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# Oliver Hill: An Impertinent Ass
## A Puritan Mystic and Cambridge Philosopher at the Royal Society, 1677–1682

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**Abstract:** The early Royal Society was an intellectual movement with remarkably homogenous epistemological and methodological features. Despite the petty squabbles fellows occasionally engaged in, general agreement existed among them about the principles, methods, and aims of their collective enterprise. On rare occasions, however, the society was genuinely infiltrated by someone with incompatible conceptions and principles, upsetting the sober equilibrium of society meetings. One spectacular example of such an intruder was the Cambridge-educated Oliver Hill who was fellow of the society from 1677 to 1682. This paper offers an account of Hill's short tenure and studies some possible sources for better reconstructing two discourses, today lost, that he presented at meetings in December and January 1677/78. The paper aims to show how Hill, most often presented as a puritan mystic, also pursued a natural philosophical project in which he defended a speculative philosophy and spiritualist cosmology not unlike Henry More's.

**Keywords:** Early Royal Society, Oliver Hill, Robert Hooke, Henry More, George Keith, Puritan Mysticism, Speculative Philosophy, Experimental Philosophy, Descartes

## Introduction: Sober and Impetuous Men

The minutes of the early Royal Society include personal attacks, priority disputes, accusations of plagiarism, bad feeling, resentment, and distemper (often, but certainly not only, courtesy of a notoriously jealous Robert Hooke.)[1] Fellows did not form a homogenous group: they differed widely in their theological and political positions; they also differed in class and standing.[2] However, they were actively seeking, and largely succeeded, in insulating the society's activities from such discussions as might, as Marie Boas Hall notes, upset "the properly quiet atmosphere of learned debate." Indeed, she continues, "in the early years of the restoration of the monarchy it was intended that the meetings should allow men of all political and religious opinions to gather together peaceably to investigate the natural world, turning their backs, at least weekly for an hour or two, on the social and political world."[3] Moreover, Michael Hunter notes, the Royal Society made an important virtue of what Thomas Sprat in his programmatic *History of the Royal Society*, a work sponsored and curated by the society only a few years after its creation, called the "comprehensive temper" of the society, because of "the evidence it gave of the width of support for the new science."[4]

The latitude afforded fellows when it came to factors in principle irrelevant to natural scientific inquiry such as religious faith or political conviction did however narrow down considerably when it came to diverging approaches to natural science itself. The early Royal Society was an intellectual movement with remarkably homogenous epistemological and methodological features. Despite the petty squabbles they occasionally engaged in, general agreement existed among fellows about the principles, methods, and aims of their collective enterprise. Peter Anstey and Alberto Vanzo's latest book-length study of the "experimental philosophy" that emanated from Gresham College is only

[1] Thomas Birch, *The History of the Royal Society of London for Improving of Natural Knowledge*, 4 vols., London: A. Millar, 1756–1757, hereafter abbreviated Birch I-IV. Other abbreviations include: HOC = Henry Oldenburg, *The Correspondence of Henry Oldenburg*, eds. Alfred Rupert Hall and Marie Boas Hall, 13 vols., Madison: University of Wisconsin Press [vol. I–VI]/London: Mansell [vol. X–XI]/London: Taylor & Francis [vol. XII–XIII], 1965–1986.

[2] Michael Hunter, "The Social Basis and Changing Fortunes of an Early Scientific Institution: An Analysis of the Membership of the Royal Society, 1660–1685," *Notes and Records of the Royal Society* 31:1 (1976), pp. 9–114; Lotte Mulligan and Glenn Mulligan, "Reconstructing Science : Styles of Leadership and Social Composition of the Early Royal Society," *Social Studies of Science* 11:3 (1981), pp. 327–364.

[3] Marie Boas Hall, *Promoting experimental learning: experiment and the Royal Society, 1660–1727*, Cambridge: Cambridge University Press,1991, p. 11.

[4] See Thomas Sprat, *History of the Royal Society*, London: John Martyn, 1667, pp. 62–67; Hunter, "The Social Basis," pp. 10–11.

the latest testimony to this fact.[5] At the same time, as Daniel Garber has argued, the collective work of the society was ideally meant to ensure that whatever prejudices, preferences, and proclivities individual fellows might have, would cancel each other out in common discussion about matters of fact.[6] This particular kind of collectively negotiated reflective equilibrium went under the name of "soberness." As Sprat notes, the aim of "join[ing] many men together" was to create a "mingling of tempers" among potentially "impetuous men" so that "the more *judicious* ... may carry on the others strong conceptions, by soberer degrees, to a full accomplishment."[7] Bringing about such sober judgment was less a question of bringing together individually sober men as of establishing a mechanism of collaboration within which soberness was collectively constructed, taking departure in an initial commitment to accept concurring testimonies about matters of fact. As writes Sprat: "And I dare appeal to all *sober men;* whether ... they will not think, they are fairly dealt withall, in what concerns their *Knowledg,* if they have the concurring Testimonies of *threescore or an hundred*."[8] This commitment, working as a tacit contractual obligation, held together the Royal Society as a corporate body dedicated to the promotion of a particular form of knowledge, i.e. experimental learning.

It also made it all the more pernicious whenever that particular understanding of philosophical decorum was challenged. For, beyond the superficial confrontations and disputes among peers with largely similar aspirations, and the more subtle collective ambition of mutually regulating diverging individual tempers and inclinations, theoretically foreign perspectives occasionally found their way into Royal Society meetings. In some cases, these perspectives were easily absorbed and did not interfere with collective investigation. For example, a figure like Daniel Coxe, a fervent Helmontian, was admitted and appreciated as an active member because he committed to the practical tenets and rules of investigation of the society, including working collaboratively on experiment with Robert Boyle.[9] As another example, one can consider the destiny within the society of the curious papers of the celebrated physician, pharmacologist, and Paracelsian Theodore de Mayerne which were brought to society

[5] Peter Anstey and Alberto Vanzo, *Experimental Philosophy and the Origins of Empiricism*, Oxford: Oxford University Press, 2023.

[6] See Daniel Garber, "Fact, Fiction and Error in Bacon and the Royal Society," *Revista di Storia della Filosofia,* 21:4 (2016), pp. 563–578.

[7] Sprat, *History*, pp. 85–86.

[8] *Ibid*., p. 100.

[9] On Coxe in the Royal Society and his relations to Boyle, see Birch II, 25, pp. 32–40, and Michael Hunter, *Robert Boyle: Between God and Science*, New Haven: Yale University Press, 2011, pp. 149–150.

meetings over several decades by his son-in-law, Theodore de Vaux.[10] De Vaux was a valued fellow and the papers politely received. The papers sometimes offered occasional cause for discussing some curious fact or occurrence, but the members clearly struggled to put the papers to experimental-philosophical use. The most frequent response was, then, to merely note their existence in society minutes and promptly archive them.

Other figures who fit uncomfortably into the intellectual schemes of the Royal Society were however not always as quietly dispensed with. Much has been written about the noise generated by Thomas Hobbes's and Margaret Cavendish's confrontational relationships with the society.[11] But neither of them ever challenged the Royal Society from the *inside*. They were not fellows. Hobbes never attended a meeting, even as a visitor. Cavendish never repeated her famous visit at the society in May 1667.[12] On rare occasions, however, the society was genuinely infiltrated by someone with clearly incompatible natural philosophical conceptions and principles, genuinely upsetting the sober equilibrium of meetings in ways much deeper than the internal rivalries and priority disputes among regular fellows did.

One spectacular example of such an intruder was the Cambridge-educated Oliver Hill, an acquaintance of Robert Boyle who was fellow of the society from 1677 to 1682. This paper offers an account of Hill's short tenure at the Royal Society and studies some possible sources for better reconstructing two discourses, today lost, that he presented at meetings in December and January 1677/78. In the meagre work already existing on the topic, he is presented in a somewhat one-sided way as dogmatic religious thinker, a puritan mystic in the vein of John Everard and John Pordage, bordering on enthusiasm. Drawing on later work by Hill, including two theological texts and an essay written against followers of William Harvey and addressed to opponents at the Royal College of Physicians, the paper aims to show how Hill in fact pursued a natural

[10] See Mogens Lærke, "Worms in Teeth, Swallowed Bodkins, and Stained Agates: The Royal Society and the Curious Papers of Theodore de Mayerne," *The NOTCOM Blog*, September 10, 2024. URL: https://notcom.hypotheses.org/4032.

[11] On Hobbes and the Royal Society, see Steven Shapin and Simon Schaffer, *Leviathan and the Air-Pump. Hobbes, Boyle and the Experimental Life*, Princeton: Princeton University Press, 1985. On Cavendish and the Royal Society, see Samuel I. Mintz, "The Duchess of Newcastle's visit to the Royal Society", *Journal of English and Germanic Philology* 51 (1952), pp. 168–176; Katie Whitaker, *Mad Madge: Margaret Cavendish, Duchess of Newcastle, Royalist, Writer and Romantic*, Chatto & Windus: London, 2003, pp. 368–369; and, more recently, Emily Wilkins, "Margaret Cavendish and the Royal Society," *Notes & Records of the Royal Society* 68 (2014), pp. 245–260.

[12] For the traces left by the visit of the Duchess of Newcastle in the journal books, see the minutes of the council and society meetings of 23 May 1667; the society meeting of 30 May 1667 (the day of the visit); and the council meeting of 17 February 1668, in Birch II, pp. 175–176, 177–178, 250.

philosophical project related but not reducible to his mystical puritanism, in which he defended a form of speculative philosophy and spiritualist cosmology not unlike Henry More's.[13]

## Two Discourses at the Royal Society

Not much is known about Oliver Hill's background, person, or career, but still enough to earn him an entry in the *Oxford Dictionary of National Biography*.[14] Marie Boas Hall and Michael Hunter have dedicated a few paragraphs to this minor intellectual and his membership of the Royal Society.[15] He was born c. 1630, and died c. 1705. Son of a certain Adam Hill, Esq. of Huntingdonshire, he was admitted at St. John's College, Cambridge, on 23 October 1648 at the age of eighteen.[16] We know nothing of his life for the next three decades, but in early November 1677, he was proposed as a fellow of the Royal Society by William Croone, on the request of Robert Boyle.[17] Given Boyle's standing in the society, his recommendation was sufficient, but I have found little in the minutes or elsewhere to explain how Boyle knew him or why he would recommend him in the first place. When exactly Hill was officially elected is not clear, but most likely the following week.[18]

[13] On the controversial definition of "puritan mysticism," I refer to Liam Peter Temple who describes early modern mysticism as "a personal and private spirituality, a 'way of knowing' which was 'experimental', 'experiential' and 'extraordinary,'" and puritanism as "community-driven desire for edification and self-improvement characterized by Bible reading, meditation, Sabbatarianism and fast day exercises," combined with "the belief in a higher spiritual elite" (*Mysticism in Early Modern England*, Woodridge: The Boydell Press, 2019, p. 1 and pp. 47-49). For the definition of "speculative philosophy," I follow Peter Anstey and Alberto Vanzo for whom speculative philosophy, contrary to experimental philosophy which is based on experience and induction, "proceed[s] from principles and maxims and to reason from them to create natural philosophical theories" (Anstey and Vanzo, *Experimental Philosophy*, p. 20).

