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## A Prehistory of Peer Review: Religious Blueprints from the Hartlib Circle\*

Brent Ranalli<sup>†</sup>

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The conventional history of modern scientific peer review begins with the censorship practices of the Royal Society of London in the 1660s. This article traces one strand of the “prehistory” of peer review in the writings of John Amos Comenius and other members of the Hartlib circle, a precursor group to the Royal Society of London. These reformers appear to have first envisioned peer review as a technique for theologians, only later proposing to apply it to philosophy. The importance of peer review was as a technique that would permit a community of theologians or philosophers to resolve disputes internally rather than publicly, since public disputation would (they believed) sow doubt, error, and confusion, and disrupt the social order.

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The history of modern scientific peer review has yet to be written authoritatively, but it is beginning to take shape (Zuckerman and Merton 1971; Kronick 1990; Burnham 1990; Spier 2002; Biagioli 2002, 2003; Rennie 2003). According to the best recent scholarship, most notably the work of Mario Biagioli (2002; 2003), that history starts in 1663, when the recently formed Royal Society of London passed a resolution authorizing the publication of books under its imprimatur, as permitted under its Royal Charter. The resolution required that every book be reviewed by at least two members of the council of the Society. The purpose of this review was to ensure that “nothing but what is suitable to the design and work of the society” was published (Birch [1756] 1968, 347)—in other words, that nothing was published outside the scope of what the Charter permitted and the Crown would consider innocuous. The French Académie Royale des Sciences adopted similar licensing review procedures in 1699.

Such is our current understanding of the origins of modern scientific peer review.<sup>1</sup> But the existence of a history suggests a prehistory. We expect to find a great deal more continuity of practices, ideas, and social networks than the

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<sup>1</sup> Two important shifts occurred before peer review took the form we know today. First, as the importance of state-mandated censorship declined, academies developed policies for reviewing journal submissions specifically for quality. The Royal Society of Edinburgh pioneered this

conventional myth of the “scientific revolution” implies (Shapin 1996). So where to look for a prehistory of scientific peer review?

Biagioli (2002) points out a couple of examples from the Catholic world. He notes that in the 1620s members of the Accademia dei Lincei reviewed Galileo’s *Assayer* before he submitted it to censors, and that from the late sixteenth century the Jesuits had a rigorous review system to ensure not only orthodoxy but also quality. Reaching back even further, Spier (2002) points to proposals for something akin to physician peer review in the writing of Ishaq bin Ali al-Rahwi (CE 854-931). I wish to draw attention to evidence of a “prehistory” of peer review much closer to the early Royal Society, specifically in the so-called Hartlib circle, a group of reform-minded scholars and divines that gathered around London philanthropist Samuel Hartlib in the mid-seventeenth century. This group contributed several prominent members to the early Royal Society, including Robert Boyle and Henry Oldenburg (Webster 1976).

The most celebrated member of the Hartlib circle was the Czech priest, pedagogue, and “pansophic” reformer of the sciences Jan Amos Komenský (John Amos Comenius). Late in life, Comenius published his treatise *Via Lucis* with a dedication to the Royal Society, the only time he ever addressed that body in writing. In the 1668 dedication Comenius exhorted the members of the new scientific society to publish their truth-claims in a manner that is open to critical scrutiny, reproduction, and verification by peers (indeed, by any reader):

Let your researches into Natural objects be so well established, let them bear upon their face so complete an assurance of trustworthiness, that if a man desires not merely to contemplate your work as long as he likes with his unaided eyes, but even to try its accuracy by the most exacting tests of his own device, he shall be certain to find that the facts are precisely what you have shown them to be. It will be an admirable precedent: and will encourage those who are at the helm of human society in the State, or of the consciences of men in the Church to act in the same way, following indeed the example of the Apostles who did not fear to submit all their doctrines to the scrutiny and judgment of the world (1. Cor. iv. 3, 4). (Comenius [1668] 1938, dedication 22-23)

It is characteristic of Comenius to treat religious matters and scientific matters (and even, as here, political matters) in parallel. In this passage Comenius

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practice in 1731. The Royal Society of London followed suit when it took over editorial responsibility for the *Philosophical Transactions* in 1752 (Kronick 1990). Second, due in part to increased scientific specialization, editors of scientific journals began delegating review to outside experts rather than reviewing submissions in-house. This transition was more or less complete by the middle of the twentieth century (Burnham 1990).

encourages the scientists in London to set an example for religious leaders by welcoming critical scrutiny. But there is no reason to assume that this clergyman who dabbled in scientific matters derived his own ideas about religious reform from scientific precedents—rather, we should expect the reverse. Given Comenius’s abiding interest in irenic religious reform (an interest shared with other members of the Hartlib circle), is there any indication that his commitment to scientific peer scrutiny has precedents in the religious sphere?

