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SAMUEL CLARKE, NEWTONIANISM, AND THE FACTIONS OF POST-REVOLUTIONARY ENGLAND

BY LARRY STEWART

The High-Church alarm of “Church in Danger” which rang throughout Anne’s reign was no mere electoral gambit. It represented a real fear that the Church was being destroyed by insidious forces from within, embodied by the activities of the Newtonian theologians, Whiston and Clarke. While this concern manifested itself most often in the politics of Convocation and from time to time in Parliament, there remained the more fundamental issue of the roots of those differences of which the warfare between High Church and Low was only a symptom. Well hidden at the time of the prosecutions of Whiston and Clarke was the question of the influence of Newtonian natural philosophy in the unorthodox scriptural interpretations of the two deviant divines. While the debate on the Trinity aroused a swarm of pamphlets alternately repelled and attracted by Clarke’s *Scripture-Doctrine*, the metaphysical assumptions of the Newtonian natural philosophy were also called into question.¹ Some went so far as to suggest that the Newtonian metaphysics, of which Clarke was the leading exponent, was the foundation of an unorthodox view of the Trinity. This connection, as we shall see, was made by Newtonian and anti-Newtonian alike, although more often in private correspondence than in print.

The emergence of a popular Newtonianism in the early eighteenth century meant that natural philosophy was injected with political and social ideology: the Newtonians were increasingly identified with the rise of a Whig oligarchy and with the difficult adjustments which followed the Revolution of 1687-89. It was thus not merely a political

¹ Thomas Herne, *An Account of all the Considerable Books and Pamphlets that have been wrote on either Side In the Controversy Concerning the Trinity, Since the Year 1712, In which is also contained, An Account of the Pamphlets Writ this last Year on each Side by the Dissenters, To the End of the Year, 1719* (London, 1720). J. Hay Colligan mistakenly identifies the author as Thomas Hearne the Oxford antiquarian; in fact, the author Thomas Herne was a controversialist who, as a follower of Samuel Clarke and Benjamin Hoadly, represented the Latitudinarian arm of the Church. Under the pseudonym “Phileleutherus Cantabrigiensis,” he wrote pamphlets in both the Arian and Bangorian controversies. *Dictionary of National Biography*, IX, 701. Cf. J. Hay Colligan, *The Arian Movement in England* (Manchester, 1913), 52 n. 1.

or intellectual revolution; for Newton and many of his enthusiastic followers, it was both.

In the first decade of the eighteenth century the public face of Newtonian science was formed. The years 1704 through 1706 were especially important: they included the first appearance of Newton's *Opticks* and Harris's *Lexicon Technicum*, the early work of Ditton, Cheyne, and Mead, followed by Samuel Clarke's Latin translation of the *Optice*, in 1706, with the new queries added by Newton. But it was also a time when the scent of deism was still strong, perhaps a result of the debates of the world-makers like Thomas Burnet.² In 1704, Samuel Clarke in his Boyle Lectures took it upon himself to deliver a blast against the deniers of revelation. A particular target was John Toland who had asserted in his *Letters to Serena* (1704) that motion was essential to matter. Toland had the temerity to quote from Newton's explanation of *vis inertiae* (Definition III of the *Principia*) in defense of his own assertion that matter is inherently active: "one Motion is always succeeded by another Motion, and never by absolute Rest, no more than in any Parcel of Matter the ceasing of one Figure is the ceasing of all, which is impossible."³ Toland translated the final portion of Definition III in a manner which emphasized the relative nature of motion and rest:

The Vulgar attribute Resistance to quiescent, and Impulse to movent Bodys; but Motion and Rest, as commonly conceived, are only respectively distinguish'd from one another, nor are those things always in true Repose, which are vulgarly consider'd as quiescent.⁴

But Toland was not really looking to Newton for support. He described the passivity of matter as a notion of sects in philosophy as well as of the vulgar. For Toland, the idea of "defining Matter only by extension, of making it naturally inactive, and of thinking it divided into real Parts every way independent of one another" necessarily resulted in the "erroneous consequence"⁵ of a void space. Thus his *conatus of motion* was the basis of an anti-Newtonian system.

It was necessary that Toland be answered. Humphry Ditton re-

² M.C. Jacob, *The Newtonians and the English Revolution, 1689-1720* (Ithaca, 1976), Ch. III; Jacob and W.A. Lockwood, "Political Millenarianism and Burnet's Sacred Theory," *Science Studies* (1972), 265-79.

³ John Toland, *Letters to Serena* (London, 1704; reprint ed. Stuttgart-Bad Cannstatt, 1964), 231.

⁴ *Ibid.*, 201-02. This differs from the Motte-Cajori version in one important, if subtle, way—in the translation of *vulgus/vulgo*. Motte-Cajori indicate this as "usually" or "commonly," which may be close to Toland's sense. The word *vulgus* has an eristic quality which did not escape Newton's critics. See below on Roger North. Cf. Florian Cajori, *Sir Isaac Newton's Mathematical Principles of Natural Philosophy* (Berkeley, 1971), 2.

