

---

*Seeking Truth: Roger North's Notes on Newton and Correspondence with Samuel Clarke c. 1704–1713* by Jamie C. Kassler

Farnham, UK/Burlington VT: Ashgate, 2014. Pp. xii + 374. ISBN 978–1–4094–921–8. Cloth \$ 144.95

---

*Reviewed by*  
Paul Greenham  
Tel Aviv University, Israel  
[paulgreenham@post.tau.ac.il](mailto:paulgreenham@post.tau.ac.il)

That early modern theories of natural knowledge had dramatic theological implications may seem obscure to the modern-day reader. Nonetheless, the reception of Newtonian physics at the turn of the 18th century reveals an interconnection between epistemology, the nature of reality, and early modern concepts of God and nature. And, in the case of a provincial English intellectual named Roger North, it reveals a growing apprehension regarding the Newtonian vision. Jamie Kassler's new edited volume of North's writings exposes the reader to the wider context of the contemporary response to Isaac Newton's ideas, from North's critical notes on his reading of Newton's natural philosophy to his correspondence with Samuel Clarke, one of Newton's close disciples, on matters of physics and theology.

Roger North (1651–1734) is of historical interest both for his autobiography, *Notes of Me*, and for his scientific analysis of music in his comments on his brother Francis North's *Philosophical Essay of Musick* (1677). Of particular interest to the history of science, however, is Roger North's 'probabilistic' style of reasoning in natural philosophy, drawn from his training in common law and a combination of inductive and hypothetico-deductive method. North, the youngest son in a financially struggling aristocratic family, trained in Cambridge and then London as a lawyer and, after a number of familial tragedies (including the deaths of all of his older brothers), left his public appointments in London and became the lord of a manor in Rougham, Norfolk, permanently settling there in 1696. For the remainder of his days, North pursued the life of a provincial intellectual, remaining current with new ideas in natural philosophy and engaging in a program of self-critical reflection on the 'New Philosophy'. This was coupled with a number of correspondences that 'supplemented his method of critical reflection with a

method of contradiction modeled on the adversarial method he had learned' as a practitioner of law [3–4].

*Seeking Truth* follows the narrative of North's encounter with the New Philosophy (Cartesian and then Newtonian), his critical responses to it, and his possible association of Newtonian non-mechanical powers with Newtonian heterodoxy in his correspondence with Clarke. North first encountered the New Philosophy in Cambridge, where he purchased and read Descartes' collected works and learned the Cartesian method of suppositions or hypotheses derived from *a priori* principles. However, North's legal training introduced him to a means of inductive reasoning that took the form of a 'put-case', in which an argument proceeded 'from an hypothesis derived from experience, not from *a priori* principles' [38]. North applied this form of reasoning to natural philosophy, adopting a probabilistic method that proved a theory by reasoning out its essential consequents and verifying those consequents in experiment and experience. Unlike Descartes, who also presented his suppositions as experientially verifiable, North did not consider them deducible from *a priori* principles but used deduction by analogy from previously (experientially) established knowledge and repetition of instances (a form of inductive sampling) to establish his suppositions. In this way North derived reliable, yet probable, natural knowledge in a similar manner to how one formed a legal ruling based on the evidence of witnesses and prior rulings in the tradition of common law.

Additionally, for North, 'nature has limited our sensori-motor capacity for information processing' such that 'we must continually live with the risk of being in error' [44–45].<sup>1</sup> Hence, knowledge of the natural world consists 'in different degrees of probability' and we can only know our immediate sensations (appearances) with absolute certainty [45]. Nonetheless, North was still committed to an ontological reality and to nature as rule-governed, based on his belief in the Christian doctrine of Creation. This scepticism combined with fideism, Kassler suggests, derived from his reading of Michel

---

<sup>1</sup> North's distrust of our sensori-motor capacity came from his study of the mind's perception of sound and music. Essentially, the sensorial system can be overwhelmed with input and thus the mind adjusts and compensates by determining superstructures (tone, pitch, etc.) from the sensorial inputs. This means, for North, that the ideas of things do not emerge directly from the real/external/corporeal entities or natural things themselves but from the modes of the mind as it processes external 'data'.

Montaigne's *Essais*.<sup>2</sup> For North, knowledge of natural phenomena (appearances) was directly attainable *via* probabilistic reasoning. Additionally, the assumption of the reasonableness of the natural world (*via* God's creative and sustaining power) implied that 'knowledge of reality [truth] is a kind of knowledge that may be rendered plausible or probable from the evidences of natural knowledge' (i.e., appearances) [49]. Nonetheless, such evidence could never provide an adequate demonstration of truth, as 'belief in reality (including the supreme reality) is an act of faith, not understanding' [49]. Given North's probabilistic style of reasoning, it is no surprise that his subsequent encounters with Newtonian natural philosophy, particularly its assertion of absolute (true) entities (i.e., space and time) in discussions of natural phenomena (appearances), generated a degree of gentlemanly criticism.