As it turns out, Comenius did have such religious precedents at hand—not only the allusion to 1 Corinthians (which is of doubtful relevance, as the Apostle Paul invites judgment only to dismiss it), but, more germanely, in his own writing and experience and the writing of Gabriel Plattes, another member of the Hartlib circle. These precedents add an additional layer of interest by limiting the review of new truth-claims, at least initially, to professional peers.

Let us begin with Plattes. His *Macaria*, a short utopian work written in the form of a dialogue, was published in London in 1641.<sup>2</sup> In this work Plattes addresses the question central to the reformers’ irenic concerns: how to resolve religious disputes. In the fictional land of *Macaria*, we learn, the clergy are of one mind: “There are no diversitie of opinions amongst them.” He explains how this unanimity is achieved and maintained:

They have a law, that if any Divine shall publish a new opinion to the Common people, he shall be accounted a disturber of the publick peace, and shall suffer death for it.... If any one hath conceived a new opinion, he is allowed everie yeere freely to dispute it before the Great Councell; if he overcome his Adversaries, or such as are appointed to be Opponents, then it is generally received for truth; if he be overcome, then it is declared to be false. ([Plattes?] 1641, 7)

The religious doctrines in *Macaria*, Plattes suggests, are superior because they have been shown to withstand “the grand test of extreme dispute” ([Plattes?] 1641, 7). But the extremity of the dispute is really a secondary matter. Seventeenth-century Europe, with its bitter sectarian rivalries, had disputes in plenty to test any controversial doctrine. What was significant about *Macaria* is that the theological disputes were resolved internally, in the private, professional space of the theological community. They were not allowed to become public controversies that could threaten the social order.

In *Panorthosia*, written during Comenius’s later years and not published during his lifetime, Comenius echoed this idea of theological peer review:

They [members of a proposed Ecumenical Consistory] will pay careful attention to the canons of particular churches to ensure

<sup>2</sup> Charles Webster (1972) demonstrated that this anonymous work, traditionally attributed to Hartlib, was most likely written by Plattes with Hartlib’s input and encouragement.

that they are not inconsistent with nor contrary to the Universal Canons: for this would give rise to disagreements and secessions. If any Church or any learned Churchman has any useful observation to make, they should submit it for consideration in the first instance to the local Consistory of the whole Kingdom, and finally, if it presents a really difficult problem, to the Ecumenical Consistory. If it is well-received, it will be approved: and thus it will carry more weight and serve a more useful purpose than if its trial and adoption were sanctioned only by an individual decision. (Comenius [1966] 1995, 242)

Again, there is room for debate about doctrine, but the debate will be conducted behind closed doors, where it will not inflame public passions. This line of reasoning is supported by the distinction that sixteenth- and seventeenth-century irenicists made between “essential” and “non-essential” articles of faith.<sup>3</sup> On the assumption that Lutherans and Calvinists (for example) agreed on all points of doctrine necessary to salvation, and differed only on non-essential points, irenicists argued that theologians should refrain from publicly disputing the non-essential points, reserving them for private scholarly discussions (e.g., Zachman 2004, 91; see also the chapters by Erika Rummel and Howard Hotson in the same volume).

Comenius incorporated these ideas directly into his philosophical reform program in the body of *Via Lucis*, composed in London during Comenius’s visit to Hartlib in 1641-42, shortly after the publication of *Macaria*.<sup>4</sup> In *Via Lucis* Comenius proposes that elite scholars of every nation should join in establishing a Universal College dedicated to perfecting scholarship for the benefit of the human race.

They must not neglect to advise one another and by common counsel to set right whatever in those books [a trio of “pansophic” books intended to reform human knowledge] is found to need supplement or correction. And beyond this, whenever it is granted to any man to perceive any part of a more intimate mystery, he will not at his own discretion bruit it abroad, but will communicate it to his brethren so that the truth of what he has discovered may be established by fit and proper tests, and so whatever God has given may be carried into the common treasures of common knowledge for the profitable and

<sup>3</sup> The distinction was not new in the sixteenth century. For a good brief historical overview of the idea of adiaphora (things customary but inessential to salvation) in the Christian tradition, see Verkamp (1975, 55ff).