⁵ Toland, *Letters to Serena*, 172-73.

plied with sarcasm in the Preface to his *General Laws of Matter and Motion*. William Wotton, chaplain to the family of Heneage Finch, and who evidently had some role in the selection of the Boyle lectures, quarreled with Toland's citing Newton's law of gravitation and yet refusing to admit a void space: "The truth is, a Man that can comprehend the Grounds upon which Mr *Newton* builds that noble Discovery, will hardly ever afterwards talk with Gravity against a *Void*." ⁶

While Wotton wrote his censure of the deist, Samuel Clarke delivered his Boyle lectures. Clarke, to whom Wotton was indebted in the *Letter to Eusebia*, had Toland specifically in mind in 1704 when he ascribed to atheists the idea of motion as essential.⁷ Both Wotton and Clarke were determined to establish the reality of empty space and to this end they both cited Newton's argument (in Corollaries III and IV to Proposition VI of Book III of *Principia*) that variations in the specific gravities of bodies resulted from the fact that all spaces are not equally full and hence a vacuum must be granted. In his Boyle lectures of 1704, Clarke argued:

If bare Matter be the Necessarily-existing Being, (for that there can be but One such, shall be proved hereafter;) then in that Necessary Existence there is either included the Power of Gravitation, or not: If not, then in a World *merely Material*, and in which no Intelligent Being presides, there never could have been any Motion; because Motion, as has been already shown, and is now granted in the Question, is not Necessary of *itself*: But if the Power of Gravitation *be* included in the Necessary Existence of Matter; then, it following necessarily that there must be a Vacuum, (as the incomparable Sir Isaac Newton has abundantly demonstrated that there must, if gravitation be an Universal Quality or Affection of Matter;) it follows likewise, that matter is not a Necessary Being: For if a Vacuum actually be, then it is plainly more than possible for matter not to Be.⁸

Thus, as Newton argued, from the principle of a vacuum it not only followed that specific gravity was proportional to the spaces between the particles of a body, but also that the inertial force of a body was proportional to its mass.⁹ Hence, the significance of Clarke's critique of Toland's distortion of Definition III: neither matter nor motion was "a Necessary Being."

⁶ [Will Wotton], *A Letter to Eusebia: Occasioned by Mr. Toland's Letters to Serena* (London, 1704), 66.

⁷ *Ibid.*, 71; Samuel Clarke, *A Demonstration of the Being and Attributes of God* (London, 1705), 45-59.

⁸ Wotton, *Letter to Eusebia*, 66-67; Clarke, *A Demonstration of the Being and Attributes of God*. 2nd ed. (London, 1706), 40, quoted here as the argument is more precise than in the 1705 edition.

⁹ *Principia*, Book I, Definition III. Cajori, ed., *Newton's Mathematical Principles*, 2.

The Newtonian Idea of the Trinity

In his Boyle lectures on the Being and Attributes of God, Clarke dismissed infinite materiality by demonstrating that it was possible for matter not to be, i.e., for a vacuum to exist. Thus, with due regard to God's spiritual nature, it was evident that matter could not be a necessary Being.¹⁰ From this Clarke launched into the *a priori* argument based on the necessity of a universal self-existent Being whose attributes must be eternity, infinity, and unity.¹¹ This theological view obviously bears a close resemblance to the Newtonian view of absolute space, a doctrine founded upon immateriality, which in turn may have led the way to Clarke's metaphysical view of the Trinity. However, it is quite evident that as early as 1704, Clarke was aware of the potential conflict between the Athanasian Doctrine of the three persons of the Trinity and the view of God determined by the *a priori* argument. To be sure, there was only a hint of this in 1704: "The Self-Existent Being, must of Necessity be but One." To think otherwise, Clarke argued, was to imply a contradiction as . . . "Necessity Absolute in itself, is Simple and Uniform, without any possible Difference or Variety. . . ." ¹²

Clarke's initial intention was to undermine the materialism of Toland and others that both God and matter could be considered self-existent principles. Clarke followed the same aim in his dispute with Henry Dodwell by denying the divisibility of consciousness or soul.¹³ About the time of his Boyle lectures, in 1704 and 1705, when he was also preparing the translation of the *Opticks*, Clarke first came to entertain serious doubts as to the authenticity of the Athanasian Doctrine.¹⁴ What had initially been an argument against materiality was transformed, *a priori*, into the foundation of the necessity of Divine unity. Much was to rest on the essence of that unity, to be sure, but in the first printed version of Clarke's lectures there is a discussion of unity which includes, in the margin, a brief reference to the Trinity. By 1711, in the third edition of the lectures the year before he published his *Scripture-Doctrine*, Clarke made the reference quite explicit:

That the *Unity* of God, is an *Unity of Nature*, or essence: For of *This* it is that we must be understood, if we would argue Intelligibly, when we speak

¹⁰ Clarke, *A Demonstration of the Being and Attributes of God* (London, 1705), 49-50.

¹¹ James P. Ferguson, *The Philosophy of Dr. Samuel Clarke and Its Critics* (New York, 1974), 23-26.

¹² Clarke, *A Demonstration of the Being and Attributes of God* (London, 1705), 93-94. ¹³ *Ibid.*, 96.

¹⁴ William Whiston, *Historical Memoirs of the Life of Dr. Samuel Clarke* (London, 1730), 10-13.

of Necessity or Self-Existence. As to the *Diversity of Persons* in the ever-blessed *Trinity*; that is, whether notwithstanding the Unity of the Divine Nature, there may not coexist with the First Supreme Cause, such Excellent Emanations from it, as may themselves be really Eternal, Infinite, and Perfect, by a complete Communication of Divine Attributes in an incomprehensible Manner; always excepting Self-Origination, Self-Existence, or absolute Independency: Of this, I say; as there is nothing in bare Reason, by which it can be demonstrated that there is actually any such thing; so neither is there any Argument, by which it can be proved impossible or unreasonable to be supposed; and therefore when declared and made known to us by clear Revelation, it ought to be believed.¹⁵

As late as 1711, Clarke was still able to declare the desirability of belief in the doctrine of the Trinity, although it is important to note that the question of its metaphysical viability had been raised as a result of the necessity of unity in a self-existent being. But his final statement implies a question which could only be answered through the study of Scripture. Thus, there appeared in 1712 Clarke's famous analysis of the texts of the New Testament which concerned the doctrine of the Trinity. What he found confirmed his suspicions.