[14] Anita McConnell "Hill, Oliver," *Oxford Dictionary of National Biography*, Online Edition. Version of 3 January 2008. URL: https://doi-org.ezproxy-prd.bodleian.ox.ac.uk/10.1093/ref:odnb/53038.

[15] Boas Hall, *Promoting experimental learning*, pp. 155–156; Michael Hunter (ed.), *Robert Boyle by Himself and His Friends: With a Fragment of William Wotton's Lost Life of Boyle*, London: W. Pickering, 1994, pp. lxxi–lxxii.

[16] John Venn and John Archibald Venn, *Alumni Cantabrigiensis*, Cambridge: Cambridge University Press, 1922–1954, vol. II, part 1, p. 372; John Venn and John Archibald Venn, *The Book of Matriculation of Degrees 1544-1659*, Cambridge: Cambridge University Press, 1913, p. 346.

[17] Society Meeting, 8 November 1677, Birch III, p. 351.

[18] Elections took place at society meetings. The minutes of the society meeting of 15 November make no mention of Hill but also end abruptly and are clearly incomplete (Birch III, p. 352). No regular society meetings after 15 November are recorded before 6 December. The digital records of Royal Society Past Fellows indicate Hill's day of election as the same day

The first indication of Hill's presence at a meeting is in Hooke's *Diary*, at the entry 30 November 1677 which indicates that the new member had been telling "Strange whimsys about the salt or soule of Corn."[19] The Royal Society minutes relate nothing of it. The first recorded contribution is from the 6 December meeting where Hill "made some queries concerning the use of quicksilver and spirit of wine in the making of the baroscope." Not satisfied with the answer he received, Hill declared "not thinking these sufficient reasons explained a theory, which he had of their usefulness in that instrument deduced from some chemical principles of his own, whereby he endeavoured to shew the reason of all the appearances."[20]

These were grand proclamations indeed. The stage was set for what happened the following week when our fellow offered a confrontational speech:

> Mr. Oliver Hill thought, that it was going very much about to begin with experiments and with theory, and affirmed, that he had, upon what had passed at the last meeting made several animadversions, whereby he had, from a theory, of which he was master, of the nature of the air and of mercury, and from principles of his own invention, plainly shewed the reason of all the experiments, which had been exhibited and discoursed at that meeting, and why things happened so and not otherwise, and that by his said theory, he could not only explain those there produced, but all others whatsoever of that kind; particularly those about the animals in pepper-water, and the experiments of the water-poises.[21]

Hill thus claimed possession of a global natural philosophical doctrine which, among other things, could account for the "nature of air," perhaps the most central topic of investigation of the Royal Society since its inception, but in a way entirely different from theirs and following a method of his own device. He moreover contested an experiment with microscopic animals in pepper-water previously conducted by Hooke on 15 November which had already been put on record as decisively proving "that there was no longer any doubt of Mr. Leewenhoeck's discovery."[22] Indeed, Hill felt that the society

of his being proposed, i.e. 8 November, and his admission as 30 November, at the anniversary election of the society council, but the minutes make no mention of Hill. Boas Hall indicates 13 December as the day of his election, which clearly is too late (*Promoting Experimental Learning*, p. 155). The most likely, I believe, is that he was elected on 15 November.

[19] Robert Hooke, *The Diary of Robert Hooke, 1672-1680*, ed. Henry W. Robinson and Walter A. Hooke, London: Wykeham Publications, 1968, Entry for Friday, 30 November 1677, p. 331.

[20] Society Meeting, 6 December 1677, Birch III, p. 360.

[21] Society Meeting, 13 December 1677, Birch III, p. 363.

[22] Society Meeting, 15 November 1677, Birch III, p. 352. Note that the Mr. Hill here recorded as having verified Hooke's experiment is Abraham Hill, also present at the council meeting on the same day.

as a whole with its emphasis on experiment was on a wrong track. The reply offered to this sweeping dismissal of the whole Royal Society enterprise by the then society president, Sir Joseph Williamson, represents as paradigmatic a statement as any of the governing practical principles of the society's particular brand of natural philosophy:

> [Hill] was acquainted, that the method and business of the Society were very different from those which he propounded; it being their aim rather to be directed by the operations of nature, duly observed, than by theories not built upon a sufficient and unquestionable foundation of observations and experiments.[23]

The rebuttal was clearly meant to put Hill on notice that he was out of line.

Hill, however, doubled down on his criticisms a week later. First, following scrutiny of the previous week's minutes, he started out with "some objections to what was entered as his sense at the last meeting; and said, that though he did maintain, that we ought to be ruled by a theory in the making all our experiments, yet he would be understood to have the theory founded upon previous experiments." Next, he complained that Hooke had not provided him with previous Royal Society observations on the baroscope, required for producing his own thoughts on the matter. He made some further remarks about the generation of microscopic animals in pepper-water. Notably, he categorically rejected a suggestion by Thomas Henshaw that air or water might contain seeds or eggs, arguing instead that the animalcules were produced by the "spirit" of air or water: "Mr. Oliver Hill replied, that there was no need of any such thing as a seed or egg, since there was a spirit of nature, which was every where; and where it found fit matter to work upon, there it produced an animal," and that "wherever there was a fit matter, the spirit would operate, and produce an animal." But not only that, he also claimed being able to offer experimental proof and "in time produce an animal six inches long" in a hermetically sealed glass containing only may dew, allegedly generated from the "spirit of may dew" alone. The discourse was not universally rejected, with one (Cambridge-trained) physician proving receptive: "[Edmond] King, an asse, admird him," as Robert Hooke bluntly notes in his diary.[24] However, when challenged by a generally sceptical assembly, Hill offered to conduct an experiment to prove his assertions, which he was encouraged to do "though it was believed, that the effect [he alleged] would in no wise follow such an operation." Finally, on this same fateful day,

[23] Society Meeting, 13 December 1677, Birch III, p. 363.
[24] Hooke, *The Diary*, Entry for Thursday, 20 December 1677, p. 335.

after having antagonised about as many prominent fellows as he could, Hill concluded by making an uncomfortable situation even more awkward when making good on his promise from the previous meeting, offering a "written discourse of his, about the method, which the Society ought to take in their proceedings, much different from what they then followed."[25] At that point, Hooke, for one, had made up his mind. A week later, an entry in his diary reads: "Oliver Hill an asse."[26]

Hill was however still not quite done. A few weeks later, 3 January 1678, he brought in a second paper on the nature of air which he presented in a similarly self-confident mode, categorically denying any merit to the experimentally based theory of the gravity of the air and assorted conception of air as a *menstruum* that Hooke presented at length on the same day:

> Mr. Oliver Hill then coming in affirmed, that there was no such thing as gravity in the air; but that air was positively light; and that all, who believed otherwise, were mistaken, and in a great error, as he would presently make appear both by reasons and experiments; and to this purpose alledged many things, which he affirmed he had more at large explained and better digested in a discourse, which he had then about him on that subject, and that he had drawn it up on purpose for that meeting; and that he would read it, if the Society thought fit, and continue those his discourses, if they met with entertainment worthy of them. After which he read his paper, a copy of which he promised to deliver to the secretary, between that and the next meeting, that an account thereof might be taken by the secretary.[27]

The society seems not to have "thought fit" that he continue. In any case, no further encouragement to do so was registered. In private, Hooke declared "O. Hill an Impudent coxcombly fool or enthusiastick quaker,"[28] deeming that he had "talkd impertinently."[29] There is no indication that Hill ever submitted as promised his second written discourse. He is not mentioned in the minutes of the following 10 January meeting, but some remarks from the week after suggest that he attempted but failed an experiment with air. On 17 January 1678, he then made a somewhat pitiful attempt at convincing the assembly that, in the meantime, he had succeeded the experiment

[25] For all quotes, see Society Meeting, December 20 1677, Birch III, pp. 366–367.

[26] Hooke, *The Diary*, Entry for Thursday, 27 December 1677, p. 337.

[27] Society Meeting, 3 January 1678, Birch III, p. 371.

[28] Hooke, *Diary*, Entry for 3 January, 1678, p. 338.

[29] *Ibid.*, Entry for Thursday, 10 January 1678: "I shewd 2 Experiments, 1 of gravitation, 2nd, a microscope, and O. Hill talkd impertinently." See also Mulligan and Mulligan, "Reconstructing Science," 350 (note, however, that the authors mistake Abraham for Oliver Hill as the "Mr. Hill" Hooke deems worthy of "good discourse" in the entry of 12 September, 1678, p. 376).

at home.[30] No calls were made for him to make another public attempt. The last allusion to these combative interventions was a wry remark by Hooke during the 24 January society meeting noting how "experiments, that had been formerly made by the Society" had been "the opprobrium of the Society from such persons, as thought themselves masters of all knowledge *a priori* and by revelation; and despised all such, as was acquired by experimental inquiry."[31]

Now chastened by his own failure, Hill's final contribution to the society was decidedly more muted, and only offered upon express request. Hence, at the meeting on 31 January, 1678:

> A letter was read directed to the Society from Mr. Edward Smith dated from his house without the south gate of Chichester, 22 January, 1678 , containing a discourse about the explication of the table of Hermes, and the grounds of his philosophy. It being late, the discourse itself could not be read; but Mr. Oliver Hill was desired to peruse it, and to communicate his thoughts concerning it at the next meeting; which he promised to do.[32]

Hill honoured his promise and, at the following meeting, offered his account of the "discourse of Mr. Smith." It was ordered that it "remained annexed to that discourse," including a curious phrase of uncertain status invoking the Greek god of silence: *Dignus, dignissimus, qui nunquam imprimatur; sed Monsieur Harpocrati asservandus mandetur, ne ullius manibus conteratur libellus.*[33] Hill, it seems, was as enthusiastic about Smith as he was dismissive of Hooke. No trace of Smith's text or Hill's annexed account remains and Smith's "most worthy" reflections are lost to posterity. Not much can be learned from this last episode, except that the society had perhaps found a way to manage Hill by using him as a kind of resident hermeticist, for providing summaries of various books and communicated papers in that area. Thus containing him was the way they found to collectively "sober up" this impertinent man and restore the equilibrium of tempers necessary for their collaborative enterprise.