Kassler's edited volume builds upon the manuscript record of North's critique of Newtonian natural philosophy. She provides detailed descriptions of the manuscripts of North's self-critical notes on reading Newton's *Principia* (1687) and *Opticks* (1704 and the 1706 Latin *Optice*), assessing physical conditions, many versions, and dates of composition. Likewise, Kassler details the manuscripts of many letters by both North and Clarke in a subsequent correspondence in 1706 with Clarke on 'phisiologicall matters' (i.e., physics or natural philosophy) and, some years later, on theological matters [113]. Neither North's adoption of an internal critic of himself (his 'self-critical method of reflection') nor his turning to an external 'adversary' (Clarke) to improve his own understanding appears to have moved him any closer to a fundamental acceptance of the Newtonian system. North maintains that Newton's certain mathematical demonstrations nonetheless cannot guarantee certain knowledge in physics (let alone theology, morality, or policy), which was instead obtained through 'skill in probabilities' [111–112]. Moreover, North criticized Clarke's assertion that the infinity of space and time depended on a necessarily existing substance (God), since this assertion ultimately relied on what we can or cannot imagine (*viz.* infinity without necessary being). Rather, for North, our ideas of infinity come from our senses, which 'may deceiv in this'; whereas our ideas of almighty power come from reflection

---

<sup>2</sup> Kassler discounts the 'constructive scepticism' of 'so-called latitudinarians' such as William Chillingworth, John Wilkins, and John Locke as a principle source [48].

[185].<sup>3</sup> Hence, North's ontological commitment to independent realities (his realism) was epistemological, deriving from a focus on how the realities can be known, rather than metaphysical (as Kassler characterizes Clarke's realism), and on the foundation of reality as necessary existence. North's particular epistemological realism entailed a form of fideism.

North brought his fideistic realism to bear in his later correspondence with Clarke on theological matters. In 1713, North composed a response to Clarke's controversial *Scripture Doctrine of the Trinity* (1712), apparently at Clarke's request. This response, in the form of a letter, went through many revisions and was, at one point, intended for publication. In it, North defended orthodox Trinitarian belief, criticizing Clarke's attempts to provide a rational system for the relationship between Father, Son, and Holy Spirit. Clarke's strong subordination of the Son to the Father (and of the Spirit to both), coupled with his argument that there was no direct scriptural attestation for a substantial unity of divine persons, was of doubtful orthodoxy and, for North, rested on dubious foundations. North asserted that the divine nature, part of the absolute and true, was neither demonstrable *via* linguistic analysis of Scripture (or any inquiry at the phenomenal level) nor rationally comprehensible to human minds but to be taken on faith.

In her analysis of North's response, Kassler situates Clarke's *Scripture Doctrine of the Trinity* within the trend in the early 18th century towards 'a rational (discursive) basis for language' [228]. For Clarke, the language of paradox such as the divine paradox of the Trinity was inadequate for descriptions of belief. Clarke's literal approach sought the plain meaning of parabolic and symbolic biblical passages and attempted to systematize Scripture, rendering it internally consistent. Clarke conceived the language of Scripture to have a timeless and unchanging meaning representative of God's intention and discoverable through careful interpretation. Hence, Clarke wished to cleanse the language by which the Church of England expressed its fundamental doctrine.

---

<sup>3</sup> North considered bodies to have a functional limit of divisibility (at the phenomenal level) but not an ultimate point of indivisibility (at the level of the real or true) as suggested by Newton's atomism. This entailed North's understanding of body as a universal extension (à la Descartes) that could be divided *ad infinitum* into 'an actual infinity of minuteness' (in the true or real state) but which in experience (the appearances) was not.

North, on the other hand, embraced the paradoxical expression of the Church's belief, conceiving language, even the language of Scripture, as subject to semantic change. As Kassler describes it, in North's view, language was an 'arbitrary invention of humans and a representation of their changing history and customary practices' [229]. As such, exact or absolute meaning was impossible to discern from spoken or written words and the interpretation of Scripture could only give probable meaning. In this allowance for the 'natural growth in a living language', Kassler argues that North demonstrated both a literary understanding of language—as opposed to Clarke's philosophical understanding—and an understanding inspired by the inevitable imprecision entailed in the use of language when practicing common law, itself entangled in the 'ambiguity that is part of life' [230]. Hence, North and Clarke's irreconcilably different epistemologies led to intrinsic divergences in their understanding of language and thus entailed conflicting approaches to biblical interpretation. And so, ultimately, these divergent epistemologies expressed in their earlier natural philosophical disagreement led to conflicting positions on the central Christian doctrine of the Trinity.