While his analysis was scriptural, his concerns remained primarily metaphysical. Clarke asserted that while the New Testament did not expressly indicate whether the Son was created of the Necessity of nature or by the power of the will of God, the terms of Scripture—"Son" and "Beget"—implied an act of will. If this were so, then the eternal, absolute, attributes of God were not those of the Son whose attributes must therefore be relative, the result of divine authority over man.¹⁶ Clarke had, he thought, established a difference between the absolute and the relative in the Trinity—a difference which was fundamental to the Newtonian philosophy. Whether his theological views derived from his metaphysical principles was to be the occasion of much debate. The aspersions of Arianism which were so quickly cast in his direction, while obviously a matter of Church politics, involved a considerable interest in the philosophical assumptions upon which Clarke had initiated his investigations. Thus, the attack upon Clarke took the form of a detailed examination of his metaphysics, while political battles raged in a time uncertain of the succession and High-Church Tories seemed bent on self-destruction.

The shift in the axis of the political world which followed the death of Queen Anne gave the Low Church some hope that religious persecutions might be curtailed. Certainly, it seems the decline of the High-Church party ensured Clarke's work an influence which it might otherwise have had only in freethinking circles. On Christmas Day,

¹⁵ Clarke, *A Discourse Concerning the Being and Attributes of God, The Obligations of Natural Religion, and the Truth and Certainty of the Christian Revelation*. Third edition, corrected (London, 1711), 51.

¹⁶ Clarke, *The Scripture Doctrine of the Trinity* (London, 1712), 280, 290.

1714, John Jackson, the Rector of Rossington, wrote to Samuel Clarke to indicate that he had been so convinced by the *Scripture-Doctrine* that he had ceased to read the Athanasian Creed during service.¹⁷ This was not a sudden decision. Jackson and Clarke had been in correspondence at least since the time of Clarke's difficulties with Convocation. Since Jackson was not yet willing to risk the wrath of the High Church, he published anonymously in 1714 a portion of his correspondence with Clarke. Here Jackson defended Clarke from the charges of heresy and tried to draw a line between the supposed Arianism of Whiston's Primitive Christianity (which seemed to suggest that the Son was created) and Clarke's view of the unity of God. Clarke replied that he regarded the idea of three persons in the same individual substance to be a "self-evident . . . Contradiction." Clarke then perhaps gave away why he had made his opinions on the matter public in the form of an examination of Scripture rather than as a philosophical disquisition. He was well aware of the criticism that had been voiced against natural reason "because the Great popular Objection against Men that think seriously and carefully about these things, is, that they are apt to adhere to their own *Reason* more than to the *Scripture*: which is a most unjust Suggestion."¹⁸

Metaphysics and Newtonianism

Until the prosecution of Clarke was halted by the bishops in the summer of 1714, most of the criticism directed at him had been within the context of the politics of the Church, or at the very least, of what we might call the politics of the reason vs. revelation debate. One notable exception, from the pen of a young student at the Dissenting Academy at Tewkesbury, Joseph Butler, took the form of a series of letters that he wrote to Clarke between November 1713 and February 1714. These letters were later published by Clarke with his replies but without identifying Butler as the "Gentleman in Glostershire." Butler had pressed Clarke on the necessity of unity in the self-existent being which allowed no division of natures. It became clear from Clarke's answers that his view was based entirely upon the assumptions of the necessity of the existence of space and time which Newton had demonstrated as the only solution. For Newton, it was absolute mathematical space, and not relative space, which was real. Clarke seems to have introduced a subtle difference into this view although this may well be one of expression only. He described space and time as "very *abstruse*" which were "*Affections which belong, and in the order of our Thoughts are antecedently necessary, to the Existence of*

¹⁷ B.M. Add. MSS, 4370, f. 27. Jackson to Clarke. Christmas Day, 1714.

¹⁸ [John Jackson] *Three Letters to Dr. Clarke, From A Clergyman of the Church of England; Concerning his Scripture-Doctrine of the Trinity* (London, 1714), 31. Clarke to Jackson, Oct. 23, 1714.

all Things.”¹⁹ For Clarke, since space was necessarily existent, space was a property of the self-existent substance. However, space was not substance. All substances, other than the self-existent, were in space; “but the Self-existent Substance is not *IN Space*, nor *penetrated by it*, but is itself (if I may so to speak) the *Substratum of Space*.”²⁰

It is of great significance that Space, for both Clarke and Newton, was a property, not self-existent in its own right but an effect of self-existence. This was not the same as the essence of self-existence which we cannot distinctly know.²¹ That this discussion had taken place within a few months of the appearance, at the end of June 1713, of the second edition of the *Principia* with its new “General Scholium” is important. In his fifth reply to Butler, when he sought once again to make it clear that space and duration were not of themselves substances, Clarke cited the scholium to Definition VIII where Newton distinguished between absolute and relative. Moreover, when discussing the substance upon which the existence of space and duration depend, Clarke cited directly from the General Scholium: “*Deus non est Aeternitas vel Infinitas, sed aeternus & infinitus. . .*” For Clarke and his followers, this Newtonian view of God was the foundation upon which rested so much of their theology. Clarke’s reply to Butler, in the spring of 1714, represents the first time that Clarke had been prepared to make the relation between his scriptural views and the Newtonian metaphysics explicit:

How universally have men for many Ages believed, that *Eternity* is not *Duration* at all, and *Infinity* no *Amplitude*? Something of the like kind has happened in the matter of *Transubstantiation*, and (I think) in the Scholastic Notion of the *Trinity*, etc.²²

While Joseph Butler questioned the metaphysical basis of Clarke’s Boyle lectures, Clarke received a far more sympathetic hearing from John Jackson.

