

SCOTT MANDELBROTE

Early Modern Biblical Interpretation and the Emergence of Science

When Francis Bacon (1561-1626) imagined the nature of collaborative, state-sponsored endeavour for the advancement of learning, he conceived of an institution, equipped with all manner of instruments and inventions and staffed by exotically named groups of scholars whose tasks were to find out about and improve experiments.¹ That institution, ‘Salomon’s House’, has been emblematic of both the practices and the hopes of seekers after natural knowledge since its first publication in the year following Bacon’s death. Its model, and that of other utopian learned institutions, was much discussed in England during the middle years of the seventeenth century, and was invoked directly by apologists for the Royal Society, which was founded in 1660.²

It has long been known that many of the devices and practices which Bacon described at Salomon’s House could be found in use in early seventeenth-century London.³ Alongside such concrete precedents, Bacon’s debt to the style of contemporary books of secrets, recipes and physick encouraged the use of a language of prophecy and revelation, which permeated the description of the discovery of the island of Bensalem and of Salomon’s House in the *New Atlantis*.⁴ The Jews of Bensalem recognised Christ; the native inhabitants of the island were supposedly descended from Abraham and took their laws from Moses; Salomon’s House itself, as well as being named after the wisest of the biblical kings of Israel, was also sometimes called ‘the College of the Six Days’ Works; whereby I am satisfied that our excellent king had learned from the Hebrews that God had created the world and all that therein is within six days’.⁵

Solomon’s houses

Salomon’s House was an institution devoted to the pursuit of natural knowl-

1 Bacon, F. *The Advancement of Learning and New Atlantis*, Johnston, A. (ed.), Oxford: Clarendon Press (1974), pp. 245-246.

2 Hunter, M. & Wood, P.B. ‘Towards Solomon’s house: rival strategies for reforming the early Royal Society’, *History of Science* (1986) 24, 49-108; Sargent, R. ‘Bacon as an Advocate for Cooperative Scientific Research’, in Peltonen, M. (ed.) *The Cambridge Companion to Bacon*, Cambridge: Cambridge University Press (1996), pp. 146-171, esp. 164-168.

3 Colie, R.L. ‘Cornelius Drebbel and Salomon de Caus: two Jacobean models for Salomon’s House’, *Huntington Library Quarterly* (1954-5) 18, 245-260; cf. Harkness, D.E. *The Jewel House: Elizabethan London and the Scientific Revolution*, New Haven: Yale University Press (2007), pp. 211-253.

4 Serjeantson, R ‘Natural Knowledge in the *New Atlantis*’, in Price, B. (ed.) Francis Bacon’s *New Atlantis*, Manchester: Manchester University Press (2002), pp. 82- 105.

5 Bacon *op. cit.*, (1), pp. 234-235, quotation at p. 230.

edge and with it the discovery of divine revelation as revealed by the book of nature. There was much debate in the early modern period with regard to the spiritual value of knowledge derived from nature. Many commentators, however, argued for the importance of understanding nature as an acknowledgement of the biblical account of the creation of the world over six days.⁶ The inhabitants of Bensalem were well aware of biblical history, having been the recipients of a miraculous work of evangelism, 'twenty years after the ascension of our Saviour'. Then, a pillar of light had drawn one of the wise men of Salomon's House to an ark or chest, in which were 'a Book and a Letter; both written in fine parchment, and wrapped in sindons of linen. The book contained all the canonical books of the Old and New Testament, according as you have them... and the Apocalypse itself, and some other books of the New Testament which were not at that time written...' The letter was written by an apostle, named Bartholomew, and it, as well as the book, were the subjects of a further miracle, as a result of which the various inhabitants of Bensalem were able to read these texts as if they had been written in their own languages.⁷ Discovery of the text of Scripture, which had been revealed even before the time when human hands had written it down, was also therefore one of the historical achievements of Salomon's House.

Bacon's utopia thus reworked contemporary understandings of nature, within the context of the divine creation and providential government of the world, to provide a vision of what learned men working under direction might achieve. The intellectual historian, Anthony Grafton, has recently considered what models of collaborative scholarly endeavour, rather than of scientific invention, Bacon might have had in mind when composing his work. His conclusion is that the collaborative compilation of works motivated by the demands of the religious confessionalisation of early modern Europe most closely prefigured Bacon's plans.⁸

The most important of these works were the ecclesiastical histories of the Lutheran Magdeburg centuriators, at work together during the 1550s, and the Catholic response, the *Annales ecclesiastici*, presided over by the Oratorian, Cesare Baronio, in Rome and published between 1588 and 1607. They were collective both in terms of relying on the work of several hands and in being the product of institutional support. Moreover, they were examples, like the imaginary natural histories being produced at Salomon's House, of a method of compilation and excerpting. This winnowed through criticism the kernel of truth from a great storehouse of often conflicting evidence, provided by earlier writ-

6 See Bono, J.J. *The Word of God and the Languages of Man*, Madison: University of Wisconsin Press (1995); Williams, A. *The Common Expositor*, Chapel Hill: University of North Carolina Press (1948).