After this, Hill receded from view although he did not yet completely disappear from Royal Society circles. An entry of 13 September 1678 in Hooke's diary refers to a coffee house meeting where "Oliver Hill shewd his confutation

[30] Society Meeting, 17 January 1678, Birch III, p. 374: "Mr. Oliver Hill affirmed, that the experiment, which upon trial at the last meeting had not succeeded, by reason, as he said, that the air was then moist and foggy, and consequently, according to his notion, had no elasticity, upon his making trial of it since, had succeeded as he expected."

[31] Society Meeting, 24 January 1678, Birch III, p. 378.

[32] Society Meeting, 31 January 1678 Birch III, p. 382.

[33] Society Meeting, 7 February 1678, Birch III, p. 384.

of Sir Sam. Moreland."[34] There is no further trace of this text, but Samuel Moreland had done work on hydraulics and a rudimentary steam engine in the mid-1670, the most likely object of Hill's disapproval.[35] More interesting is a cryptic remark found in John Aubrey's *Brief Lives* suggesting that Oliver Hill at some point in or before 1681 accused Robert Boyle of "grosse plagiarism."[36] No text has been identified, indeed nothing guarantees that the accusation was made in written form and not just orally at yet another coffee house meeting.[37] But made it was, and Michael Hunter has published a manuscript that likely is Boyle's response. In it, we learn that a certain "Mr H," described as person lacking in "calmeness & credit," had accused Boyle of purchasing his "Galenical and Chymical recipes" from a certain "L. S." and publishing them as his own.[38] Boyle, of course, rejected the accusation: "Mr H is mistaken in his ill grounded surmise ... Mr H has misinform'd you about the matter of fact."[39]

At any rate, Hill no longer attended society meetings, and he was eventually expulsed from the Royal Society in 1682 for not paying his arrears, along with 22 other delinquent fellows.[40] The lack of payment was possibly a mere pretext. If arguments were often made for keeping distinguished fellows who were in serious arrears on the membership lists for the sake of the society's reputation,[41] an inverse propensity to expel undistinguished or even embarrassing fellows for lesser offences likely existed as well. Hill was a spectacularly unsuited Royal Society fellow. But was he just *scientia inflat*, an impertinent "asse" puffed up by his own master theory? What, exactly, did Hill's two discourses contain and

[34] Hooke, *Diary*, Entry 13 September, 1678, 376. Society meetings were adjourned between 29 August 1678 (Birch III, 430) and 31 October 1668 (Birch III, p. 432).

[35] Moreland's work on hydraulics was much discussed in Hooke's social circles (which included Moreland himself) at the time. See e.g. Hooke, *Diary*, 13 June 1677, p. 295; 2 January 1678, p. 338; 28 March 1678, 350; 13 August 1678, p. 371.

[36] See the miscellaneous note associated with the life of Robert Boyle, in John Aubrey, *Brief Lives*, ed. Kate Bennett, 2 vols., Oxford: Oxford University Press, 2025, vol. I, p. 535: "Mr. Robert Boyle / vide Oliver Hill's … where he is accused of grosse Plagiarisme." See also *Brief Lives*, ed. Andrew Clark, Oxford: Clarendon Press, 1898, vol. I, under "Robert Boyle," including note 470. The source is MS. Aubr. 8 (fol. 12$^{v}$) dated as "Pars iii$^{tia}$ 1681" (see the description of the manuscripts in the Clark edition, p. 14).

[37] Note that the Lawson edition of *Brief Lives* here makes an unwarrented amendment: "*vide* Oliver Hill's *Book*" (John Aubrey, *Brief Lives*, ed. Oliver Lawson Dick, Ann Arbor: The University of Michigan Press, 1957, p. 57 (my italics).

[38] See Kate Bennet's commentary in *Brief Lives*, II, p. 1460, citing Michael Hunter, *Robert Boyle: Scrupulosity and Science*, Woodbridge: Boydell & Brewer, 2000, p. 57 and 221.

[39] See Robert Boyle, "Boyle's response to the allegations M . H," in Hunter, *Scrupulosity and Science*, pp. 154–156, here p. 154. "L. S." is identified by Hunter and Bennett as a certain James Feuillel la Saufray.

[40] Council Meeting, 9 August 1682, Birch III, p. 159.

[41] Hunter, "The Social Basis," p. 56.

what kind of natural philosophical program did they actually pursue? Indications beyond the Royal Society minutes are at first sight somewhat scarce. Hill delivered a written copy of his first paper on method at the meeting held on 3 January,[42] but it was, it seems, not archived. The second discourse on air was never submitted. It is also lost, even if, as we shall see, Hill did subsequently intend to publish it elsewhere. We can, however, learn more about Hill's philosophical program from his later publications.

## A Letter to the English

In the late 1680s, Hill moved with his family to Lisbon, where he was working as a kind of postal relay, facilitating the passage of letters to and from England. His petulant character did not go unnoticed on the Iberian peninsula. The English ambassador in Madrid helped Hill out of a Spanish prison after an ill-fated mission as agent to the English king in 1690, but also described him as "hot headed and inconsiderate," a "madman," and recommended that the king should not henceforth "employ him in any commission whatever."[43] Hill self-published an account of the affair.[44] Despite his turbulent personal life, Hill did however also find time to engage in more contemplative activities. Hence, around that same time, in 1689, he published, with a London publisher, a 58-page long *Epistola ad anglos, Being an introduction out of a larger treatise into the mysteries of true Christian religion, by Oliver Hill, exile for the law and the Gospel at Lisbon in Portugal*.[45]

In the *Epistola*, Hill sets out to show that "knowledge of God and Salvation is one thing," that "Knowledge or Wisdom must be Man's *Summum Bonum*" and "the *Nonplus ultra,* or rest, or perfect state of Mankind."[46] Chastising perfunctory and neglectful "Scholars" who have lost sight of "the end of Sciences," i.e. the knowledge of God, he makes a call for "true Knowledge" and the establishment of "real Sciences."[47] This initial polemical set-up turns on a strong version of the Aristotelian distinction between opinion and knowledge, with the former defined as knowledge of things derived from

[42] Society Meeting, 3 January 1678, Birch III, p. 371: "[Mr. Hill] delivered in a copy of his discourse, which he had made at the last meeting, about the worms in pepper-water; intitled, *Reflexions on the Transactions of the Royal Society in their meeting on Thursday, December* 6, 1677."

[43] NA: PRO, SP 94/73, fol. 12, cit. in McConnell, "Hill, Oliver."

[44] Oliver Hill, *An Account of Oliver Hill's Agency in Spain*, Lisbon: s. n., 1690 [in fact: 1691].

[45] Oliver Hill, *Epistola ad anglos. Being an introduction out of a larger treatise into the mysteries of true Christian religion, by Oliver Hill, exise for the law and the Gospel at Lisbon in Portugal*, London: printed for T. B., 1689.

[46] *Ibid.*, pp. 2, 4-5.

[47] *Ibid.*, pp. 1-2; see also p. 16.

personal beliefs or hearsay, and the latter defined as knowledge of things themselves and their causes:

> He that knows, being no more carried away by Conceits and Fancies, or Opinions, but apprehending all things just as they are in themselves, he believes them to be so, not because he conceives so, or hath heard that it is so; but because he sees plainly and understands perfectly *per causas*.[48]

While opinion is passively acquired, genuine knowledge, by contrast, is the expression of an active mind that has taken charge of its own powers to inquire into the true causes of things: "Wisdom, or the Knowledge that makes Free, is not a meer passive Theory, or bare Notion, but altogether active: For, as one hath defin'd it, Wisdom is *Lumen mentis*."[49]

While Hill's criticism mostly refers to his adversaries as an indeterminate group of "Masters and Scholars,"[50] interestingly, one rare named target is a Royal Society Fellow. Hence, while explaining that we should aim at the "perfect new birth in the Spirit of Wisdom" in which our salvation consists, Hill worries that

> very few Divines do know what [these things] are, and therefore pass them over, and teach with Dr. *Wallis, That we are not bound to know, and to trouble our selves with such nice Enquiries,* as if we were not to be saved by coming, saith *Paul,* 1 Tim. 2.4. *to the knowledge of the Truth.*[51]

Hill is citing a passage from two 1682 sermons on *The Necessity of Regeneration*, where John Wallis declares that we are not "obliged to trouble our selves with those nice Inquiries" into the compatibility of man's freedom with God' work upon our hearts, and that only "vain Curiosity, or proud Arrogance, ... makes men over Confident in such things."[52] This anti-speculative refusal to explore in any depth the metaphysical compatibility of human and divine action is incompatible with Hill's conception of "real science" which require understanding *per causas*. For Hill, Wallis's recommendation to avoid over-confident presumptuousness amounted to renouncing on knowledge and wisdom altogether.

As the criticism of Wallis illustrates, Hill's approach to "real science" yet again put him on collision course with a Royal Society famously cautious about

[48] *Ibid.*, p. 3.
[49] *Ibid.*, p. 10.
[50] *Ibid.*, p. 2.
[51] *Ibid.*, p. 18.
[52] John Wallis, *The Necessity of Regeneration in Two Sermons*, London: William Riger, 1682, pp. 32–33.

framing hypotheses regarding first causes and metaphysical matters. This was however not the only point on which they diverged. For if Hill insisted on distinguishing real science from opinion, he at the same time refused to draw any firm distinction between reason and revelation, i.e. between enlightenment of the understanding and the illumination of faith: "*Intelligere* being *ipsum credere,* as *Trismegistus* affirms, Faith is an Understanding, or *an Evidence*."[53] He elaborates the same point later in the text:

> Believing depends upon the Understanding: *Intelligere,* saith one, being *Ipsum credere:* the understanding of Things being the Belief itself; and the Belief or the Faith being an Understanding enlightned, *an evidence of things* to the Intellect, which are not seen by the Eye ... Faith, like Wisdom, being not perfected, but in the Act. Therefore a Man must be made seeing and understanding; his Eyes must be enlightned; and the Light must shine into the thick Darkness he stands in, before he can discern Truth from Opinion, and believe.[54]

Intellectual and mystical illumination are just two sides of a same wisdom acquired by an active mind, different aspects of a single knowledge of God which "includes all other Knowledge, not only that of himself, and of all the Mysteries of the Kingdom of Heaven, but much more that of the World."[55] The faith-based principles of mystical theology are therefore of one piece with the knowledge-based principles of natural philosophy, simply because they both offer "universal knowledge" into the unique cause of all things, namely God.[56]