Although neither North nor his son was successful in his efforts to publish the theological correspondence, Kassler's edition and extensive commentary makes it accessible to the modern reader and sets it in the context of North's wrestling with Newtonian natural philosophy. In many ways, by arranging North's appraisal of Newtonian mechanics together with his rebuttal of Clarke's problematic views of the Trinity, Kassler's edition suggests both an association of Newtonian non-mechanical powers with Newtonian heterodoxy and North's possible awareness of that connection. North gave no direct indication that he knew of Newton's own heterodox position on the Trinity (similar to Clarke's) and while Kassler hints in her concluding remarks that his critique of Clarke's theology reveals an awareness of the connection between Clarke's theological position and his natural philosophy, she leaves it as a possibility.

Kassler's edited volume of North's encounter with Newtonian natural philosophy and Clarke's theology contributes a number of important observations to investigations of the study of nature in early modern England and raises further questions. Her detailed descriptions and editing of North's and Clarke's manuscripts give first-hand access to an otherwise obscure source of criticism of the Newtonian system. Her work provides fresh insight into epis-

temological foundations for natural philosophy deriving from traditions of common law. In many ways, North's probabilistic style of reasoning drawn from his experience with common law serves as an important parallel to John Locke's works on human reasoning, natural law, and empirical method, particularly where North's probabilistic epistemology diverges from Locke's empiricism. Kassler's presentation of North's probabilistic style reveals the inadequacy of differentiating ways of philosophizing in the early modern period into a dichotomy of 'rationalist' *versus* 'empiricist'. North's epistemology, drawing on Descartes' deductive method but using an appeal to empirical evidence based in common-law methodology, reveals the complexity involved in early modern approaches to knowledge of the natural world, as natural philosophers drew from many sources from law to theology. Indeed, Kassler's argument for the similarities between North's epistemological approach to natural philosophy and his fideistic realism in theology is well substantiated.

Furthermore, *Seeking Truth* reveals the importance of the meaning of language to Newton and his contemporaries, both supporters and critics, as seen in North and Clarke's divergent conceptions of how the language of Scripture should be read. Clarke's desire to 'cleanse' the creedal language of the Church and to discern an overall systematically consistent meaning in the language of Scripture strongly reflects Newton's patterns of scriptural interpretation and his desire to find the plain meaning behind symbolic texts of Scripture. Newton was highly dissatisfied with allegorical and metaphysical interpretations, particularly those which multiplied possible meanings of a given symbol or figurative representation in Scripture.<sup>4</sup> Defenses of orthodox Trinitarianism that appealed to paradox would have been equally unsatisfactory for Newton, since paradoxes are inherently multivalent (and usually contradictory), simultaneously figurative and definitive of abstractions. Indeed, the use of paradox expressed a metaphysical worldview which operated 'at the limits of discursive knowledge' [227] and thus resembled too

---

<sup>4</sup> See, for example, Newton's rules for interpreting biblical prophecy from an early theological manuscript that was composed in the late 1670s to early 1680s, which include the instructions: 'To assign but one meaning to one place of scripture', and 'To chose those interpretations which are most according to the literal meaning of the scriptures' [*Yahuda Ms. 1.1*, fol. 12r].

closely the proscribed use of unsubstantiated hypotheses.<sup>5</sup> Newton opposed language that did not have direct associations and sought to remove mystery from theological statements. Like Clarke—and likely a strong influence on Clarke—he insisted that the true meaning of a given scriptural passage was not only clearly discernible from the language of Scripture but that this meaning could be known with certainty.<sup>6</sup> Newton’s approach to theology reflected the ‘matter-of-fact’ approach to natural philosophy that characterized the Baconian method. John Locke advocated a similar approach in his theory of mind and language, which entailed ‘the elimination of all mystery and obscurity from philosophy, science, and theology, and the advancement of these subjects through reason’ [239]. Kassler’s presentation of North’s more literary—as opposed to literal—conception of language reveals the complexity of approaches to language in the period and the extension of theories of knowledge to a variety of interconnecting fields, from natural philosophy to language to theology.