After having read Clarke’s *Scripture-Doctrine*, Jackson initiated a

¹⁹ Clarke, *A Discourse Concerning the Being and Attributes of God . . . Fifth edition, Corrected. There are added in this Edition, Several Letters to Dr. Clarke from a Gentleman in Gloucestershire, relating to the first Volume; with the Drs Answers* (London, 1715), 14. Clarke to Butler, Nov. 23, 1713. See also, John H. Gay, “Matter and Freedom in the Thought of Samuel Clarke,” *JHI*, 24 (1963), 96-97; and Ferguson, *Philosophy of Dr. Samuel Clarke*, 32-34.

²⁰ Clarke, *Discourse* (1719), 21. Clarke to Butler, Dec. 10, 1713.

²¹ Clarke, *A Discourse Concerning the Unchangeable Obligations of Natural Religion, and the Truth and Certainty of the Christian Revelation. Being Eight Sermons Preach’d at the Cathedral Church of St. Paul in the Year 1705, at the Lecture Founded by the Honourable Robert Boyle, Esq.* Third edition, corrected (London, 1711), 4, note.

²² Clarke, *Discourse* (1719), 33. Clarke to Butler, April 8, 1713/14.

correspondence only part of which was published in 1714 after Clarke's difficulties with Convocation. While Jackson's anonymous *Three Letters* were significant discussions of the problem of the Athanasian Creed, they represent only a minor part of a lengthy correspondence and cooperation in the face of his and Clarke's theological and indeed, political, enemies. In a sense, the failure of scholars to find much of the Clarke-Jackson correspondence in print may represent the myopia of those who see the history of seventeenth-century science simply in terms of such great works as the *Principia*. This is all the more puzzling as the Jackson-Clarke letters overlap the well-known queries of Joseph Butler to Clarke and the far more famous correspondence of Clarke with Leibniz. These three sets of letters should not be too readily separated, for together they demonstrate a growing realization on the part of Clarke's readers, and perhaps to some extent an increasing willingness on the part of Clarke, to admit that his theology rested largely on Newtonian metaphysics. This relationship of Clarke to Newton became widely recognized and accepted. Clarke's defenders found in Newton a foundation for their scriptural views while his detractors, whose innate tendency to the High-Church ground was well-known, simply saw in this the confirmation of all their suspicions about the new philosophy.

It was in his letters to Jackson that Clarke indicated the source of his metaphysics: as it pertained to the *real* existence of absolutes this had been the Scholium to Definition VIII of Newton's *Principia*.²³ Thus, the General Scholium of the second edition (1713) was not a necessity for the formation of a Newtonian metaphysic. It is not without interest that Clarke's admission came shortly after the initiation of the famous exchange with Leibniz on the perfection of God. Apparently Jackson had already recognized the significance of the *Principia*. On January 30, 1715 (just after Clarke's second reply to Leibniz) he wrote to Clarke; Jackson's letter is remarkable not only for the timely expression of his loyalty to "our good and Gracious K. George" but also because he informed Clarke:

About a Year ago I Consulted the Scholium to *Sir Isaac Newton's Princip: Mathemat:* Concerning the true Notion of God, and found it Exactly agreeable to your *scripture Doctrine*; I found also that the most learned Knight did ascribe a *Corpus* to the supreme God; which manner of speaking had Extremely puzzled Dr Edwards and his Friends; but I suppose he means by *Corpus* there the *Substance* of God, . . .²⁴

²³ Cambridge University Library, Add. MSS, 7113, f.21. Clarke to Jackson, Last day of year 1715.

²⁴ B.M. Add. MSS, 4370, fols. 37-38. Jackson to Clarke, Jan. 30, 1715/16. The reference is to John Edwards who regarded the General Scholium as the joint effort of Newton and Clarke. See Ferguson, *The Philosophy of Dr. Samuel Clarke*, 42.

This is clearly a reference to the General Scholium of the second edition. But, as Clarke undoubtedly realized, the General Scholium only made explicit what had been there in the first *Principia*. As I. B. Cohen has pointed out, the General Scholium merely follows what had already been laid down in Newton's discussion of relative and absolute terms in the Scholium following the Definitions in Book 1.²⁵ Clarke had made that distinction clear to Jackson. Newton's God was infinitely more than an Old Testament creator.²⁶ With Jackson the relationship between Scripture and natural philosophy had come full circle. Whereas Clarke's initial suspicions regarding the Trinity seem, in part, to have been aroused by his Newtonian metaphysics, Jackson now had found in Newton's General Scholium a proof of Clarke's scriptural program to eliminate the Athanasian Creed.