On this basis, Hill goes on to develop a more detailed natural theological framework by drawing analogies between the natural and the divine, working on the assumption that *Deus est ubique semper sibi similis*—that God is always and everywhere equal to himself—and therefore "acts in all things alike."[57] Hill for example draws parallels between our natural life which begins in fire and our divine or new life which begins in spirit,[58] or compares the "Alkalick quality" of water described by "Chymists" with the Soul which "by reducing it self to water, becomes void and empty like water" and can "impregnated with the Spirit, or the Seed of heavenly Bridgroom."[59] Hill's attempt at explaining things themselves *per causas* gives rise to an emanative cosmology focused on water, fire, light, and spirit with clear Platonist undertones: "when God created the world, or ... did make himself manifest, he manifested himself

[53] Hill, *Epistola ad anglos*, pp. 10–11.
[54] *Ibid.*, p. 44.
[55] *Ibid.*, pp. 8–9.
[56] *Ibid.*, p. 8.
[57] *Ibid.*, p. 33.
[58] *Ibid.*, pp. 33–34.
[59] *Ibid.*, p. 22.

such as he is in himself; that is, by a Trinity in Unity, Fire, Light, and Spirit, in one Being."[60] Eventually, "all is made out of Spirit,"[61] and all things animated by a single "Spirit of the World."[62] The principles of his speculative approach to natural philosophy turn out to be spiritualist dogma borrowed from the mystical branches of early modern English puritanism, often grounded in esoteric, personal readings of Scriptural passages or in the doctrines of mystical writers ranging from Hermes Trismegistus to Thomas à Kempis.[63]

Experiment and observation play no essential role in the framing of such a doctrine. Nonetheless, even if the *Epistola* says nothing about the specific experiments with water and air intended to demonstrate a "Spirit of Nature" that Hill attempted at the Royal Society a decade earlier, he does at one point clearly refer to other, similar experimental observations, in order to demonstrate the same point:

> *All is made out of Spirit … and Water.* Spiritus est organum in manu summi Dei, quo agitantur omnes in hoc mundo species, *saith* Trismegistus *of it. Which Spirit coming down first from the Stars into the Air, and thence into the Water, works on it continually: whence an Oil is produced; and this Oil, by a longer digestion, becomes a Salt; which Salt is the first Matter and true Body of Concretes. This is demonstrable from the juices of Vegetables, if they be distilled before their Fermentation; but better by distilling some May-dew, or Rain-water; because being thin and light, and a transparent Liquor, by reason of their being circulated in the Air, they are not thought by many to have and contain an Oil, yet in their distillation they yield an Oil and a Salt, which must have been formed there by the Spirit from the Stars it was impregnated with, working upon its Vehicle, the said Dew or Rain-water.*[64]

The *Epistola* also provides some indications as to the exact status of such experimental "demonstration" for Hill. Most importantly, the text suggests that experiment plays no role in knowledge acquisition proper, but only serves to highlight phenomena that otherwise would escape our attention and never become the object of our active understanding, for

> thô the light of Wisdom doth make all things manifest, and expose to our View the hidden Causes of Things, yet it will not in this Life make us understand a Thing which we do not think upon; and prompt us, on a sudden, with the full Knowledge of that which, perhaps, we never heard and consider'd of before; without we take it into serious consideration, and meditate upon it.[65]

[60] *Ibid.*, p. 51.
[61] *Ibid.*, p. 20.
[62] *Ibid.*, p. 12.
[63] *Ibid.*, pp. 11, 20, 36, 52.
[64] *Ibid.*, p. 20.
[65] *Ibid.*, p. 42.

The *Epistola* thus offers some additional insight into the doctrine of a "Spirit of nature" that Hill put forward against Leewenhoeck's theory of eggs at the Royal Society meeting of 20 December 1677. Moreover, Hill's commitment to "real science" understood as deductive knowledge *per causas* explains his hostility to the inductive methods proper to the Royal Society experimentalism. Finally, his unwillingness to distinguish rational enlightenment from mystical illumination, making them equal expressions of the same *Lumen mentis*, explains why his own attempt at a speculative natural philosophy was built on principles drawn less from reason and intellect than from revelation and personal readings of scriptural passages.

## On Keith and the Quakers

Sometime after May 1700, now back in London, Hill composed a short commentary on a famous sermon by the schismatic Quaker George Keith, pronounced in London on 5 May 1700, where Keith declared his return to the Church of England.[66] Some of Hill's reflections in the text reveal mystical predilections similar to those found in the *Epistola*, taking up esoteric themes such as Francis Rous's conception of a "Mystical marriage to Christ" in passages depicting Christ as "the Bridegroom, infusing his Spiritual Seed in Man, and impregnating his Soul, which becomes his Mother thereby; and by the same means he becomes the Son of Man."[67] The 1700 *Remarks* do however also contain a more level-headed assessment of this very public religious controversy which offers some further hints to Hill's philosophical orientation.

In 1692, then in Philadelphia, Keith had fallen out with his brethren. After returning to England, he was also expelled from the English Quaker meeting in 1694. Subsequently, he violently attacked Quakers in publications

[66] Oliver Hill, *Remarks of Oliver Hill, upon Mr. Keith's farewell, or Abjuration Sermon at Turner's Hall*, s. l.: s. n., 1700 [?]. The pamphlet is not dated. All current library notices indicate "1698 (?)" as the date. But the text clearly comments on and cites George Keith, *A Sermon Preach'd at Turners-Hall, The 5th. of May, 1700. In which he gave an Account of his joyning in Communion with the Church of England. With some Additions and Enlargements made by Himself,* London: Printed by *W. Bowyer,* 1700.

[67] *Ibid*., p. 2; cf. Francis Rous, *The Mystical Marriage. Experimentall discoveries of the heavenly marriage betweene a soule and her saviour*, London: William Jones, 1631. Pursuing similar interests, Hill also edited a regular series of religious tracts in 1702–1703, called first the *Weekly Remembrancer*, then the *Weekly Remembrancer and Discoverer or Truths Spiritual and Temporal*, and finally the *Tell-Truth Remembrancer*. These later tracts contain little of interest for Hill's interactions with the Royal Society. Some of these publications are mentioned in Samuel Rogal, "Religious Periodicals in England During the Restoration and Eighteenth Century," *The Journal of the Rutgers University Libraries* 35:1 (1971), pp. 27–33.

and sermons, and eventually returned to the Church of England in 1700. The bone of contention between the Quakers and Keith was the "inner light," which the Quakers deemed sufficient for faith, while Keith did not. This is the controversy in which Hill intervened in his *Remarks*. Despite setting out to refute Keith, Hill cautions that he is not intent on defending his Quaker opponents either.[68] His own position is not easy to glean from the conclusion he reaches about Keith, which mostly amounts to an *ad hominem* critique: "I dare say, Mr. *Keith* is now as wise as he was when of the Presbyterian, or the Quaker Church or Sects; and that a good Bishoprick would much clarify his head, make him *Vir Clarissimus*,"[69] the sarcasm's implication being that the former Quaker only changed horses because he wanted to become a Bishop.[70] Still, if we turn to the central discussions of doctrinal matters—the question of the inner light—we do hit upon some analysis that can help pin down Hill's own views. Doing so, however, requires some context.

Keith was, before his expulsion, the most philosophical among the leading Quakers, with a particular affection for the Cambridge Platonists, Henry More and Anne Conway, with whom he became close during the 1670s and corresponded extensively.[71] As More wrote Conway in 1675, Keith was "very philosophically and platonically given, and is pleased with the Notion of the spirit of Nature."[72] However, according to More himself, the young Keith also misunderstood his teachings, in particular with regard to the sufficiency of the inner light for faith, which More insisted had to be supplemented by the reading of Scripture.[73] Hence, in the 1660 *Explanation of the Grand Mystery of Godliness*, More argued that, contrary to the view Keith attributed to him, in addition to the light of our conscience and the dictates of reason, "it is manifest that this *Lamp of God* that burneth in us, is fed and nourished from external

[68] Hill, *Remarks*, p. 1: "it is not Business to vindicate their Doctrine; I stand for Truth only against Error and Falsehood."

[69] Hill, *Remarks*, p. 8.

[70] Kirby, *George Keith*, p. 119.

[71] *Ibid*., pp. 7-8, 20-21, 29; Marjorie H. Nicolson, "George Keith and the Cambridge Platonists," *The Philosophical Review* 39:1 (1930), pp. 36–55; for the correspondence, see Marjorie H. Nicolson and Sarah Hutton (eds.), *The Conway Letters: The Correspondence of Anne, Viscountess Conway, Henry More, and Their Friends, 1642-1684*, 2nd ed., Oxford: Clarendon Press, 1992, pp. 380, 413.

[72] Henry More to Lady Conway, 11 August 1674, in *The Conway Letters*, pp. 391–392.

[73] More liked Keith as a person, and less his thinking. See Henry More to Lady Conway, 29 December 1675, *The Conway Letters*, p. 255: "[K]ieth is a good honest man, according to his measure, […] But he […] has too lubricious a reason and luxuriant phancy"; Henry More to Lady Conway, 14 July 1671, in *The Conway Letters*, p. 341: "[Keith] did not drinke deepe enough of what was there offered to him [in his reading of my *Mystery of Godlinesse*]"; Henry More to Lady Conway, 15 September 1670, in *The Conway Letters*, p. 513: "[Keith] is the best Quaker of them all, but yett y$^{t}$ is unexcusable in him y$^{t}$ he is so rudely and unjudiciously schismaticall."

objects" which include "the *outward Book of Nature*" and "external Writings and Records," i.e. "*Volumes of Nature* or of *Divine Revelation.*"[74]

Some three decades later, however, in 1700, failure to take into account "external writings"—i.e. Scripture—was exactly the mistake that Keith denounced in the doctrines of his younger self and his former Quaker brethren. Hence, Keith now argued, "there are divers positive Laws and Precepts of the Gospel, that *the Light within,* as it is an universal Principle, teacheth us nothing of: The Knowledge and Faith of all these things are given us by the written Word preached and read outwardly."[75] The Quakers "plead for the Sufficiency of the *Light within,* and *its Dictates,* without the means of Scripture .... This is a miserable Mistake, and a very gross and mischievous Errour."[76] The inner light must be supplemented by "the special Illumination and Operation of the Spirit accompanying the Scripture's Testimony."[77] This was what More also held, when correctly understood. Indeed, it has been convincingly argued that the older Keith's departure from Quakerism was in large part prompted by his continued personal interactions with More, eventually getting the position of the latter right.[78]

In his *Remarks*, Hill attempts to situate himself in relation to this configuration of different views. He refuses to adjudicate clearly between Keith and the Quakers, and moreover complains that Keith is "so very confuse[d], that it is a hard matter to find where he would be at."[79] Keith, he argues, misinterprets the Quakers' position. In fact, the Quakers consider the inner light to be more than just the natural light, or reason:

> He makes the Light of Nature, which he calls a General, or Universal Principle; the same as the Light within; ascribing no more to this than that which belongs to that .... And he argues against it, as taking it for granted, that the Quakers make of it no more than he doth himself; whereas they make it greater, and of a larger extent than any Natural Light, allowing a Distinction between them.[80]

[74] Henry More, *Explanation of the Grand Mystery of Godliness*, London: J. Flesher, 1660, esp. the discussion "Of the Light within us" and critique of the "Spiritualists," pp. 407–11, here p. 409. See Kirby, *George Keith*, p. 8. See also Henry More to Lady Conway, 14 July 1671, in *The Conway Letters*, p. 341.