7 Bacon *op. cit.*, (1), pp. 222-223.

8 Grafton, A. *Worlds Made by Words*, Cambridge, MA: Harvard University Press (2009), pp. 98-113.

ers of history, beginning with the Church Fathers.⁹ At one level, such works presented an elaborate and deeply learned polemic. At another, they represented one of the many genres of structured compendia, whose creation was one of the principal achievements of the classificatory and encyclopaedic drive of sixteenth-century natural knowledge.¹⁰

The beating heart of this kind of research was not the laboratory but the library. As the author of another scientific utopia that was much read in mid-seventeenth-century England, the Lutheran mystic Johann Valentin Andreae (1586-1654), put it in 1619: 'Whatever we think has been lost, this I found there, to my very great surprise, almost without exception.'¹¹ Books played a less obviously prominent role in Salomon's House, although Bacon's 'Depredators' worked to collect experiments from them. On the publication of *The Advancement of Learning* in 1605, however, Bacon sent a copy to his friend, Sir Thomas Bodley (1545-1613). Bodley had refounded the library at the University of Oxford in 1598, and spent the remaining years of his life winning benefactions and building a collection of books drawn from all over Europe and even from the Middle East. He had, according to Bacon, 'built an ark to save learning from deluge.'¹² This ark provided another model of the collaborative research that Bacon later extolled in *New Atlantis*. Bodley's librarian, Thomas James (1572/3-1629), compiled catalogues, the first of which was published in 1605. Their purpose was both to enable readers to see what the library held and to categorise its holdings according to established orders of knowledge, so that the relevance of the contents of particular books might be known. The two parts of the index which first analysed the library's books in this way dealt with commentators on the books of the Bible and the works of Aristotle, which provided the basis for study of humanity and the natural world.¹³

Bodley was at the same time committed to and wary of another collaborative venture whose structure may have influenced Bacon's conception of the achievements possible through the division of scholarly labour. This was the translation of the Bible, through the work of standing companies that met at Westminster, Oxford, and Cambridge from 1604. Thomas James was invited to join one of the two companies at work in Oxford, but was prohibited by Bodley

9 See Ditchfield, S. *Liturgy, Sanctity and History in Tridentine Italy*, Cambridge: Cambridge University Press (1995), pp. 273-327; Backus, I. *Historical Method and Confessional Identity in the Era of the Reformation (1378-1615)*, Leiden: E.J. Brill (2003), pp. 326-391.

10 cf. Blair, A.M. *Too Much to Know: Managing Scholarly Information Before the Modern Age*, New Haven: Yale University Press (2010).

11 Andreae, J.V. *Christianopolis*, Held, F.E. (ed. & trans.) New York: Oxford University Press (1916), p. 191; for the reception of Andreae, see Dickson, D.R. *The Tessera of Antilia*, Leiden: E.J. Brill (1998).

12 Philip, I. *The Bodleian Library in the Seventeenth and Eighteenth Centuries*, Oxford: Clarendon Press (1983), pp. 1-3.

13 Wheeler, G.W. *The Earliest Catalogues of the Bodleian Library*, Oxford: Oxford University Press (1928), pp. 34-52, 94-116.

from doing so. Bodley was similarly concerned that the translators, to whom he himself lent books, should be bound by the order not to remove volumes from the library.¹⁴

As a successful diplomat, Bodley had advised Bacon on the way in which a traveller should behave abroad, in order best to be instructed by his experience of foreign parts. He would, however, have been shocked by Bacon's eventual, published criticism of traditional learning, and unmoved by the rhetoric of novelty that accompanied it. Reading a draft of part of Bacon's work, he commented: 'when we shall be dispossessed of the Learning we have, all our consequent Travel will but help in a Circle to conduct us to the Place from whence we set forward'. Bodley warned that of 'the infinite making of Books' in Solomon's time, 'not now so much as one petty Pamphlet (only some Part of the Bible excepted)' remained to posterity.¹⁵ The lost books of Solomon's knowledge of creation were unavailable to seventeenth-century readers, other than in the imaginary world of Bacon's Bensalem, but that was no reason to throw away the knowledge won by later generations of humanity.

The indeterminacy of the literal sense

Miles Smith (d. 1624), later Bishop of Gloucester and the author of the translators' preface to the King James Bible, published in 1611, shared with Bodley the sense that God had already provided sufficiently for human knowledge. 'The Scriptures', he wrote, 'then being acknowledged to be so full and so perfect, how can we excuse ourselves of negligence, if we do not study them, of curiosity, if we be not content with them?' Human interest in tales of classical abundance or stories of transformative modern inventions represented a distraction, placing corporeal satisfaction over the sustenance of the soul: 'that which they falsely or vainly attributed to these things for bodily good, we may justly and with full measure ascribe unto the Scripture, for spiritual'. Smith's targets included 'the Philosophers stone... *Cornu-copia*, that it had all things necessary for food in it... *Panaces* the herbe, that it was good for all diseases... *Catholicon* the drug, that it is instead of all purges'.¹⁶

These were the ideal achievements of natural philosophy that Bacon would soon envisage as bearing fruit in Salomon's House. Although he was sceptical about what human endeavour might ultimately achieve, Smith did not doubt

14 Wheeler, G.W. (ed.) *Letters of Sir Thomas Bodley to Thomas James*, Oxford: Clarendon Press (1926), pp. 108, 110-117, 148, 190-191.