The High Ground

The connection which Clarke and Jackson had made between Newtonian metaphysics and the meaning of the Trinity suggested that the Newtonian philosophy could not hope to escape the attention of those who pursued heretics. This, of course, is precisely what happened. The most significant part of the debate came after the publication of Clarke's *Scripture-Doctrine* in 1712. The division of opinion concerning the theological work of Samuel Clarke and his followers seemed to follow lines of political and religious divergence. Similarly, the response to Newtonian natural philosophy and its role in the formation of heterodox theology depended to a considerable extent upon political, religious, and probably even metaphysical sentiments or attitudes rather than precise formulations of cause and effect. We cannot say that all High-Church theologians were hostile to Newtonian science. Nor can we categorically determine that all Latitudinarians were predisposed to support the new philosophy. One might expect the most orthodox members of the Church to fear that Newtonian natural philosophy might pose a threat to Anglican doctrine. To a considerable extent this fear was a vestige of the late seventeenth century when the Royal Society came under scrutiny because of aspersions that mechanical philosophy led to atheism. The hunt for deists in the early eighteenth century kept such views alive, and natural philosophy seemed to be fair game. When Whiston and Clarke began to expound on the Trinity during the Tory ascendancy in the latter part of Anne's reign, it was inevitable that Newtonianism should be suspected as the root of heresy.

Such suspicion probably had the greatest effect among those who

²⁵ I. Bernard Cohen, "Isaac Newton's *Principia*, the Scriptures, and Divine Providence," in *Philosophy, Science and Method. Essays in Honor of Ernest Nagel*, eds. Sidney Morgenbesser, Patrick Suppes, Morton White (New York, 1969), 524-26.

²⁶ Cf. Frank Manuel, *The Religion of Isaac Newton* (Oxford, 1974), 75-76.

regarded the Low Church, and especially the Whig Junto, with a particular animosity which was conspicuously evident among the Non-Jurors, those clergymen and laymen who, after the Revolution of 1688, balked at taking the oaths to the new dynasty of the House of Orange. On the whole, those who consistently refused to have any part of the government and the Church of which William was the head did so on the grounds that support would have constituted a violation of the Tory principle of divine right and hereditary succession. As a result, they were forced to give up their positions within both the Church and the structure of government. For the most part, they were also High Churchmen with a very conservative attitude toward changes in the liturgy of the prayerbook. Like their High-Church brethren, they refused to make any accommodation with those Whigs who supported a policy of religious moderation and an end to the political constraints upon non-conformists. However, unlike the rest of the High Church, they preferred to take a stand on principle against the validity of the Revolution. As a result, many of the Non-Jurors held not very secret sympathies for the Pretender biding his time in France.²⁷ Foremost among these was the Non-Juring Bishop, George Hickes.

By the time Samuel Clarke and William Whiston began those investigations which led them to the verge of heresy, George Hickes was the sole surviving Non-Juring bishop. His influence was so pervasive in the tiny Non-Juring community that it became known as the "Communion of Dr. Hickes."²⁸ It was a community continually under siege, always suspected of harboring Jacobites preparing for the return of the Stuarts. Such accusations came not only from the Whigs but also from those who were generally sympathetic to the scriptural investigations of the Latitudinarian clergy.²⁹ There was some foundation for these impressions, which tended to connect the Non-Jurors with the political sympathies of some of the High-Church Tories. When Hickes decided to continue the succession of the Non-Juring bishops by the consecration of Jeremy Collier, Samuel Hawes, and Nathaniel Spinkes, the ceremony apparently took place at St. Andrew's, Holborn in 1713, the very church to which Sacheverell was presented.³⁰ Indeed, in the aftermath of the Jacobite rebellion of 1715 Hickes's papers which charged the Church with "heresy, schism, perjury, and treason" were seized by the nervous authorities.³¹ So

²⁷ H. Broxap, "Jacobites and Non-Jurors," *The Social and Political Ideas of Some English Thinkers of the Augustan Age, A.D. 1650-1750*. J.F.C. Hearnshaw, ed. (London, 1928), 101-02.

²⁸ *Ibid.*, 101.

²⁹ John Disney, *Memoirs of the Life and Writings of Arthur Ashley Sykes, D.D.* (London, 1785), 35. Disney, much influenced by the work of Clarke, left the Church and declared his Unitarianism. See C. Robbins, *Eighteenth-Century Commonwealthman, passim*.

³⁰ Broxap, "Jacobites and Non-Jurors," 103; and, *D.N.B.*, IX, 803.

³¹ Disney, *Memoirs of Sykes*, 35-36.

concerned was the government over the influence of Hickee that his death in 1715 did not prevent the authorities from continuing to search out sedition amongst his followers. When *The Constitution of the Catholick Church* was published posthumously, in 1716, the printer's premises were searched upon information that it was a treasonable pamphlet. The reply by Benjamin Hoadly, *Preservative Against the Principles and Practices of the Nonjurors*, represented the immediate origins of the Bangorian Controversy.³²

Hickee's attitudes towards the major theological issues of the day indicate his sympathy with the High Church. He held a particular dislike of Whiston; in 1712 he went through the notes of the deceased Dr. John Grabe and published a commentary upon Whiston's view of the Trinity.³³ Hickee was also a prolific letter writer so that his attitudes are best revealed through a private correspondence which he continued over a number of years with one of the most prominent of the lay Non-Jurors, Roger North.

Most well-known to historians of literature for his masterly *Lives of the Norths*, Roger had been a prosperous lawyer under the Stuarts and solicitor to the Queen at the time of the Revolution. Thereafter he had nothing to do with the new dynasty, and by 1695 retired to his country estate at Rougham. Through the papers of the captured Jacobite spy Christopher Layer, North was implicated in attempts to supply support to the Pretender. Although the evidence provided by Layer's imagination may be suspect, there is no doubt that North was sympathetic to the Stuarts. In 1696 he married the daughter of Sir Robert Gayer who had managed to escape to the Continent after having been implicated in the plot of 1695.³⁴ But North's long standing membership in a community defined by its objection to the Revolution, and his subsequent attack upon Newtonianism, make him representative of the orthodox attitude toward the new philosophy founded upon the *Principia* in 1687.