[75] Keith, *A Sermon*, pp. 10–11. See also Ethyn Williams Kirby, *George Keith (1638–1716)*, New York and London: D. Appleton-Century Company, 1942, esp. pp. 95–112.

[76] Keith, *A Sermon*, p. 11.

[77] *Ibid.*, p. 9.

[78] See the commentary by Nicolson/Hutton in *The Conway Letters*, pp. 413, 480.

[79] Hill, *Remarks*, p. 4.

[80] *Ibid.*, p. 5. The reading is based on this passage in Keith, *A Sermon*, p. 9: "yet the utmost extent that this Light within goeth to teach Men without Scripture, and without the special Illumination and Operation of the Spirit accompanying the Scripture's Testimony, is no more than the Righteousness of the Moral Law, and Terms of the first Covenant." In other words, without Scripture, we have no access to Christian revelation but only to natural and Mosaic law.

For Hill, Keith identifies the inner light with reason and mistakenly attributes that view to the Quakers as well. However, Hill objects, "it is a great mistake to allow no more to that which [the Quakers] call the Light within, than to the Light of Nature."[81] Moreover, Hill believes that Keith, in certain passages, mistakenly imply that "the Compleat and Adequate Rule ... of our faith and Practice, is ... Revealed unto is in the Scriptures," and that "the Lawes and Precepts [t]hereof, are of far greater extent than those Writ in every Mans Heart."[82] However, Hill objects, "the Outward Word [is] but a Parable of it self unto all natural Men, and to their Light of Nature, " and therefore, "to it, belongs not that which Mr. Keith ascribes, and attributes unto it, viz. to be the compleat Rule of Faith, Conscience and Practice; but rather to the other inward and Spiritual Word."[83] Combining these passages, Hill's position boils down to this: If the inner light encompasses more than just natural light or reason, Scripture in return does not encompass more than the inner light. In other words, the inner light has both a natural and supernatural aspect, and the Scriptures are the external manifestation of the latter. In the hearts of the regenerated, he allows, all is therefore written "without the help of Scripture."[84] Others in a less fortunate state, however, should be "joining ... both the inward, and outward Word together."[85]

There is a lot to untangle here, including some misinterpretation of Keith on Hill's part. However, three important remarks can be made about Hill's position as it emerges from the discussion. First, the conception of the inner light as comprising both natural and supernatural light is in conformity with the position we have already seen Hill embrace in the *Epistola ad anglos*, according to which there is no real distinction between reason and revelation, between intellectual understanding and mystical illumination. Both are expressions of one and the same *Lumen mentis*. Second, the rationalist interpretation of Quaker doctrine that Hill refuses to endorse is not only the position that Keith attributes to the Quakers in his 1700 *Sermon*, but also essentially the position that More attributes to so-called "Spiritualists" (impostors aside) in the 1660 *Explanation*, and rejects.[86] Third, the position about the sufficiency of Scripture that Hill denounces in Keith is, in fact, not really held by the latter. The idea of joining inner light to Scripture, the inward and outward words, is in reality a position Hill shares with Keith, and that Keith in turn shares with More.

[81] Hill, *Remarks*, p. 5.
[82] Keith, *A Sermon*, p. 9, cit. in Hill, *Remarks*, p. 5.
[83] Hill, *Remarks*, p. 3.
[84] *Ibid.*, p. 3.
[85] *Ibid.*, p. 4.
[86] More, *Explanation*, p. 408: "[B]y the Light within them they must understand an accountable and rational Conscience within them, unless they be perfect Fanaticks or Mad-men."

There is, they all argue, a natural as well as a supernatural light in the human soul, both natural reason and a special operation of the mind associated with the reading of Scripture. Residual disagreement among them has to do with the finer points. First, Hill feels that Keith (and More, by extension) offers a reductive analysis of Quakerism by refusing to acknowledge that their "inner light" includes both a natural and supernatural aspect. Second, contrary to Keith (and More, by extension) who sees the special operation of the spirit associated with revelation as *prompted by* the reading of Scripture, Hill is more inclined to see Scripture as the external *manifestation of* a supernatural light, hence his claim that the regenerated has no use for Scripture. As should be evident, the two points are closely associated, and amounts to a double rejection of both excessive rationalism and excessive Scripturalism.

Despite his polemical style, Hill's approach to the public furore surrounding George Keith's religious tribulations clearly shows that he was both knowledgeable and nuanced in his assessment of these theological debates, and illustrate the consistency of his views between the *Epistola* and the *Remarks*. And while his interventions in the controversies around Keith do not directly inform Hill's earlier combative interactions with the Royal Society around natural philosophical method, they are nonetheless helpful for understanding the kind of theologico-philosophical environment our protagonist inhabited. Moreover, they provide additional context for understanding the role the Royal Society eventually assigned him, as a kind of in-house assessor of hermetic or mystical literature communicated to them (such as the now lost discourse of Edward Smith.) Finally, it is the first example of a discussion that brings Hill into theoretical dialogue with Cambridge Platonism, and with Henry More in particular. As we shall see in what follows, it is not the last.

## A Polemics Against the Royal College of Physicians

Hill's religious texts make no direct reference to his former relations to the Royal Society. Still, he did not abandon his interests in natural and experimental philosophy. In fact, later in life, he appears to have at planned the publication of some nine *Essays*, all or some under the initials "D. M., a Friend of Truth and Physick." Among this eclectic set of essays some were concerned with topics in religion and politics,[87] but others tackled natural philosophical topics

[87] The titles of religious and political essays include essay 2: *Of the true Grounds and Principles of the Christian Religion*; essay 4: *Of refined Politicks for all the Christian Princes*; essay 6: *Of a Trinity in God; and how a Trinity comes to be in the Unity*; essay 8: *How to encrease Trade and Coin in any Kingdom*; and essay 9: *Of the three Scholastick Trades, Divinity, Law, Physick, and of what they are come to*. I have not been able locate any of these papers, together or individually.

such as "the Cause of the Motion of the Earth" (essay 3), "the Non-Circulation of Blood" (Essay 5), and "the First Matter of Metals" (Essay 7). The title of Essay 1 is of particular interest: "Against the Gravitation and Pressure of the Air, being the Cause of fluid rising in the Pomp, and the Syphon, and Barometer." The title clearly corresponds to the second paper presented by Hill at the Royal Society on 3 January 1678. Unfortunately, however, most of these essays, including the essay on air, seem to have never been printed and are not extant. All we have is a list of their titles.

The one exception is the lengthy fifth essay, *Of the Non-Circulation of the Blood*, a book-length text published in two parts in 1700 and 1701.[88] The text begins with a *Dedicatory Epistle* addressed directly to Hill's opponents "at the House in Warwick Lane," i.e. The Royal College of Physicians.[89] In this tract, Hill attacks the "circulators"—i.e. the partisans of William Harvey's doctrine on the circulation of the blood developed in his 1628 *De motu cordis*, at this point widely accepted—at the Royal College of Physicians with what appears to be exactly the same theoretical apparatus that he mobilised some twenty-three years earlier at the Royal Society, although he is more explicit about his allegiance to Ancient knowledge, railing against "some Modern Reformators and Improvers of Knowledge [who] affect to be Inventors."[90] A couple of sections at the beginning of the first part are here of particular interest, because they return to the argument regarding the relation between theory and experiment closely resembling the argument Hill already outlined in his remarks on method at the Royal Society in December 1677. He writes the following:

> 1. ... tho' I am for Inventions and Improvement of Knowledge, yet being at the same time or old Truths and for old Ways, old Nature and the old World, against the Innovations which some Men would make in them; and against making new ones, and applauding new Whymsies, except when good for something, I dare here attempt this on behalf of the Ancients: for I am of Opinion, that both Nature and Knowledge being the same in old Times as

[88] Oliver Hill [under the initials D. M.], *The Fifth Essay of D.M. a friend of truth and physick, against the circulation of the blood: in two parts. The first, shewing its absurdity and impossibility three several ways ... The second, shews the true cause of the motion of the heart*, London: Printed for the Author, 1700 (Part I) / London: I. Dawks, 1701 (Part II). The two parts have consecutive pagination, with part I, pp. 55–88, and part II, pp. 89–158. For the list of titles of all nine essays by "D. M." or Hill, see p. 4.

[89] *Ibid.*, Part II, p. 1–16 (*pace* McConnell's entry on Hill in the Oxford DNB which mistakes Hill's opponent for the Royal Society.) Note that the pagination of the *Epistle* is separate from the main text and, contrary to what is the case in the copy I have consulted, held at McGill Library (McGillLibrary-osl_fifth-essay-D-M-friend-truth-physick_H647f1700-22105), the Epistle was intended to be bound with the first and not the second part.

[90] *Ibid.*, Part I, p. 7.