15 [Hearne, T. (ed.)] *Reliquiae Bodleianae: Or Some Genuine Remains of Sir Thomas Bodley*, London: John Hartley (1703), pp. 364-381; quotations from pp. 378-379. Bodley read Bacon's 'Cogitata et visa' ('Thoughts and Conclusions') in manuscript in 1607. See also Grafton, A. 'Libraries and Lecture Halls', in Park, K & Daston, L. (eds) *The Cambridge History of Science, Volume 3: Early Modern Science*, Cambridge: Cambridge University Press (2006), pp. 238-250.

16 Pollard, A.W. (ed.) *Records of the English Bible*, London: Henry Frowde (1911), p. 347.

the value to learning of hard labour. He praised the efforts of a succession of translators, including those who had produced earlier English versions, for making it possible for the unlearned of their time to understand the Bible. This was difficult work, unassisted by any miraculous intervention such as that which was sometimes said to have assisted the seventy-two translators who, working for Ptolemy Philadelphos in hellenistic Alexandria, were supposed to have translated the Old Testament from Hebrew into Greek in seventy-two days. It was thus quite different from the way in which revelation would be brought to the people of Bensalem.

None of these things: the work hath not been huddled up in 72 days, but hath cost the workmen, as light as it seemeth, the pains of twice seven times seventy- two days and more: matters of such weight and consequence are to be speeded with maturity; for in a business of moment a man feareth not the blame of convenient slackness.¹⁷

The achievements of the translators of the King James Bible rested on a century or more of scholarship in biblical languages, whose dissemination had been made possible by the printing press. The committees looked back for inspiration and example to the earliest Christian editors, Origen and Jerome, as well as to the work of their immediate predecessors among reformed translators of the sixteenth century. These precedents, together with the injunctions that they had received to keep the text plain and to avoid readings that might stir up theological controversy, shaped the choices that they made when translating.¹⁸ In reflecting on those choices, Smith noted, first, that whereas the original of Scripture had been perfect and perfectly suited to the Israelites when they lived in Canaan, the Hebrew (and, later, Greek) texts could not serve God's people in the same way once they spoke different vernaculars. Secondly, Smith argued that it was absurd always to translate the same word or phrase each time that it occurred in one language with an identical term from another tongue, as if words or phrases always had a single signification:

for example, if we translate the *Hebrew* or *Greek* word once by *Purpose*, never to call it *Intent*; if one where *Journeying*, never *Travelling*; if one where *Think*, never *Suppos*; if one where *Pain*, never *Ache*; if one where *Joy*, never *Gladness*, &c. Thus to mince the matter, we thought to savour more of curiosity than wisdom, and that rather it would breed scorn in the Atheist, than bring profit to the godly Reader. For is the kingdom of God become words or syllables?

God, in writing the Bible, had frequently used different names for the same

¹⁷ *ibid.*, p. 371.

¹⁸ See Norton, D. *The King James Bible*, Cambridge: Cambridge University Press (2011), pp. 54-110.

person or thing, Smith pointed out, so why should his translators behave any differently?¹⁹

To modern readers, Smith's openness about the possibilities for meaning in language seems remarkably contemporary, despite the fact that many of the choices made by the translators turn out to have been archaic even to seventeenth-century ears.²⁰ The translators necessarily made mistakes, as Smith knew that they must: those mistakes were partly a product of the imperfect state of contemporary knowledge of biblical Hebrew, but they also came about, one suspects, as a consequence of the weighing of opinions in committee and across different stages of the translating process. Whatever else they were doing, the translators were well aware that the literal sense of Scripture could be slippery, many-sided and inconsistent. A translation that was too literal or too modern might be either nonsensical or confusing. This, Smith alleged, was the problem with the existing English text of the Geneva Bible, which was preferred by Puritan readers. Similarly, a translation that was too archaic or too metaphorical risked puzzling and deterring readers, as Smith alleged Catholic translations did. The underpinning for the mean on which Smith placed so much weight, however, was not a human choice or action. It was instead God's decision to 'work a care and conscience in us to know him and serve him'.²¹ Ultimately, truthful reading of the Bible therefore depended not on the work of translation but on the honesty of the faith of the reader. This internal sense, rather than the external act of reading, was what imparted knowledge in the Christian believer.