Given Kassler’s central theme of epistemology in science and theology, her commentary on North’s manuscripts would have benefitted from a consideration of Jed Buchwald and Mordechai Feingold’s recent book, *Newton and the Origin of Civilization*, particularly their treatment of Newton’s scepticism regarding experimental data [2013, 44–106]. Reading *Seeking Truth* in light of Buchwald and Feingold’s work raises a couple of important questions: How does North’s probabilistic style of reasoning compare to Newton’s innovative averaging of experimental data, necessarily due to the inherent limitations of physical measurement? Does Newton’s scepticism

<sup>5</sup> Newton’s famous refusal to ‘feign hypotheses’ in the General Scholium to the *Principia* is a published example of his ubiquitous dislike of metaphysics [Motte 1729, 392].

<sup>6</sup> According to Newton, one of the rules to interpret the words and language of Scripture was

to acquiesce in that sense of any portion of Scripture as the true one which results most freely & naturally from the use & propriety of the Language & tenor of the context in that & all other places of Scripture to that sense. For if this be not the true sense, then is the true sense uncertain, & no man can attain to any certainty in the knowledge of it. Which is to make the scriptures no certain rule of faith, & so reflect upon the spirit of God who dictated it. [Yahuda Ms. 1.1, fol. 12r]

regarding verbal testimony, which was gained in the prosecution of forgers while Warden of the Mint, bear any resemblance to North's legal sources for his own reasoning in natural philosophy?

Moreover, in her concluding suggestion that North may have drawn the connection between non-mechanical Newtonian powers and Clarke's (and Newton's) heterodoxy, Kassler touches on an important question in current Newton studies: the degree to which Newton's seemingly clandestine non-Trinitarian statements in his published works were in fact perceived as heterodox by his contemporaries. However, Kassler's concluding suggestion would greatly benefit from a detailed consideration of this question in the literature. Larry Stewart's influential article 'Seeing through the Scholium', for example, demonstrates how Clarke's association with Newton factored heavily in certain contemporary interpretations of Newton's statements of God's supreme dominion as theologically suspect [1996, 123–165].<sup>7</sup> Moreover, Kassler's implication that Newtonian natural philosophy and heterodoxy were associated for North appears to draw on Betty Dobbs' association in *The Janus Faces of Genius* [1991] between Newton's non-mechanical powers and his Arianism (as Dobbs characterized his heterodoxy) but Dobbs receives no mention.

Finally, Kassler situates North's theological correspondence in the context of the numerous epistolary exchanges that his publication of *The Scripture Doctrine of the Trinity* generated, many of which were printed in future editions (although North's was not). But she does not situate his natural philosophical objections to Newtonian mechanics—*via* correspondence with Clarke—in the context of Clarke's later, strongly-charged correspondence with Gottfried Leibniz. Much of the appeal of Kassler's edition of North's writings lies in its insight into the English context for critiques of the Newtonian system, in contrast to the more familiar Continental challenge to Newton that was spearheaded by Leibniz. A comparison between the epistemological motivations for North's objections and those of Leibniz would not have been amiss.

Nonetheless, *Seeking Truth* provides an excellent source for the intellectual response to Newtonian ideas within England regarding both natural philosophy and its theological implications. It supplies in published form an

---

<sup>7</sup> Newton's published statements of God's supreme dominion were readily available in the General Scholium to the *Principia* [Motte 1729, 387–393].



exposition of a detailed theological argument against Clarke's *Scripture Doctrine* and the context for the irreconcilable epistemological positions of each antagonist. Kassler's in-depth commentary on Roger North's encounter with Newtonian natural philosophy reveals the theological implications of Newton's philosophical ideas, implications known even to his contemporaries, thus shifting our perception of the interaction between Newton's science and theology to an external, and not entirely receptive, audience. In the process, Kassler ably demonstrates that the interaction between Newton's science and theology is part of a larger overall web of individuals and ideas within the period and that, as such, the isolated thoughts of a backwater provincial are as important to our understanding of the period as those of the traditionally central characters. *Seeking Truth* is worth the read for historians of science focused on the early modern period, particularly those interested in the implications of Newton's views of body, space, and time in theological topics. It will be of equal benefit to those interested in the development of scientific epistemology, specifically the role that common law has played in the rational empiricism of modern scientific methodology.

## BIBLIOGRAPHY

- Yahuda Ms. 1.1. National Library of Israel, Jerusalem. An untitled treatise on Revelation by Isaac Newton.
- Buchwald, J. Z. and Feingold, M. 2013. *Newton and the Origin of Civilization*. Princeton, NJ.
- Dobbs, B. J. T. 1991. *The Janus Faces of Genius: The Role of Alchemy in Newton's Thought*. Cambridge, UK.
- Motte, A. 1729. *The Mathematical Principles of Natural Philosophy by Sir Isaac Newton*. vol. 2. London.
- Stewart, L. 1996. 'Seeing through the Scholium: Religion and Reading Newton in the Eighteenth Century'. *History of Science* 34.2:23–165.