Despite his retirement, North was active in the pursuit of what he considered to be doubtful political opinion. In the intoxicating Tory days of the spring of 1710, a week before Sacheverell made his triumphal entrance into Oxford, Bishop Hickee urged North to under-

³² William Bradford Gardner, "George Hickee and the Origin of the Bangorian Controversy," *Studies in Philology*, 39 (1942), 66-67.

³³ J.G. Barnish, "Orthodoxy and Heterodoxy: The Trinitarian Dispute in the Church of England, 1710-1730" (B.D. thesis, Oxford, 1966), Chap. II, 48; also, Bodleian, Ballard MS, 12, f. 196. Hickee to Charlett, Feb. 21. 1711/12.

³⁴ Paul S. Fritz, *The English Ministers and Jacobitism between the Rebellions of 1715 and 1745* (Toronto, 1975), 71, 80, Appendix 2, 143; G.V. Bennett, "Jacobitism and the Rise of Walpole," in *Historical Perspectives: Studies in English Thought and Society*, ed. Neil McKendrick (London, 1974), 88-89; Roger North, *The Lives of the Right Hon. Francis North, Baron Guilford; The Hon. Sir Dudley North; and the Hon. and Rev. Dr. John North*, ed. Augustus Jessop. 3 vols. (London, 1890), 3, Supplementary, 300-01.

take an answer to White Kennett's Whig history, *A Complete History of England*. The result was the *Examen* which was finished in 1713 along with a "scornful" pamphlet on John Locke.³⁵ More important, North was also the author of an acrimonious manuscript attack on the theology of Samuel Clarke. North probably had some contact with Clarke about some "physiological matters" [*sic*] prior to the publication in 1712 of *The Scripture Doctrine of the Trinity*. However, the occasion of the "Answer to Dr Clarke" was the solicitation by Clarke of North's views on the subject.³⁶ A copy was passed to Hickes for his comments. North obliged his Bishop by accusing Clarke of attempting "to set up reason against Revelation." This was the predictable High-Church position; the attitude that all revelation was at stake was characteristic of the High-Church mentality. One hears echoes of Erasmus Warren's fears in the 1690s when he wrote against Thomas Burnet. In North, a man displaced by the Revolution, a Non-Juror by choice whose father-in-law was a hunted Jacobite, there prevails a sense of an impending battle, that it must be all or nothing:

. . . I shall In ye Mean time take ye freedom to Remark that Things will Not lye tho Men may and ye latter Even in so doing discover their falsity, by ye nature of those things they medle with, as for Instance, the declared Enimys of all Revealed Religion, doe not or very seldome apply their force against Religion itself directly, or say there is no Revelation of any, but they fall foul upon the Misterys of our faith and Endeavour to demolish them; supposing If they can once prevail to have misterys laid aside, or wch is as bad, or wors, Interpreted into worldly Resemblances, & so Reduced to Nothing, that then all Revealed Religion must Tumble; for ye Argument is Thro-stitch, and Must conclude, all or None. . . .³⁷

North was absolutely determined to defend the revelation of the Trinity against Clarke's *Scripture-Doctrine* which he considered to be in complicity with atheism.³⁸ A copy of this "Answer" was sent to Hickes for his comments, as the work of North fitted readily into the campaign which Hickes had been conducting against the Latitudinarian clergy. The acknowledgment by Hickes, which is to be found among North's manuscripts, is one of the most instructive documents relating to the High-Church perception of Newton's science. The reply is dated May 23, 1713, notably just *before* the appearance of the

³⁵ P.T. Millard, "The Chronology of Roger North's Main Works," *Review of English Studies*, n.s., 24 (1973), 287-89.

³⁶ B.M. Add. MSS, 32551, f. 1^r. Works of Roger North, XXIV. This "Answer" was the second version and can be dated from internal evidence after the death of Hickes in 1715 but probably before 1719. The first version, Add. MSS, 32550 is dated Feb. 20 [?], 1712/13.

³⁷ B.M. Add. MSS, 32550, f. 12. Works of Roger North, XXIII. Rougham, Feb. 20 [?]. 1712/13.

³⁸ B.M. Add. MSS, 32550, fols. 12, 22-23.

second edition of the *Principia* with its General Scholium.³⁹ Hickes was not one to hide his feelings on a matter of such fundamental importance:

. . . Methinks ye telling him wee can have No Idea of ye devine Essence, should be an humbling consideration to him, & make him Reflect, that IF wee had bin capable of conceiving the HOW of a Trinity and unity of 3 persons In one essence, God would Not only have Revealed the thing but have made us clearly understand ye how of it, and so have made it ye object of our understanding as well as ye Matter of our belief. . . . You seem to have a Mind to animadvert [?] on their New philosophy and I hope you will have health, & leisure to doe it. *It is their Newtonian philosophy wch hath Made Not onely so many Arians but Theists, and that Not onely among ye laity but I fear among our devines.* I desire to keep yr Letter a litle Longer, wch If you would Consent to have it Made publick, I would consent to prepare it with a few Inconsiderable alterations for the press, I hope something he will say to it privately or publicquely will make it Needful to be published, for it is great pity it should be confined to private hands.⁴⁰

For Hickes, as well as for many in the High Church, Newtonianism produced a questionable theology. What resulted was a multivolume attack on Newton.