So far, this essay has considered two things. First, it has discussed the possibility that models of collaborative scholarship focused on the compilation of texts for confessional use might have inspired Bacon's vision for the pursuit of natural knowledge in 'Salomon's House'. This comparison, I hope, underlines how wide-rangingly seductive the possibility of finding links between biblical and scientific thought and practice might be. Secondly, the essay has asked what the criteria for knowing might have been according to one of those collaborative endeavours, the translation of the King James Bible. The purpose of introducing this second topic is not to suggest that the translators and Bacon were pursuing contemporaneously very different epistemological practices. Indeed, there might be held to be considerable similarities between the con-

19 Pollard *op. cit.*, (16), pp. 374-375. Naomi Tadmor has recently explored the way in which the translators' choices of words in fact revealed their assumptions about the political and social order. Their descriptions of ancient Israel thus echoed the economic and cultural realities of early modern England. They underlined their preferences among the readings of earlier versions and subtly changed meanings to suit the relative conservatism of their message. In the process, they also made the strange, historical world of the Bible sound and seem contemporary and familiar: Tadmor, N. *The Social Universe of the English Bible*, Cambridge: Cambridge University Press (2010).
20 cf. Prickett, S. 'Language within Language: The King James Steamroller' in Hamlin, H. & Jones, N.W. (eds.) *The King James Bible after 400 Years*, Cambridge: Cambridge University Press (2010), pp. 27-44.

21 Pollard *op. cit.*, (16), pp. 375-377.

tingency of human knowledge implied by Smith's comments about language and Bacon's own commitment to the acquisition of knowledge through practice.²² Instead, the point of rehearsing the translators' discussion of their work here is to draw attention to some of the problems with recent writing about the importance of changes in attitudes to the Bible for the emergence of modern science.

Narrative, historicity and modernity

Writing in this journal in 2006, Peter Harrison claimed that

Protestant Reformers, with some help from Renaissance humanists, sponsored a new approach to the biblical text, and in so doing wrought a hermeneutical revolution that brought in its wake a new approach to natural objects. In rejecting allegory and insisting instead that the Bible, the book of God's words, was to be read for its literal or historical sense, they inadvertently made possible a new approach to that other 'book', the book of nature. That new approach was essentially a scientific one.²³

This was a restatement of an argument that Harrison first advanced in fully developed form in 1998.²⁴ More recently, Harrison has claimed that concentration on the literal sense of Scripture made possible a concern with reversing the effects of the Fall which might be seen to characterise English experimental natural philosophy from Bacon to Robert Boyle.²⁵ This is scarcely a novel claim.²⁶ Revived Augustinian notions of imputed human sin, which could be found, as Harrison himself notes, in some traditions within post-Tridentine Catholicism as well as in English Puritanism, certainly provided a metaphorical counterpoint that was useful to contemporary advocates of the liberating effects of natural philosophy.²⁷ Other aspects of Augustinianism, largely neglected by Harrison in both his books, encouraged respect for the literal sense of the biblical text.²⁸ But what apologists for the power of experimental natural philosophy, whether laymen such as Bacon or clerics such as Joseph Glanvill

22 See Pérez-Ramos, A. *Francis Bacon's Idea of Science and the Maker's Knowledge Tradition*, Oxford: Clarendon Press (1988), esp. pp. 55-59, where the importance of theological literature in shaping this tradition is noted.

23 Harrison, P. 'The Bible and the emergence of modern science', *Science and Christian Belief* (2006) 18, 115-132, p. 116.

24 Harrison, P. *The Bible, Protestantism, and the Rise of Natural Science*, Cambridge: Cambridge University Press (1998).

25 Harrison, P. *The Fall of Man and the Foundations of Modern Science*, Cambridge: Cambridge University Press (2007), p. 15.

26 See, in particular, Webster, C. *The Great Instauration*, 2nd edn, Oxford: Peter Lang (2002) pp. 324-483, [1st edn 1975].

27 Harrison, *op. cit.*, (25), pp. 66-88.

28 See Augustine, *The Literal Meaning of Genesis*, translated and annotated by Taylor, J.H., SJ, 2 vols., New York: Newman Press (1982); La Bonnardière, A.-M. (ed.) *Saint Augustin et la Bible*, Paris: Beauchesne (1986).

(1636-80), might in fact have understood either by the literal sense of the Bible or by an Augustinian concern for the limitations of unaided human reason remains a moot point, to which this essay will shortly turn.

Before moving on, however, it is worth noting that Harrison's claims about the importance of a hermeneutical approach based on the literal sense have been strongly endorsed by Stephen Gaukroger.²⁹ Gaukroger presents his own version of 'the emergence of modern science', in which Augustinian criticism of scholastic notions of certainty also play a role. In general, however, his account is far less committed to monocausal explanations than is Harrison's, and much richer both in its range of reference and its structure of argument. Both authors, nevertheless, share a sense that philosophical debate, understood in purely intellectual terms, can bring about major shifts in the way in which people think and behave. As a way of arguing, this runs counter to a long tradition in both general historiography and the historiography of the sciences that suggests that human circumstances must influence the meaning of ideas. The weaknesses of the more philosophical history of Gaukroger and Harrison include the fact that the actors whose world it purports to describe were themselves unaware of the processes that it deems to be important and that it imposes a false limit on the working of those processes (the arrival at some point of 'modernity', held to lie in a past which has now come in practice to exemplify the present).³⁰

The three books

The example of Miles Smith's attitude to the literal sense of Scripture draws attention to the principal, contextual problem in the current debate over the influence of changes in hermeneutics on ideas of nature. That is that there were not two books, those of nature and Scripture, through which, according to early modern Protestants, God revealed himself. There were at least three: Scripture, nature, and conscience. Ability to comprehend the meaning of the Bible, as Smith pointed out, depended on faith and the human conscience. The neoplatonic defence of human reason mounted by Glanvill and others similarly invoked 'those *Principles of Truth* which are *written upon our Souls*'.³¹ Like

29 Gaukroger, S. *The Emergence of a Scientific Culture: Science and the Shaping of Modernity, 1210-1685*, Oxford: Clarendon Press (2006), esp.pp. 139-148. Harrison himself draws attention to similarities between his and Gaukroger's arguments, see Harrison, P. 'The Bible, Protestantism and the rise of natural science: a rejoinder', *Science and Christian Belief* (2009) 21, 155-162, 156-157.