> they are in our Days, ... all they that had it of old, saw as far as we by it into Nature and the World, and were as able, and better to find Truth by it than we; as more in the way to it, because less prejudiced, and taking a better Course than we to find Knowledge by, seeing it *a Priori* by the Reason and Causes, then looking on the Effects, to confirm their Theory: whereas the Modern Sages seek *a Posteriori*, looking first on the Effects or Experiments they make, and then deducing from them the cause which they make them for, and they had in their Eye; for instance, in our case, where the Motion of the Blood is the thing they look into, and make their Tryals to prove, without regard to the Cause efficient of that Motion.
>
> 2. I am for a Theory confirmed by Experience, but not for framing of one by Experiments only, especially in Physick, which depends upon Principles invisible and spiritual, to wit, the Spirits themselves, less obvious to the Senses than to the Understanding; and in such Point as this, where the very Source of Life, *viz*. the Heart and its Motion, is the main Thing in question. *Experimentum fallax*, *Judicium difficile* to the great Masters themselves who knew things *a Priori*, such as was Hippocrates; and much more to their Scholars, that neither know nor will learn; and who, looking no further and higher than the Effects, are apt to mistake the Cause, and to conclude on Mistakes, taking what they find and see for what they seek and would see; just like those that make the *Bible* to say as they would have it, instead of examining their Opinion by the *Bible*.[91]

We recognise in this criticism Hill's discontent with those who renounce upon "true Knowledge," understood as knowledge of the underlying causes of things, that already transpired in the *Epistola ad anglos,* in his critique of John Wallis's sermons. Hill's stated preference for *a priori* knowledge is rooted in his method which insists on the necessity of proceeding from the cause to the effect rather than from the effect to the cause.[92] Mocking the experimentalists' predilection for the use of modern microscopes, he criticises them for merely magnifying the effects when they ought to be looking deeper into the causes. Similarly, in the case of the "circulators," instead of asking by what the pulsating motion is caused, "they conclude as Children do, that Blood and the Heart move, because they see them moving."[93] However, Hill insists, "if you did but bestow some of that time which you spend in Dissecting the Bodies, and in Microscopizing; upon the Contemplation of their Spirits, of Nature, and of that Tool whereby God works invisibly therein; you would find them

[91] *Ibid.*, Part I, pp. 6–7.

[92] On the preference given to *a priori* knowledge, see also *ibid.*, Part I, p. 88: "How much Pains wise Men must take to redress the Grievances Mankind doth labour under by pretended Modern Wit! and which would have been spared, if the Priest's Lips kept Knowledge, and the Universities taught to know *a Priori.*"

[93] *Ibid.*, Part I, p. 30.

plain enough."[94] No matter how well-made, microscopes will not reveal the existence of the "vital spirits" that according to Hill explain the pulsation of the heart.[95] But if the circulators had in fact asked the crucial question of the cause of the heart's motion, they would have been brought to the notion of "life," and asking for the cause of life would next have brought them to the notion of "spirit,"[96] and spirit would in turn have brought them to see how human beings are both similar to, and coextensive with the universe as a whole, for "if it be so in Nature, it is so likewise in Man, for Nature est *ubique Similis*, in all alike ... Life in Man is produced, preserved and maintained the same way as in Nature and the World."[97] And eventually, by inquiring into the nature and cause of universal spirit as such, they would have arrived at God: "What is a Spirit? Answer: It is a Substance invisible, immaterial, incorporeal, and simple and pure, or unmixt in God"; it is "the Substance of Substances, that actuates all Substance, being that alone exists; for God ... is but a Spirit himself."[98]

## Between Hill and More

The *Fifth Essay* is specifically directed against the "circulators" at the Royal College of Physicians, but also against prominent fellows of the Royal Society, namely Thomas Willis and Richard Lower. But who and what does he favour instead? Throughout the essay, Hill often pledges trust in one ancient figure in particular, namely Hippocrates whose aphorisms he frequently cites, notably the very first, *Experimentum fallax*, which he yields as a weapon against experimentalism.[99] But he offers little by way of identifying contemporary authors he draws on in formulating his own doctrine, except for a brief and undeveloped allusion to "Lully and some others, who understood Nature well."[100] His theological and cosmological views sometimes echo those of Jacob Boehme,[101] but more often those of fellow mystical puritans, including John Everard (†1641), the hermeticist of Clare College, Cambridge,[102] and the Philadelphian and Boehme-follower

[94] *Ibid.*, Part II, Epistle Dedicatory, p. 13.

[95] *Ibid.*, Part I, p. 12; see also III, p. 131: "If thou couldst but see thy felt within, as thou seest thy Blood, by means of a Microscope, thou wouldst see all thy Spirits moving to and from the Light flashing in thy left Ventricle; and streaming forth from thy Heart."

[96] *Ibid.*, Part II, pp. 91–92: "What is that thing called Life? tell me, Mr. Innovator, can you resolve this Question? … Life is a Motion, and begins at the Motion it receives from the Spirits."

[97] *Ibid.*, Part II, p. 129; see also II, p. 116.

[98] *Ibid.*, Part I, p. 35; see also I, p. 75.

[99] *Ibid.*, Part I, p. 11.

[100] *Ibid.*, Part II, p. 117.

[101] See McConnell, "Hill, Oliver," citing Bodl. Oxf., MS Rawl. D833, fol. 64*r*.

[102] On Everard's mysticism, see Temple, *Mysticism*, pp. 54–59.

John Pordage (1625–1698), with whom Hill seems to have been close. A later, unpublished text by Richard Roach on the Philadelphian Society thus reports that "Mr Pordage was intimately acquainted with Oliver Hill a great mystick of St John's College in Oxford [*sic*] who was familiar with Dr Everard."[103]

But is that all there is to Hill? It is easy to simply dismiss him, as Michael Hunter does, as a proponent of an "extreme religious position," defending "arcane views."[104] There can be no question that Hill was, as Marie Boas Hall writes, "a lesser fellow" and "a man of little intellectual weight."[105] One cannot, however, reduce the views he presented at the Royal Society, and reiterated in his later polemics against the Royal College of Physicians, to his mysticism. While he clearly draws on his knowledge of hermetic and mystical doctrine in articulating his master theory of vital spirits, the driving concerns and theoretical posture in the *Fifth Essay*, as also his earlier intervention at the Royal Society, are not principally theological, but physiological and cosmological. Moreover, his position is not quite as outlandish as previous commentary has made them out to be. In fact, beyond his mystical "whymsies," Hill's views often brings to mind a different Cambridge-educated thinker than Everard, one we have already encountered in relation to Hill's discussion of George Keith, namely Henry More.

Admittedly, the comparison invites some caution: obvious differences between Hill and More exist. Most strikingly, contrary to Hill in the Fifth Essay, More did not deny the circulation of blood. In fact, More wrote a celebratory poem to hail Harvey's discovery among the greatest of the time![106] Still, biographically, the *rapprochement* is not unjustified. Hill is likely to have acquired some familiarity with the doctrines of the Cambridge Platonists, including Henry More, as early as during his years at St Johns College, Cambridge, in the late 1640s and early 1650s.[107] Moreover, if we turn to the consideration

[103] Bodl., MS Rawlinson D. 833 fol. 64r, cited in McConnell, "Hill, Oliver," sect.1, and Sarah L. Green, *'Satan at Noon' : John Pordage and the Politics of Heresy*, PhD thesis, Faculty of Arts, School of Historical Studies, University of Bristol, May 2021, p. 116. On Pordage and the Philadelphians, see *ibid*., pp. 140–145. See also Peter Elmer, "Under the Operation of a Higher and Exalted Mind': Medicine, Mysticism and Social Reform in Restoration England," in Hilary Powell and Corinne Saunders (eds.), *Visions and Voice-Hearing in Medieval and Early Modern Contexts*, Chaim: Palgrave MacMillan, 2021, p. 289.

[104] Hunter, *Robert Boyle by himself,* p. lxxi-lxxii.

[105] Boas Hall, *Promoting Experimental Learning*, pp. 154–155.

[106] See Wallace Shugg, Walter Sherwin, and Jay Freyman, "Henry More's 'Circulatio Sanguinis': an unexamined poem in praise of Harvey," *Bulletin of the history of medicine* 46:2 (1972), pp. 180–189.

[107] I make no claims about specific inspirations or connections. It is impossible to determine what precise interactions Hill may or may not have had with Cambridge Platonists as a student. The year 1648, when Hill matriculated, was a few years after the purge of Royalists in 1644/45

broader issues of method, metaphysics, and epistemology, resemblances clearly overshadow the differences.

First, in the *Fifth Essay*, Hill complains about the circulators' adherence to "*la méthode*" (in French in Hill's text), clearly alluding to the rules of natural investigation laid down in Descartes's *Discours de la méthode,* from which it has resulted that "all Physick and Chymistry, and all Trades and Sciences are brought to meer Terms of Art; meer Receipts, a meer Method: all things are done *proforma*, formally; Formality is now the Soul of the World."[108] He also warns how such conceptions favour "the Materialists, who Know nothing of Spirits."[109] Descartes's mechanism is here clearly in Hill's crosshairs, with its fundamental, physical principles of inert matter, motion, and shape being denounced as excessively "formal" and "materialist." There is little more in the *Fifth Essay* that allows us to deepen the meaning of Hill's critique of Cartesianism, but when combined with his stated preference for "theory" and *a priori* principles, and the tell-tale use of the notion "materialist," a term first coined by the Cambridge Platonists in the late 1660s and 1670s, it seems likely that his position is informed by the Cambridge Platonists, and by Henry More in particular.[110] As is well documented, Henry More played a pivotal role in the

which saw figures such as Seth Ward removed, but these events largely spared the Cambridge Platonists. The same applies to the second purge in 1649/50. In 1648, Henry More was a fellow of Christchurch; John Smith was a fellow at Queens; Benjamin Whichcote was provost of King's and then, from 1650, vice-chancellor of the university; Ralph Cudworth was professor of Hebrew and Master of Clare Hall; George Rust became a fellow of Christ's College in 1649; Nathaniel Culverwell was fellow of Emmanuel College, but the lectures upon which was based his *Elegant and Learned Discourse of the Light of Nature* (posth. 1652) were delivered before Hill arrived, in 1645–1646. This said, students were largely confined to their college where they would receive tutoring by one specific fellow associated with that college; university-wide lectures had declined (Samuel L. Kaldas, *The Cambridge Platonists and Early Modern Philosophy*, Cambridge: Cambridge University Press, 2024, p. 37). The tutor of every new entrant to St John's college was, from 1630 onward, in principle recorded in the Order Book or Admissions register of the college, but I have not been able to identify Hill's. John Arrowsmith, a Calvinist puritan divine, was the master of the college at the time. On the life of fellows and students, and undergraduate training at St. Johns in particular, see Mark Nicholls, "The Seventeenth Century," in Peter Linehan (ed.), *St Johns College, Cambridge: A History*, Woodridge: The Boydell Press, 2011, pp. 94–160, esp. pp. 121–122 on the nebulous *curriculum* proposed to St John students but mentioning among others the Cambridge Platonists, and pp. 136–155 on college life during the Civil War and Interregnum when Hill attended.

[108] *Ibid.*, Part I, pp. 75–76.

[109] *Ibid.*, Part I, p. 87; see also Part II, pp. 131–132, where Hill speaks of "materiality" as originating in the devil.