It is a singular misfortune that many of North's works have never been published. Even his celebrated *Lives of the Norths* appeared posthumously. The large bulk of his manuscripts, the compilations and revisions of a serious scholar after his retirement at Rougham in 1695, remain unpublished. From the point of view of the historian of science, as perhaps also for the political historian, this is easily explained. The manuscripts represent both a philosophical and a political failure: North was a Cartesian and a Tory with a framework of the world which was rapidly to expire amongst the intelligentsia. And it is the progressive, not the regressive, which has captured the attention of the historian of science. But as his Tory *Examen* represents a valuable view of the late Stuart period, his critique of Newtonian natural philosophy establishes how thoroughly North believed that Newtonianism and heterodoxy were woven together.

North's interest in natural philosophy dates from his early days as an undergraduate of Jesus College, Cambridge, where he read Descartes, presumably the *Principles*, three times until he understood him. From then on he was captured by the "vortices, vapours, and striata" from whose whirl he was never to escape. One of his early

³⁹ The second edition of the *Principia* did not appear until between June 18 and July 1, 1713. I. Bernard Cohen, *Introduction to Newton's Principia* (Cambridge, Mass., 1971), 246-47.

⁴⁰ B.M. Add. MSS, 32551, f. 34. George Hickes to North. May 23, 1713. My italics.

sources was Father Ignace Pardies, an eminent Cartesian and one of the first critics of Newton's optical experiments. Nevertheless, North did have some esteem for Newton's theory of colors although he did not regard the issue as finally settled.⁴¹ While North was predisposed to criticize Newton, his view was a unique one. North had nothing but admiration for Newton's mathematical achievements which he regarded as masterly, but, as he wrote to his nephew at Peterhouse in 1706, Newton's reputation would only have been enhanced had he "let dabbling in physics alone." This may now amuse us and for North's nineteenth-century editor it caused some consternation, leading him to suggest that what North really meant was dabbling in religious matters. We are to believe in a slip of the pen, but as we shall see, North wrote precisely what he believed. It is true, nevertheless, that theological consequences were never far from North's mind. In the same letter he refers to Whiston as the "Apocalyptic Geometer."⁴² For North, as well as for many of a High-Church persuasion, heterodox theology and the new philosophy were intimately related. Long before Leibniz, Roger North complained of the occult in Newton's philosophy.

One might be inclined to think that the encouragement of Bishop Hickeys led Roger North to demonstrate what he considered to be the flaws in the Newtonian system. It is more likely, however, that Hickeys's letter of 1713 merely prodded North to complete intentions he held from the 1690s. North's manuscripts, although evidently revised for publication from time to time, remained essentially his own jottings on philosophical matters which he considered of the utmost importance.⁴³ North was at his acerbic best when he reached the foundation of the Newtonian system, in the distinction between "absolutes and relatives." This was, as we are aware, of some significance in the debate which had surrounded the metaphysics of Samuel

⁴¹ North, *Lives of the Norths*, III, 15, 21, 25-26, 63-66; Louis Trenchard More, *Isaac Newton* (New York, 1962), 86-88, 104. North's brother, Dr. John North, was Master of Trinity College from 1677 to 1683 during Newton's residence at Cambridge.

⁴² North, *Lives of the Norths*, III, 254-55. Roger North to Philip Foley, December 22, 1706. Cf. Augustus Jessop, 255, n. 1 & 2. Jessop would also have us believe that the disparagement of Whiston refers to his publication of Newton's *Arithmetica Universalis* in 1707. There is some merit in this. North may simply mean Whiston's *Astronomical Lectures* published as *Praelectiones astronomicae. Cantabrigiae in scholis publicis habitae* (1707). However, in view of the religious connotation, it is at least possible that the lectures to which North refers are Whiston's Boyle Lectures on "The Accomplishment of Scripture Prophecies" which he was to deliver in 1707.

⁴³ Millard, "Chronology of Roger North's Main Works," 289-90; Millard, "An Edition of Roger North's *Life of Dr. John North* With a Critical Introduction" (D. Phil. thesis, Oxford, 1969), 55. My thanks to Dr. Millard for allowing me to examine a copy of his thesis.

Clarke. North, then, had some interest in examining the philosophical aspects of this issue:

I doe not know any subject matter Relating to a true Judgment of Natural things more obnoxious to most pertinacious prejudice then this of absolutes & Relativs; therefore I intend to bend all my artistry against them. It is a notion of ye vulgar, that place is a most stated sure thing, as Is their church steeple, and If all ye world sunk into Nothing, yet here and there would be the same. . . . These I say are the opinions of the vulgar, but however Great philosophers, and chiefly Sr Is. N. think fitt to maintain them, I conceiv it is from ye same force of prejudice In them all, but it is so deep Rooted In humaine nature that philosophy is too weak and If tainted with popularity Not willing to remove it. . . .

But then let there be space, that must be Infinite, I deny there is any here or there in it, but onely Relatively, that is Respecting somewhat or other . . . for suppose but one body In space infinite, it is all one where it is, Nothing can be affirmed of it differently from situation, but still it is In vacuo Infinito, and thats all. Sr Is. N. will affirm otherwise, that there is absolute space, and so will ye Rabble, but neither give a reason, but that None can imagine . . . So for Motion, If a body be solitary In vacuo Infinito (I comply with ye Notion) can any one say, that such body moves, or rests. . . .⁴⁴