30. A classic statement of the former criticism is Skinner, Q. 'Meaning and Understanding in the History of Ideas', reprinted in Tully, J. (ed.), *Meaning and Context: Quentin Skinner and his Critics*, Cambridge: Polity (1988), pp. 29-67). Dissatisfaction with the latter position has been a commonplace among historians since Butterfield, H. *The Whig Interpretation of History*, London: G. Bell (1931).

31 Glanvill, J. *Philosophia pia; Or, a Discourse of the Religious Temper and Tendencies of the Experimental Philosophy*, London: James Collins (1671), p.197.

Smith, Glanvill was concerned with the question of how human minds might be able to interpret Scripture, composed by a divine hand. Others similarly noted that conscience or right reason could be the guide to interpreting nature, so as to lead to a proper understanding of its creator.

This was the point behind much contemporary historical, anthropological, and philosophical literature which argued that there might be or have been pious pagans.³² Different individuals might understand the nature of this third book in various ways. At the end of the seventeenth century, in a development which certainly had implications for the understanding of both the Bible and nature that went beyond the limits of his own biblical criticism or natural philosophy, John Locke (1632-1704) argued that the natural faculty of inward perception, working on the evidence of sensory experience, was sufficient to promote an understanding of the world, even if faith was properly necessary to experience the divine.³³

For others of Locke's contemporaries, by contrast, either the inner light of divine illumination (for example, among the Quakers) or the notion of innate ideas, planted by God (for example, among the Cambridge Platonists), were necessary if reason was to be able to make sense of either Scripture or nature. During most of the seventeenth century, more orthodox representatives of reformed theology held more strongly to the view that faith was necessary to guide human understanding of all things.

The Baptist author, John Bunyan (1628-88), spoke of God opening 'the Book of the Creatures, the Book of Conscience, the Book of the Lords Remembrance, the Book of the Law, the Book of the Gospel'.³⁴ Joseph Alleine (1634-68), one of the Presbyterian ministers ejected under the Act of Uniformity in 1662, urged his readers to compare 'the book of Scripture' with 'the book of Conscience', rather than with 'the book of providence', that is the 'dark' record of the natural world and human affairs.³⁵ According to the Independent minister, Matthew Barker (1619-98), God made himself known to people in three ways: by the light of natural conscience, by the Bible, and by the works of creation. As he put it, 'All Books are written to amend the Book of Conscience'.³⁶

Conformist reformed divines, such as Smith's contemporary, Nicholas

32 For a particularly telling example, see Russell, G.A. 'The Impact of the *Philosophus Autodidactus*', in Russell, G.A. (ed.) *The 'Arabick' Interest of the Natural Philosophers in Seventeenth-Century England*, Leiden: E.J. Brill (1994), pp. 224-265; Avner Ben-Zaken *Reading Hayy Ibn-Yaqzan*, Baltimore: The Johns Hopkins University Press (2011), pp. 1-14, 101-125.

33 Yolton, J.W. *John Locke and the Way of Ideas*, Oxford: Clarendon Press (1956); Spellman, W.M. *John Locke and the Problem of Depravity*, Oxford: Clarendon Press (1988); cf. Harrison *op. cit.*, (25), p. 232.

34 Bunyan, J. *Sighs from Hell*, 2nd edn, London: F. Smith [1666], p. 153.

35 Alleine, J. *Remaines*, London: Peter Parker (1674), pp. 86-90.

36 Barker, M. *Natural Theology, or, The Knowledge of God, from the Works of Creation*, London: Nathaniel Ranew (1674), p. 16.

Byfield (1578/9-1622), drew attention to Revelation 20:12, according to which God would judge people by five books. Those books were those of nature, Scripture and conscience, as well as a book of remembrance in which the names of the godly were recorded and a book of divine providence. Of these, only the first three were available to guide human beings.³⁷

It would be straightforward to continue piling up examples. The point, however, should be clear: across the confessional spectrum of early modern England, Protestants believed that faith, or at least the individual's relationship with God, in some sense determined what meanings people would take away both from the Bible and from the book of nature. Those who were most influenced by Augustinianism tended towards the most pessimistic readings of human ability to utilise nature or to read Scripture for personal reformation. Those who were most willing to contemplate a greater of freedom in human agency, notably those influenced by Platonic ideas, were most likely to believe that people could recover lost wisdom and power over nature.

