

## NOTEBOOKS AND BACONIANISM IN EARLY MODERN ENGLAND

Richard Yeo, *Notebooks, English Virtuosi, and Early Modern Science* (University of Chicago Press: Chicago & London, 2014), ISBN 9780226106564 and 6731 (e-book), 384 pp.

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This book is an examination of the practice of note-taking in the scientific circles of seventeenth-century England, with a focus on the Baconians, on those groups and figures that saw Baconian natural history or the large-scale accumulation of empirical particulars as the bedrock of all scientific knowledge. Boyle, Hooke, Locke and Hartlib are the characters discussed at length in this context, with Pell, Beale, Evelyn, Lister, Ray and others present alongside them to complete and, in some cases, complicate the narrative. Yeo argues that these figures made note-taking part of the scientific ethos *and* that the form their notes took was heavily influenced by humanist practices of information management. His study, then, is meant to add another brushstroke to the ‘humanist origins of modern science’ picture that has emerged in the last few decades of scholarship.

The fact that copious note-taking came to be an essential component of natural philosophical inquiry in the Baconian mode is not surprising. Yeo points towards the larger trend in the period to regard experience as a collection of discrete events tied to a specific time and place instead of a collection of generalized statements of fact, like in the Aristotelian framework (a point familiar to everyone from the works of Peter Dear). The importance, level of detail and number of written experiential reports were bound to increase as a result. Bacon and his followers are an uncommonly good case study in this direction for at least two reasons. The more obvious one is that for them knowledge begins with the amassing of empirical particulars. Their multitude and their avowed primacy over higher-order theoretical patterns that might intelligibly link them together and thus aid recollection makes it unavoidable that these particulars would be entrusted to paper, and not to the individual memory of the researcher. The second reason is the fact that Bacon’s followers in the Royal Society developed fairly sophisticated standards for what counted as good empirical testimony. Precise and detailed description of the observed events or experiments was one of the requirements, and this was again something that inclined the balanced towards the use of notebooks.

The Baconian project was designed as an open-ended, collective enterprise. In practice this meant that it was subject to two sets of tensions: i) how to best work with and share a repository of knowledge that was supposed to be open-ended and subject to revision and ii) how to disseminate information widely but discriminately. One of

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the strongest points of Yeo's book is that he shows how the interplay between print and scribal communication (notes and letters) helped address these tensions. While "the fixity offered by print was most beneficial toward the end, not the start, of scientific inquiry,"<sup>1</sup> notes offered a good medium for storing and manipulating this fragmentary and provisory knowledge, especially when they were themselves conceived as individual, detachable items (a notion that caught the interest of Hooke and Hartlib, and was at the center of Harrison's famous device for note-storing, the *arca studiorum*). Sharing notes was also an effective and flexible way of disseminating information within smaller, self-defined communities. One highly-successful example of this practice in a scientific context is the close collaboration between John Ray and Martin Lister, covered by Yeo in Chapter 8. A more general example, but of the same Baconian extraction, is that of Prussian émigré Samuel Hartlib and the network of correspondence and shared information he created and governed over. (Hartlib's papers are the focus of Chapter 4.) On the side of print, *Philosophical Transactions*, the journal of the Royal Society, spread information to and helped build an extended community that could participate in the accruing of new data. Described by its founder as a "philosophical commonplace bo[k],"<sup>2</sup> *Philosophical Transactions*, Yeo tells us, functioned much like an institutional notebook. Oldenburg's description, while not entirely accurate, brings us to the second major topic of the book under review: how the notebooks of the English virtuosi were essentially indebted to the format of the Renaissance commonplace books.