<sup>4</sup> Although it was not published until 1668, *Via Lucis* presumably circulated in manuscript. A copy was in the hands of his London friends in 1642 (Comenius [1668] 1938, dedication 5; Turnbull 1947, 367).

wholesome use of mankind. And care must be taken that only those things which are truly mysteries [i.e., valid insights] shall be held or proclaimed to be such. (Comenius [1668] 1938, 174-75)

We see again the familiar concern to keep error and dissension from spilling over into the public sphere. Though Comenius is talking here about universal scholarship, not just theology, the overtly religious language and reference to scientific or philosophical insights as “mysteries” reinforces the idea that he borrowed the sense of this passage from a religious context, quite possibly *Macaria*.

It is worth noting that Comenius had other sources to draw on besides *Macaria* for the idea of “peer review” in religion. Doctrinal issues within his Hussite sect, the Unity of Brethren, had long been decided on the basis of consensus (Brock 1957; Atwood 2009). Even in secular matters, disputes between members of the sect were supposed to be resolved internally, by a panel of peers (“a panel of arbitrators appointed from among fellow members”), rather than in the law courts (Brock 1957, 216).<sup>5</sup> For the minority sect, resolving internal disputes quietly and directly was a religious commitment—*caritas* in action—and it was also a means of communal self-preservation in an often hostile political-religious environment.

The relation between public religious dissension and social strife is obvious, and was tangibly so in the era of the Thirty Years’ War and the English Civil War. A similar relation between public scientific dissension and social strife is less obvious to us, but it was clear to Comenius.<sup>6</sup> Fellows of the early Royal Society appear to have been sensitive to it as well. Steven Shapin and Simon Schaffer (1985, 332-33) suggest that Robert Boyle and his colleagues were acutely aware that problems of knowledge are intimately bound up with problems of social order, and that this impelled them to conduct their disputes behind closed doors, away from the eye of the public. Both the privacy of their deliberations and their exercise of peer review vis-à-vis the written word can be understood as forms of self-censorship, designed to shield from public view tedious technical arguments, ungentlemanly disagreements, and inchoate or imprudent theses—“dirty laundry”<sup>7</sup> that, if exposed to view, had the potential to prejudice the public or the royal patron against the fledgling institution.

<sup>5</sup> An example from Comenius’s own experience: After a Polish co-religionist denounced his pansophic proposals as impious, Comenius was obliged to explain his ideas before a synod of the assembled clergy of the sect in 1639 (Comenius [1669] 1975, par 49). The outcome, Comenius reports, was that his pansophic calling was given the Church’s blessing and the dispute was put to rest.

<sup>6</sup> See, for example, his description of the learned class in his allegorical *Labyrinth of the World* (Comenius [1631] 1942) and his prescriptions for peace and concord through reform of intellectual life (e.g., Comenius [1668] 1938, dedication 4).

<sup>7</sup> This expression is climatologist Michael Mann’s. Sending an old data file to an inquiring

To sum up: The history of modern scientific peer review begins with the censorship practices of the Royal Society of London in the 1660s. A “prehistory” of the idea of scientific peer scrutiny and censorship can be traced in the writings of the Hartlib circle of reformers who were prominent in London a generation earlier, in particular to the pansophic writings of Comenius. Comenius, in turn, took his cue from proposals and practices in the religious sphere, where peer scrutiny and corporate self-censorship among theologians was intended to reduce public controversy. Comparison of the Hartlib circle’s prescriptions and the Royal Society’s practices suggests that the prevention of unnecessary public controversy was a common motivation, and indeed it is one that still resonates today.

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colleague in 2003 as an e-mail attachment, he noted that the file was unpolished and incomplete, and requested that it not be distributed further. “This is the sort of ‘dirty laundry’ one doesn’t want to fall into the hands of those who might potentially try to distort things.” The data file was secure, but the e-mail itself (dated July 31, 2003, and assigned the number 1059664704) was one of the 1,073 that were stolen from the University of East Anglia’s Climatic Research Unit in 2009 and released to the public, leading to just the sort of distortion Mann feared. The “Climategate” scandal has reinvigorated scholarly interest in the institution of peer review (see, for example, the appendices to the official Muir Russell report: <http://www.cce-review.org/pdf/FINAL%20REPORT.pdf>). Arguably, the scandal demonstrated both the necessity of a safe and private space in which scientists can do their work, as discussed in this essay, and the risks scientists court when they assume an overly closed and defensive posture.

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