At the very least, therefore, an account of the relationship between biblical hermeneutics and Protestantism in the early modern period has to take account of the importance of faith and conscience in limiting interpretation. The claim advanced by Harrison and Gaukroger that the literal, historical sense of Scripture displaced allegorical readings, and, in the process, assisted the rise of factual and experimental interpretations of nature, in place of an emblematic view of the world, might thus be modified.³⁸ In practice, modification may not be enough. There can be no doubt that, by the end of the seventeenth century, narrative approaches to Scripture, based on assumptions about the historicity of the material discussed had reached new prominence.³⁹ As Harrison points out, this situation reflected the outcome of a long debate among Christian exegetes as to what mattered most about the text.⁴⁰ Many sixteenth-century reformers were critical of the early Christian editor, Origen (c.185-c.254), because of their concern about the heterodox theological implications of his use of allegory.⁴¹

Whether this led them to reject Origen's entire method of biblical interpre-

37 Byfield, N. *The Rule of Faith*, London: Philemon Stephens & Christopher Meredith (1626), pp. 521-522.

38 cf. Gaukroger *op. cit.*, (29), p. 148; Harrison *op. cit.*, (23).

39 Frei, H.W. *The Eclipse of Biblical Narrative*, New Haven: Yale University Press (1974), pp. 17-50.

40 Harrison *op. cit.*, (24), pp. 15-27; for criticism of Harrison's interpretation at this point, see van der Meer, J.M. & Oosterhoff, R. 'The Bible, Protestantism and the rise of natural science: a response to Harrison's thesis', *Science and Christian Belief* (2009) 21, 133-153. It will become clear that, while I agree with van der Meer and Oosterhoff that Harrison has not identified the differences between medieval and early modern exegesis correctly, I differ from their critique in important respects.

41 For a survey of attitudes to Origen, see Schär, M. *Das Nachleben des Origenes im Zeitalter des Humanismus*, Basel: Helbing and Lichtenhahn (1979).

tation, as Harrison supposes, is less certain.⁴² On the one hand, by the late seventeenth century, Origen's reputation as an editor and interpreter had been considerably rehabilitated, not least by neoplatonist writers.⁴³ On the other, the fourfold interpretation of the senses of Scripture, which developed from Origen's method of exegesis, was not primarily concerned to 'make the natural world an intelligible realm that was ordered in terms of its transcendental meanings.'⁴⁴ Unsurprisingly, it was a method of interpretation that could be applied across the text of Bible, not only to references to things from the natural world.

The debate about the role of allegory in the interpretation of the Bible that developed during the early modern period was not concerned with the appropriateness of figurative readings of the text. Instead, it was a highly confessionalised quarrel whose purpose was, for one side, to accuse Catholics of denying the authority of the Bible, or, for the other, to convict Protestants of pursuing a nonsensical strategy for reading the text of Scripture, which allowed words to mean whatever the interpreter claimed they did.

Confessionalism and hermeneutics

One of the ironies of the interpretation of early modern hermeneutics offered by Harrison is that it gives credit to Protestant thinkers for doing precisely what contemporary Catholic critics accused them of trying to do. Catholic writers were happy to suggest that Protestants collapsed the fourfold sense of Scripture (the literal, the allegorical, the moral, and the anagogical) into one, which could nevertheless be made to bear any interpretation. Thus, Gregory Martin (1542?-1582), in the commentary that he provided for the Douai Bible, drew attention to the fact that Augustine, in writing *De Genesi ad litteram*,

gratefully acknowledgeth that God had given him further sight therein, and that now he supposed he could interpret all according to the proper signification of the words yet so that he durst not nor would not addict himself to one sense, but that he was ready to embrace another, lest by sticking to his own judgement he might fail.

For Catholics, pride and vanity were the hallmarks of Protestant exegesis, especially in the claim that the most difficult parts of the Bible, texts like Genesis or Revelation, might easily give themselves up unaided to the comprehension of human readers. The literal sense might show, for example, that the historical Job was 'just and sincere' and that his sufferings were 'not for his sins

42 Harrison *op. cit.*, (24), pp. 207, 209.

43 See Lewis, R. 'Of "Origenian Platonisme": Joseph Glanvill on pre-existence of souls', *Huntington Library Quarterly* (2006) 69, 267-300; Hutton, S. 'Iconisms, Enthusiasm and Origen: Henry More Reads the Bible', in Hessayon, A. & Keene, N. (eds.) *Scripture and Scholarship in Early Modern England*, Aldershot: Ashgate (2006), pp. 192-207.

44 Harrison *op. cit.*, (23), p. 119.

(as his friends falsely supposed)'. It could not properly demonstrate, however, that he was a figure of Christ (which was an allegorical meaning), without which the coherence of the texts of the Old and New Testament, so valued by Protestant writers came apart. Nor could it comprehend the anagogical sense of the resurrection embodied in Job's restoration by God, or teach properly the moral virtue of patience and waiting on God. In practice, as Martin was well aware, Protestant critics wished to extract all of these meanings from the text. In theory, as he pointed out, they should not be able to do so.⁴⁵ Protestants responded to this criticism by accusing Catholics of misrepresenting them.