The practice of commonplacing – of excerpting, collating and organizing excerpts thematically under 'heads' or 'places' – had a long history and a powerful presence in both humanist and neo-scholastic education, but was in a marked decline by the second half of the seventeenth-century. This is a story masterfully told in Ann Moss' *Printed Commonplace-Books and the Structuring of Renaissance Thought*<sup>3</sup> and challenged in some of its details by Yeo here. While acknowledging the general decline, he challenges Moss' account of its severity both by offering examples of people who did not practice the anti-commonplace-book stance they were preaching and by arguing that the various components that made up the practice of commonplacing, "the authority of canonical texts, the value of a *copia* of quotations, the Aristotelian framework of categories, the cultivation of memory and rhetoric[,] unraveled at unequal rates."<sup>4</sup> This last point means that someone rejecting the reliance on books and textual authorities could still find the thematic principle of organization practiced in commonplace books useful, and most of those discussed in *Notebooks, English Virtuosi and Early Modern Science* did. They entered empirical data in their notebooks and, following Bacon's advice, they used heads both to index and (provisionally) structure their lists of particulars and to guide further inquiry. Some of the notebooks discussed by Yeo (for example those of John Locke) combine traditional textual commonplacing with scientific recording. This often resulted in a stretching of the commonplace book format to accommodate the specific requirements of experiential reports (for example, the fact that for specific sets of information, strict and detailed chronological order had to be a guiding principle).

In the preface, Yeo outlines three general theses his book is intended to support. Two of them I have alluded to above: the continued existence of an

important manuscript culture in the early modern culture despite the rise of print, and an incipient shift towards the externalization of memory, towards using written material more as a substitute of individual memory than as a tool to strengthen it. These elements were generally well and richly instantiated by the material discussed in the book. Yeo took pains not to oversimplify the picture, by stressing, for example, the varied range of attitudes towards individual memory and its importance present in the period. The third thesis, however, is less satisfactorily argued for, overall. Commonplace books are associated with ‘bookish pedagogy’ of the sort the exponents of experimental philosophy liked to reject. By showing that these figures actually refashioned commonplace books as tools to serve their own goals, Yeo hopes to reject a simplistic ‘two culture’ view of the early modern period. This stated goal, which frames the first chapters of the book, is somewhat hampered by the fact that the overall emphasis in the book is on the encounter of the old, commonplace book form with the new, empirical content. Discussions of bookish content and its interactions with empirical content receive less attention in a less systematic fashion throughout the book. Books and experiments both do well with notes, and they might even do well together, as a quote from fellow of the Royal Society and Savilian professor of astronomy at Oxford Edward Bernard goes,<sup>5</sup> but we are not really sufficiently shown that side of the story here.

Overall, however, this is a highly valuable addition both to the history of reading and to that of science. In her contribution to the special *Intellectual History Review* issue on note-taking that she co-edited with Richard Yeo, Ann Blair says that “the discipline of history develops by calling attention to new sources and asking new questions of well-known materials” and those are things that can a study of the practice of note-taking can deliver.<sup>6</sup> This history of early modern note-taking delivers them both.

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## References

<sup>1</sup> Yeo, R., *Notebooks, English Virtuosi, and Early Modern Science* (University of Chicago Press: Chicago & London, 2014), xiv.

<sup>2</sup> Oldenburg to René Sluse, April 2, 1669, quoted in Yeo, R., (2014), 225.

<sup>3</sup> Moss, A., *Printed Commonplace-Books and the Structuring of Renaissance Thought* (Oxford: Clarendon Press, 1996).

<sup>4</sup> Yeo, R., (2014), 17.

<sup>5</sup> “Books and experiments do well together, but separately they betray an imperfection, for the illiterate is anticipated unwittingly by the labors of the ancients, and the man of authors deceived by story instead of science. The happy Royal Society adjusts both together, and I doubt not but, in a short while, will approve itself so great a friend to and near ally to the Universities.” Edward Bernard to John Collins, April 3, 1671, quoted in Yeo, R., (2014), 12.

<sup>6</sup> Blair, A., “The Rise of Note-Taking in Early Modern Europe”, *Intellectual History Review* 20/3 (2010): 303-316.