI: <https://doi.org/10.7208/chicago/9780226811420.001.0001>
- Vanden Broecke, Steven. "Dee, Mercator, and Louvain Instrument Making: An Undescribed Astrological Disc by Gerard Mercator (1551)." *Annals of Science* 58, no. 3 (2001): 219–40. DOI: <https://doi.org/10.1080/00033790016703>
- Yale, Elizabeth. "The History of Archives: The State of the Discipline." *Book History* 18 (2015): 332–59. DOI: <https://doi.org/10.1353/bh.2015.0007>
- Yeo, Richard. *Notebooks, English Virtuosi, and Early Modern Science*. Chicago: University of Chicago Press, 2014. DOI: <https://doi.org/10.7208/chicago/9780226106731.001.0001>

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