Thomas Beard (c.1568-1632), for example, was eager to deny that Catholics were correct to call the Bible 'a nose of wax flexible into many senses', or to liken Scripture to 'a *Delphian Sword*, to be converted into many senses'. Taking the example of Galatians 4:24, Beard drew a distinction between St Paul's allegorising of the history of Abraham's two wives, 'to [illustrate] the matter which he had in hand' and double forms of interpretation. He distinguished between Christ's deriving a moral meaning by applying to the Jews the repentance of the Ninivites, in Matthew 12:41-2, and more forced readings which did not take Scripture as the interpreter of Scripture: 'This is not a new sense, but an accommodation of the right sense to another purpose, which notwithstanding is intended by the spirit of God.'⁴⁶

The doyen of Puritan exegetes, William Perkins (1558-1602) tried to make the Protestant position on allegory plain: '*There is one only sense, and the same is the literal*. An allegory is only a certain manner of uttering the same sense. The Anagoge and Tropology are ways, whereby the sense may be applied.'⁴⁷ Perkins was clear that, despite this, Scripture remained the best interpreter of Scripture and that otherwise the hermeneutical techniques open to the interpreter were those of context, comparison, and what he and other Protestants called the analogy of faith, that is a claim that there was doctrinal unity and coherence to be found across the books of the Old and New Testament. Properly understood, 'the literal sense... is the only sense intended by the Spirit of God', Perkins argued, 'the Allegorical, Tropological, Anagogical, being but several uses and applications thereof'.⁴⁸ Only the literal sense, according to Perkins, provided the basis for doctrinal argument or conclusion, even if it was 'sometimes expressed in proper, and sometimes in borrowed or figurative speeches'. Mystical or spiritual readings were to Perkins simply part of the underlying literal sense, rather than competing meanings.

45 Martin, G. (ed.), *The Holie Bible Faithfully Translated into English, Ovt of the Avthenticall Latin*, 2 vols, Douai: Laurence Kellam (1609-10), I, pp. 4-5, 1114.

46 Beard, T. *A Retractiue from the Romish Religion*, London: William Stansby (1616), p. 129.

47 Perkins, W. *The Arte of Prophecying*, London: For E. E. (1607), p. 31.

48 Perkins, W. *A Commentarie or Exposition, vpon the Fiue First Chapters of the Epistle to the Galatians*, Cambridge: John Legate (1604), pp. 345-346.

Antiquarianism and natural evidence

While the Reformation made the fourfold interpretation of Scripture controversial between confessions, therefore, it did not make it intellectually redundant. Although it is true that Protestants tried to assert that all interpretations must derive from the literal sense, Protestant use of allegory went beyond the typological readings that Harrison is willing to admit, and included other forms of figurative speech whose function was to make it clear what the Church should believe.⁴⁹ The interpretation of the text, moreover, was governed by conscience rather than by historical fact. What drove Protestant exegetes towards more historically grounded interpretations was the need to use the literal sense in context, not a move away from allegory. At the same time, Catholic critics themselves developed a more textually focused and historical form of exegesis, largely in order to attempt to hold Protestants to account for errors of interpretation.⁵⁰

For both confessions, one of the principal vehicles of expression was the biblical commentary, in which it was common for authors to fail to adjudicate difference of opinion concerning natural knowledge. The impetus to improve translations, to develop an accurate chronology to accompany historical narratives, or to identify biblical animals and plants came from philological and antiquarian pursuits as much as from changes in natural philosophy.⁵¹ Each of these developments grounded biblical interpretation more firmly in the realm of the factually verifiable, and each was encouraged by the Baconian activity of collecting and analysing matters of fact. Yet theologians and biblical critics were not trying to make the Bible into scientific truth, or applying the yardstick of natural knowledge to divine inspiration. At the same time, it was perfectly acceptable for theologians to continue to learn about the faculties of human beings and the processes of creation according to the categories of scholastic natural philosophy.⁵² This was even true in a university such as Oxford, whose supposed adherence to outdated modes of natural knowledge had come under very public attack during the 1650s.⁵³

At the end of the seventeenth century, there was one area of biblical interpretation in which the literal sense of Scripture and contemporary ideas of natural knowledge were brought consistently into dialogue. For Thomas Burnet (1635-1715) and his large number of critics or imitators, the natural processes through which God had created the earth and altered its physical form as a result of providential history required explanation in terms consistent with

49 cf. Harrison *op. cit.*, (29), p. 159.

50 Laplanche, F. *Bible, sciences, et pouvoirs au XVII^e siècle*, Naples: Bibliopolis, (1997), pp. 41-68.

51 See Miller, P.N. "The "Antiquarianization" of biblical scholarship and the London Polyglot Bible (1653-57)", *Journal of the History of Ideas* (2001) 62, 463-482.

52 e.g. from Pemble, W. *Tractatus Tres*, Oxford: Edward & John Forrester (1669).