[110] The first documented occurrence of the term "materialist" in the philosophical sense (the term is documented earlier, in the mid-sixteenth century, but in an another sense, namely as druggist or vendor of *materia medica*) can be found in Henry More's 1668 *Divine dialogues, containing sundry disquisitions and instructions concerning the attributes and providence of god in*

first reception of Cartesianism as one of the first to address Cartesian philosophy in print. More himself evolved from being an avid supporter of Cartesianism rationalism to becoming a ferocious adversary of Cartesian mechanism.[111] More thus subscribed to the Cartesian notion that natural philosophy had to be built on *a priori* principles, and never renounced on this speculative approach to the foundations of physics, setting him apart from the experimental philosophers. But he also eventually concluded that the *a priori* mechanical principles offered by Descartes were not acceptable because leading to materialism and atheism, but that matter had to be endowed with a spiritual or soul-like quality that he designated the "Spirit of Nature."[112] Hill's position is clearly similar. Indeed, with its appeals to the "spirit of nature," focus on "vital spirit" as the metaphysical cause of motion, talk of a "soul of the world" co-extensive with the human soul, and denunciation of "materialists," the underlying metaphysics of Hill's argument often appears directly informed by More's "essential notion of Spirit," theory of "communication of vital Impresses" and "Universal Principle" of the "Spirit of Nature."[113] As More, Hill rejected the experimental

*the world* (Flesher, London, 1668), where the terms refers to Hobbes, and in the 1677 *Epistola Altera*, against Spinoza. Ralph Cudworth's 1678 *The True Intellectual System of the Universe* (London: Rochar Royston, 1678, 178) also refers to an "Old Atheistick Materialist." On this history, see Olivier Bloch, *Matière à histoires*, Vrin: Paris, 1997, pp. 21–25.

[111] On Henry More's relation to Descartes, see Charles Webster, "Henry More and Descartes: Some New Sources," *The British Journal for the History of Science* 4 (1969), pp. 359-377; Alan Gabbey, "*Philosophia Cartesiana Triumphata*: Henry More (1646–1671)," in Thomas M. Lennon, John M. Nicholas, and John W. Davis (eds.), *Problems of Cartesianism*, Kingston and Montreal: McGill-Queen's University Press, 1982, pp. 171–250, and Jasper Reid, "Henry More, Supporter and Opponent of Cartesianism, in Delphine Antoine-Mahut, Steven Nadler, and Tad Schmaltz (eds.), *The Oxford Handbook of Descartes and Cartesianism*, Oxford: Oxford University Press, 2019, pp. 629–642. Generally, on the early English reception of Descartes, including More, see Marjorie H. Nicolson, "The Early Stage of Cartesianism in England," *Studies in Philology* 26:3 (1929), pp. 356–374; and John Henry, "The Reception of Cartesianism," in Peter Anstey (ed.), *The Oxford handbook of British Philosophy in the Seventeenth Century,* Oxford: Oxford University Press, 2013, pp. 116–143.

[112] See esp. Henry More, *The Immortality of the Soul*, in *A Collection of Several Philosophical Writings*, London: James Flesher, 1662, pp. 58–144.

[113] More, *A Collection*, "The Preface General," pp. xiv–xv. One could object that, while Hill cites no sources likely to confirm either conjecture, his conception of the "spirit of nature" could just as well come from the alchemist Thomas Vaughan (1621–1666), a follower of Cornelius Agrippa whom Henry More fiercely criticised in two texts of 1650 and 1655. See esp. Eugenius Philalethes [= Thomas Vaughan], *Anima Magica Abscondita: or A Discourse of the universal Spirit of Nature* (London: Printed by T. W. for H. B., 1650), pp. 9–10: "every body in the World is subject to a certain Species of Motion. Animals have their progressive outward, and their Vitall Inward Motions … Now the Matter of it selfe being merely Passive, and furnished with no motive Faculty at all, wee must of necessity conclude that there is some other *inward Principle* which acts and regulaters it in severall *species* of motion … this *Principle*

philosophers' separation of physics from speculative metaphysics, and insisted on the necessity of inquiring into incorporeal forces.[114]

Next, on the question of epistemology, the long passage from the *Fifth Essay* clarifies Hill's position on the relative merits of *a priori* and *a posteriori* reasoning in natural philosophy. He argues that natural philosophical knowledge should be based *a priori* reasoning on account of the fallibility of experience, but still verified or confirmed *a posteriori* by experiment. The position is consistent with Hill's understanding of experiential "demonstration" in the *Epistola ad anglos*, ostensibly rationalist while also inclining toward restrained mysticism in a way that is clearly reminiscent of More.[115] Hill's confidence in his own *a priori* principles of natural philosophy moreover brings to mind the dogmatic self-assurance that John Beale detected in More's writings in a 1671 letter to Oldenburg: "Sr Did not I foretell yu, wt was to be expected from Dr H. M. His confidence is as strong as Enthusiasme; & yet yu see wt he does." Their "Mosaicall countryman," Beale writes, is among those who "knowe not ye true use of reasone, but fill up all wth confidence," who illustrate how "far greate wits can swerve from ... to blind arte, & sophisticate reasone, especially wn prepossessed wth a pretence to Religion."[116] The exact same remarks could be made about Hill.

is *Anima Mundi*, or the universall *spirit* of Nature." A glance at the rest of Vaughan's short book, however, reveals none of the substantial similarities to More's approach to experimental philosophy that we find in Hill.

[114] Admittedly, as recent work by Mihnea Dobre on the exchange between Henry More and William Petty has offered an excellent example of, caution is warranted in adopting these straightforward oppositions between, on the one hand, mechanical and spiritual principles (opposing More to Descartes), and, on the other hand, speculative and experimental methods (aligning More with Descartes, against Royal Society Baconiansim) (see Mihnea Dobre, "Henry More and William Petty: Revisiting an Early Modern Polemic," *Early Science and Medicine* 23:3 (2018), pp. 244–264.) Dobre's contribution reveals the importance of distinguishing between these simplified, general oppositions dominating the public debates in published works, and the more nuanced disagreements often at work in more private exchanges, for example in correspondences not published at the time. However, Hill's interventions at the Royal Society as well as the *Fifth Essay*, with their clear-cut oppositions between "theory" and "experiment," seem mostly informed only by the more public debates, adding to the impression of an outsider not privy to any of the more private discussions.

[115] As John Henry has observed, Henry More "was torn between what he saw as the need for a rational theology on the one hand and a much more emotional submission to religious sensibilities" (John Henry, "Henry More," *The Stanford Encyclopedia of Philosophy (Summer 2020 Edition)*, ed. Edward N. Zalta, 7 September 2016, URL: https://plato.stanford.edu/archives/sum2020/entries/henry-more/.

[116] Beale to Oldenburg, 24 June 1671, HOC VIII, p. 120; see also John Henry, "Henry More versus Robert Boyle: The Spirit of Nature and the Nature of Providence," in Sarah Hutton (ed.), *Henry More (1614–1687). Tercentenary Studies*, Kluwer: Dordrecht, 1990, pp. 58–59.

Finally, Hill's understanding of the true role of experiment in relation to theory and his approach to the experiments made by Harvey, Walæus, Lower, and Willis on the heart, closely resemble the way in which the 1662 edition of More's *Antidote against Atheism* put Robert Boyle's hydrostatic experiments in the service of a More's own peculiar form of speculative philosophy, as a means to illustrate the workings of the "spirit of nature" against materialist atheism.[117] How so? Against the circulators, Hill defends the theory of his favourite "Antient," Hippocrates, who saw in the heart the encounter of two distinct systems of blood and air, the left ventricle being the heat generator and site of pure air of life or "pneuma." Similarly, Hill argues in favour of "vital spirits" which supply the "Flash, or Flame of life" by being infused into the blood in the heart.[118] Motion of the blood is caused by these vital spirits, and not by pulsation.[119] Hill therefore also argues against Lower and Willis's understanding that the heart is a muscle by asserting that "a Muscle is an Instrument of voluntary Motion, being moved by the Will" while "the Heart doth move without, nay, and against our Will."[120] At the same time, however, Hill also constantly refers to the experiments made by Harvey, Lower, and Willis while arguing for his own positions:

> my speaking so of their Tryals and Experiments, tends not to invalidate the Reality thereof, nor their Skill in making them; but the Conclusions only, and Judgements made upon them ; for all of them together amount not to a full proof of what they deduce from them, to wit, a Circulation of the Blood ... I am so far from thinking their Tryals false, that I make use of them my self against their Notions, and allow of what they shew, viz. a Motion in the Blood.[121]

Hill thus never contests the observations of his adversaries or opposes them on matters of fact, but only ever challenges the conclusions they draw by offering alternative explanations grounded in the Hippocratic system. And this argumentative strategy is exactly the same as More's when he made use of Boyle's hydrostatical observations for the purposes of his own spiritualist account of the motions of the earth, gravity, and air pressure. If a more speculative conjecture will be allowed, Hill may very well have deployed the same strategy when

[117] See in particular More, *Antidote against Atheism*, 3rd ed., in *A Collection,* II, pp. 40–47. On the confrontation between More and Boyle, see Shapin and Schaffer, *Leviathan and the Air-pump*, pp. 207–224; Henry, "Henry More versus Robert Boyle," pp. 55–76.

[118] Hill, *Fifth Essay*, Part I, pp. 18–19.

[119] *Ibid.*, Part I, p; 23.

[120] *ibid.*, Part I, p. 79. Earlier in the text, however, Hill seems himself to accept that the heart is a muscle, but attributes the discovery to Hippocrates, and accuses Willis and Lower of misusing the insight (see *ibid.*, Part I, pp. 72-73).

[121] *Ibid.*, Part I, pp. 12–13.

dealing with these exact same topics, given that Hill's lost essays 1 ("Against the Gravitation and Pressure of the Air, being the Cause of fluid rising in the Pomp") and 3 ("Cause of the Motion of the Earth") are thematically very close to chapter II of More's *Anti-dote against Atheism*, where More reinterprets Boyle's experiments in order to discuss the motion of the earth (sect. 1), gravity (sect. 7), and air pressure (sect. 9), and to maintain "that there is a *Spirit of Nature* which is the vicarious power of God upon the *Motion* of the *Matter* of the Universe."[122]

## Conclusion

As Michael Hunter has argued, the election and contributions of Oliver Hill at the Royal Society offers a glimpse of how the early society collectively situated itself in relation to proponents of somewhat arcane forms of hermetic cosmology, bordering on enthusiasm. It does however also, and more importantly, offer an oblique but unique perspective on the confrontation between experimental philosophy and the nebulous set of doctrines often described as Cambridge Platonism which otherwise never really found their way into the early meetings of the Royal Society.[123] Despite Henry More's early election to the society, and the many writings in which More clashed with the Royal Society principal theorist, Robert Boyle, the Cambridge philosopher's name is practically absent from the first three decades of minutes.[124] Certainly, even before the foundation of the Royal Society, Oldenburg described Henry More as an "uncommonly good physician and a friend of ours,"[125] but in his later correspondence as Royal Society secretary, mentions of More are exceedingly

[122] More, *Anti-dote*, 3rd. ed., in, *A Collection*, II, p. 44.