53 Debus, A.G. (ed.) *Science and Education in the Seventeenth Century: the Webster-Ward Debate*, London: MacDonald (1970).

modern natural philosophy. The Cartesian answers that Burnet gave proved highly controversial. This was partly because of the natural philosophy that they embraced, but mainly a result of the syncretic, Platonist version of Christianity that they revealed Burnet to believe in. Very few of Burnet's critics had serious trouble with the fact that he read the words of Genesis in highly figurative terms, not least because he was explicitly doing so in order to put them in the context of the New Testament text, 2 Peter. Burnet himself was explicit in calling his work a 'theory', rather than claiming authoritative status for it.

Nevertheless, the arguments that raged about the propriety of reading the Bible through the eyes of contemporary natural philosophy certainly shocked a number of prominent writers.⁵⁴ Gaukroger indeed argues that the controversy which Burnet's work provoked brought to an end one phase of the development of natural historical enquiry, opening up a space for the more mathematical physico-theology of the eighteenth century.⁵⁵ Yet it is worth asking how the topic of the Flood, which lay at the heart of Burnet's work, had come to be such an important and difficult one for contemporary exegesis. The answer did not lie with the findings of natural philosophers, which, as Burnet and others realised, might be deployed successfully to underpin a historical and literal reading of the text of the Bible.⁵⁶ Although a purely allegorical reading of the Flood might have avoided the problem, no contemporary critic, whether Catholic or Protestant, believed that the historical dimension of the story of Noah could be ignored.⁵⁷ Instead, two developments had made this part of Genesis particularly problematic.

Threats to consensus

One of these developments was a paradoxical attempt by the heterodox French writer, Isaac La Peyrère (1596-1676) to take the analogy of faith to an extreme conclusion and argue that the exegesis of Romans demanded that there had existed a separate and earlier creation of Gentiles, who did not share in the original sin of the Fall, alongside that of Adam, from whom the Jews had descended.⁵⁸ Another was the realisation, already present in Bacon's *New*

54 See, in general, Poole, W. *The World Makers*, Oxford: Peter Lang (2010).

55 Gaukroger *op. cit.*, (29), pp. 507-508.

56 Rappaport, R. *When Geologists were Historians, 1665-1750*, Ithaca: Cornell University Press (1997).

57 This was true even for sixteenth-century Catholic interpreters who were strongly disposed to advance a typological reading of the Flood and the Ark: see Montano, B.A. *Antiquitatum Iudaicarum Libri IX*, Leiden: Franciscus Raphelengius (1593), esp. p. 80 and facing plate.

58 La Peyrère, I. *Prae-Adamitae*, [Amsterdam]: [Louis and Daniel Elsevier] (1655). La Peyrère was ostensibly discussing Romans 5: 12-14, 'Wherefore, as by one man sin entered into the world, and death by sin; and so death passed upon all men, for that all have sinned:/ (For until the law sin was in the world: but sin is not imputed when there is no law./ Nevertheless, death reigned from Adam to Moses, even over them that had not sinned after the similitude of Adam's transgression, who is the figure of him that was to come.'

Atlantis, that historical chronology made it difficult to reconcile the flood stories of ancient peoples with the biblical flood. The apparent novelty of the inhabitants of America and the evident antiquity of those of China made it increasingly difficult to believe in a universal flood, followed by the dispersal of peoples descended from a single family. Geographical and historical discovery made it problematic to rely on the evident meaning of Scripture.⁵⁹ This second development fell primarily in the realm of antiquarianism that was encouraging a more historical approach to the text of the Bible. The first posed serious problems for traditional ideas of the book of conscience, whether in Protestant or Catholic exegesis.

These two cases exemplify the way in which the literal sense seemed to undermine itself. This was the conclusion which gave intellectual bite to the works of a succession of heterodox critics of Christianity during the second half of the seventeenth and the first half of the eighteenth centuries. Their arguments did not dismantle the factual relationship between biblical truth and natural knowledge. Instead they challenged the authority of clergymen and theologians to pronounce on matters of conscience.⁶⁰ This was precisely the outcome that scholastic critics of the new philosophy, against whom writers like Glanvill had taken up their pens, had predicted would be the consequence, not of new knowledge, but of the disrespect for antiquity and learning that in their minds characterised the work of Bacon and his successors. Protestantism did not create a new respect for facts, nor did natural knowledge underpin a literal hermeneutic. Human disputes, misunderstandings, and mistakes allowed individuals to reshape the world of knowledge throughout the early modern period in a process that shows no sign of ending in modernity.

Scott Mandelbrote is Fellow and Director of Studies in History at Peterhouse, Cambridge, and Sub-Warden of All Souls College, Oxford.

59 See Poole, *op. cit.*, (54); see also Jorink, E. "Horrible and Blasphemous": Isaac La Peyrère, Isaac Vossius and the Emergence of Radical Biblical Criticism in the Dutch Republic', in van der Meer, J.M. & Mandelbrote, S.(eds.) *Nature and Scripture in the Abrahamic Religions:Up to 1700*, 2 vols., Leiden: E.J. Brill (2008), II, pp. 429-450. cf. Bacon *op. cit.*, (1), p. 227.

60 See e.g. Champion, J.A.I. *The Pillars of Priestcraft Shaken*, Cambridge: Cambridge University Press (1992).