[123] As is remarked often enough, caution is warranted in using the label. For some recent misgivings about the "Cambridge Platonist" label, see Dmitri Levitin, *Ancient Wisdom in the Age of the New Science*, Cambridge: Cambridge University Press, 2015, pp. 16, 23. For a careful, extended defence of maintaining the label nonetheless, see Kaldas, *The Cambridge Platonists*, pp. 30–60.

[124] Henry More was proposed as a member by Wilkins on 4 June 1662, but not elected until 17 September (Birch I, pp. 85, 111). Never in attendance, More was nonetheless re-proposed and re-elected two years later on 25 May 1664 (Birch I, p. 427) and admitted on 1 June 1664 (Birch I, p. 432), only to be excused from membership payments just a week later (Birch I, p. 435). Nothing is heard of More again until the minutes of a meeting held on 25 February, 1685, which mention a letter from Newton arrived the previous day, reporting on plans for a Cambridge branch of the society: "the design of a philosophical meeting there had been pushed forward by Mr. Paget, when he was last there, with whom himself had concurred, and engaged Dr. More to be of the Society." Nothing came of this. As Newton already noted at the time, what "chiefly dashed the business, was the want of persons willing to try experiments" (Birch IV, p. 370).

[125] Oldenburg to Saporta, 26 April 1659, HOC I, pp. 225/227.

rare.[126] More did not attend by proxy either. Joseph Glanvill, elected in 1664, was a friend of More and in some respects close to him philosophically.[127] However, living far away from London, Glanvill never attended meetings, but contributed only to the collective work of the society with occasional letters, for example providing answers to specific inquiries about mines, and engaging in some exchanges about the possibility of establishing a philosophical correspondence with natural philosophers in Somerset.[128] Moreover, as Julie Davies has convincingly argued, we should not simply assume that Glanvill operated as a proxy for Cambridge Platonism or for More in particular within the Royal Society.[129] He was a deeply committed fellow and fully endorsed the collaborative ethos of the Royal Society in his 1668 *Plus Ultra*, a programmatic defence of the society intended to supplement Sprat's *History*.[130] As other fellows, he was wary of overly "abstractive Contemplations" and confessed a method of "Confesd ignorance" reminiscent of the allegiance to "scepticism" by Robert Boyle in the 1661 *Sceptical Chymist* and other society fellows such as Samuel Parker in his 1666 *Free and Impartial Censure of the Platonick Philosophy*.[131] In debates between More and Boyle, centrally concerned with usefulness of spiritual principles such as More's Platonic "Spirit of Nature" for the conduct of natural philosophy, Glanvill came down on the side of Boyle.[132] Finally, even

[126] Apart from the few letters cited below and above, see Pardies to Oldenburg, 10 October 1671, HOC VIII, p. 284; Oldenburg to E. Bartholin, 22 February 1671/2, HOC VIII, pp. 548/549; E. Bartholin to Oldenburg, 4 August 1672, HOC IX, pp. 201/203. We also find a small set of four letters from around 1672/73 informing foreign correspondents about Boyle's response to More in the *Hydrostatical discourse* and treatment of the "vital flame." See Oldenburg to Gornia 15 March 1672/73, HOC IX, pp. 534–535; Oldenburg to Reisel 15 January 1672/73, HOC IX, p. 416; Oldenburg to Swammerdam, 10 February 1672/73, HOC IX, pp. 460–461; Oldenburg to Malpighi, 18 February 1672/73, HOC IX, pp. 472–473.

[127] Proposed on 7 December 1664, Glanvill was elected on 14 December 1664 (Birch I, pp. 500–501, 504).

[128] Resp. Society Meeting, 10 October 10 1667, Birch II, p. 200, and Society Meetings, July 22 and December 2, 1669, Birch II, pp. 394–395 and 410.

[129] Julie Davies, *Science in an Enchanted World. Philosophy and Witchcraft in the Work of Joseph Glanvill*, Routledge: London and New York, 2018, p. 81. Glanvill was mostly concerned with overcoming Aristotelianism (represented by Thomas White) and "mechanical Atheism" (defended by "a person that is not very fond of religion," aka Hobbes), but not so much with arbitrating between the different agendas of modern philosophers (see Joseph Glanvill, *Scepsis Scientifica*, London: E. Cotes, for Henry Eversdan, 1665, "An Address to the Royal Society," pp. 3v–4r.

[130] See Joseph Glanvill, *Plus Ultra*, London: James Collins, 1668. See also Oldenburg to Boyle, 1 October 1667, HOC III, p. 503.

[131] Glanvill cit. in Davies, *Science*, p. 149; cf. Robet Boyle, *The Sceptical Chymist*, London, J. Cadwell for J. Crooke, 1661, "A Præface Introductory"; Samuel Parker, *Free and Impartial Censure of the Platonick Philosophie*, Oxford: W. Hall, for Richard Davis, 1666, pp. 44–45.

[132] Davies, *Science*, pp. 86–87.

if Glanvill himself was qualified by Oldenburg as a "florid writer," Glanvill was not comfortable with More's dogmatic style of writing, rife with neologism and esoteric terminology.[133]

By contrast, Hill made no efforts to adapt to the cautious experimentalist methods and self-consciously collegial style of the Royal Society's collaborative work. The belligerent delivery of his Royal Society contributions certainly reflects the "hot-headed" personal character also later described by the Madrid ambassador. But it also reflects a pugnacious, self-confident style of philosophising that Royal Society fellows also criticised in More. By contrast, There is no trace of the prudent "scepticisim" of Boyle and Parker or the "Confesd ignorance" of Glanvill. What we find is a commitment to incorporeal *a priori* principles of physics rooted in religious dogma. This is exactly what Robert Hooke denounced in Oliver Hill when deriding him as a "master of all knowledge *a priori* and by revelation." This is, however, also exactly what John Beale a few years later denounced in Henry More as "sophisticate reasone ... prepossessed wth a pretence to Religion."[134]

In sum, there is good reason to argue that, with the election of Oliver Hill, a Cambridge-educated natural philosopher, an *a priori* approach to natural philosophy and mystical cosmology of vital of spirit similar to More's made its debut *inside* the Royal Society, seriously challenging the other fellows' common commitment to "sober" reasoning, i.e. their tacit pledge to submit only to concordant testimonies about experience. Hill does not speak of More explicitly. But elements in Hill's life make it not unlikely that he learned from the Cambridge Platonists, including More, during his training in Cambridge. Moreover, from what we know about Hill's character, he was unlikely to acknowledge it if he did. Acknowledging intellectual debts to others was not in his character. He was much more preoccupied with making others acknowledge their debts to him, pushing "a theory, of which he was master" while denouncing alleged "grosse plagiarism" of his work by others.[135] However, whether Hill was a reader and follower of More or not is not the principal point I have attempted to make. It is simply that Hill was a natural philosopher whose thinking, if theoretically cruder and less sophisticated, was nonetheless very much *like* More's in style, form, and substance. I have thus accumulated numerous parallels and convergences that allow recognising in Hill, not just a religious zealot, but (also) a natural philosopher who, even if he was of course a much lesser philosopher, expressed theoretical concerns with the Royal Society's experimental brand of natural philosophy similar to

[133] Oldenburg to Boyle, 1 October 1667, HOC III, p. 503; Davies, *Science*, pp. 147–148.
[134] *Op. cit.*
[135] For these quotes, see sect. "Two Discourses at the Royal Society" above.

More's, and also used concepts, styles, and argumentative strategies reminiscent of More's in arguing against it. In showing this, I have however less aimed at showing a direct inspiration from More, as I have tried to paint a more detailed portrait of this peculiar intruder in the Royal Society than previously available, depicting him not only a as a puritan mystic but also, behind all the bluster, as a perhaps unsympathetic but still coherent philosopher taking an approach to natural philosophical principles not without genuine purchase in the historical context, but that the early Royal Society found no better way to confront than by scolding, containing and, eventually, exclude him.

## Epilogue

In 1702, Hill followed up his *Fifth Essay* with a pamphlet entitled *A rod for the back of fools*, a text written mostly against John Toland's *Christianity not Mysterious*, but where he also complained about a certain Joseph Brown whom Hill accused of having stolen and plagiarised the *Fifth Essay*.[136] The pamphlet does however also briefly return to Hill's interventions at the Royal Society some 24 years earlier, denouncing "the *Difficiles Nuga,* or Toys of the *Greshamites*; a rare shew to please Fools with; and in a word, they are but much ado about nothing."[137] He once again sees the experimental physicians and philosophers' principal flaw to be their unwillingness to inquire about *causes*: they are "all crying with one accord, when they are asked the Cause and the Reason of [pulsation], *It is known to God only*. So that after all this stir, all that they have hitherto found out by their Microscopes and their microscopizing, is but what was before known, and confessed on all Hands."[138] And he boasts to "have silenced ... the Doctors of Physick, in the matter of the Blood's pretended circulation; and with the Society of the *College of Gresham*, in the case of their Pressure and Gravitation of Air, and other Errors of theirs."[139] Hill clearly had a different recollection of his turbulent tenure among the "Greshamites" and a decidedly different interpretation than theirs of the silence with which his discourses were met, but similar to the one he had of his encounter with the Royal College of Physicians which he assessed as follows:

[136] Oliver Hill, *A rod for the back of fools: in answer to a book of Mr. John Toland, called Christianity not mysterious; […] and to the lecture of one Dr. Joseph Brown, taken from the author's book against the circulation; and to the answer of one Mr. John Gardiner, surgeon, to that pretended lecture*, London: William Turner, 1702.

[137] *Ibid.*, p. 10.

[138] *Ibid.*, p. 15.

[139] *Ibid.*, p. 5.

> I have ... so fundamentally overthrown and exploded the Circulator's Notion, that in a Consultation which they held in their College, they agreed amongst themselves to answer nothing at all, hoping by their great Number (of some Thousands to one Man) and the Buzzing they would make, to quash and suppress my Book, and ridicule my Notion.[140]

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[140] *Ibid.*, p. 16.

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