Throughout his manuscripts, North returned time and again to Newton's Scholium to Definition VIII. In view of his theological preoccupation with Clarke this is not surprising. There is no doubt that the distinction between absolute and relative terms was at the root of Clarke's metaphysics. This distinction North regarded as vulgar, an idea which Newton had argued into reality; along with attractions, qualities, and tendencies, it "perverts the knowledg of things, into a logick of words."⁴⁵ Newton and Clarke had proposed the necessary reality of absolutes from the necessity of their conceptions. But to North, the necessity of the absolutes of space and time, or at least to argue that space and time coincided with a Deity, was to encroach upon the power of the Deity "and so come neer to Hobbisme."⁴⁶ These notions of absolutes and relatives, of gravity, attractions, inertia, and void space, North intended to replace with a Cartesian aether the vortex of which rotated swiftest at the centre and slower away from it, which he was willing, like the Newtonians, to argue from the observed effects.⁴⁷ If the universe operated by way of a material aether the motion of which was originally imparted to it by God, then there was no need to distinguish between the creations of matter, space, and time. Space and time had likewise been created

⁴⁴ B.M. Add. MSS, 32545, fols, 220-21.

⁴⁵ Millard, "Life of Dr. John North," 149, 124, 130-32, 144-46. Also, Add. MSS, 32548, f. 61r; Add. MSS, 32546, fols. 174-75. "Works of Roger North," XIX.

⁴⁶ Millard, "Life of Dr. John North," 146; B.M. Add. MSS, 32546, f. 174.

⁴⁷ M.M. Add. MSS, 32548, fols. 66ff.

and were not necessary in themselves. Thus was banished the distinction between absolutes and relatives. Space could be created and destroyed by an infinite power. Either, argued North, space and time were limited or God's power was limited and the latter was heresy.⁴⁸

North's intentions in his attack upon the Newtonian system were quite clear. He had set out to show the falsity of the metaphysical system upon which the heresy of Samuel Clarke was constructed. In one of his later manuscripts, which appears to date from about 1722, North denied there were degrees in existence between absolutes and relatives, "between something and nothing." To have admitted such an hypothesis would have been to admit a limitation to God's power, which was impossible. All this rested fundamentally upon the necessity of revelation. North's entire purpose had been to defend Christian revelation and belief in miracles:

. . . wch shew [Almighty power] indubitably, and also what may be his will with respect to us, how to be worshiped, . . . by repentance in Christ, and How farr wee may pretend to know his Essence wch can be no otherwise then hath bin Revealed to us in the Ineffable Trinnity: with other scriptural articles of the Christian Religion. All wch have bin so well deduced from the knowne Miracles Recorded for demonstration beyond contradiction. . . .⁴⁹

North's position was that of the High-Church hostility to Newtonianism, a philosophy which was seen as a threat to revealed religion. The Doctrine of the Trinity became a crucial issue. Only by accepting the revelations, North argued, could those whom he suspected were "sceptical Atheists" be "cured of their perversity."⁵⁰ In this category were undoubtedly the Newtonians whose metaphysical distinctions had led them to anti-Trinitarian heresy.

Faction in Philosophy

The Newtonian natural philosophy became, explicitly, part of the political debate in post-Revolutionary England. Whether or not Newtonian concepts of universal gravitation, attraction, or of absolutes and relatives were acceptable seemed to turn partly upon the religious or theological attitudes which formed part of the system of coordinates distinguishing city from country, Low Church from High, and Whig from Tory. To some it followed that Newtonianism might be viewed as a sect or even a party in philosophy. This was certainly the opinion of Ephraim Chambers.⁵¹ But his argument on behalf of

⁴⁸ B.M. Add. MSS, 32548, No. 5, f. 144r; and, Add. MSS, 32546, f. 174r.

⁴⁹ B.M. Add. MSS, 32548, f. 149r; also, fols. 140r, 146r. ⁵⁰ *Ibid.*, f. 149r.

⁵¹ Ephraim Chambers, F.R.S., *Cyclopaedia: Or, an Universal Dictionary of Arts and Science; Containing An Explication of the Terms, and an Account of the Things Signified Thereby, In the Several Arts, Both Liberal and the Several Sciences, Human and Divine: The Figures Kinds, Properties, Productions, Preparations, and*

specific scientific propositions might be characterized as justification after the fact of the victory of Newtonianism in England, a particularly Whiggish notion of progress in philosophy in which one view of the natural world was replaced by another which could explain the phenomena more accurately—a sense not unlike the *ex post facto* justification of the Revolution on the part of some Whigs. But this approach was largely, if not exclusively, based on a subjective judgment. The reply of those who might be described as holding Tory sensibilities was not entirely to defend the old paradigm, whether Cartesian or Leibnizian, but was rather to deny the validity of sects in philosophy or, in political terms, to refuse to accept the legitimate existence of faction. Thus, the elusive distinction between a Whig and a Tory in the early eighteenth century may have had more subtle roots in the defense of party on the one hand, by Walpole for example, and on the other, the attack on political division as merely factions of self-interested men, an opinion expressed often enough by Bolingbroke.⁵² In many respects, the Tory attack on party as factionalism which clearly existed by the 1690s is only superficially an attack on the Whigs. This kind of criticism reflects a far more fundamental distrust of political difference and self-interest expressed in Swift's satire on Lilliputian low-heels and high-heels.⁵³

A similar judgment can be found in the criticism directed against Newtonianism as well as against all faction in philosophy. Like Samuel Clarke's theological conjectures, Roger North's attitudes toward natural philosophy and his view of political and religious matters were also "thro-stitched." This is revealed in the many volumes of his crabbed writings which have survived. For North the Newtonian philosophy represented far more than another attempt to explain the forces of the natural world: it was, above all, representative of a world in which the forces of British society were dramatically shifting, when the discussions of philosophers were not confined to the cloisters or to the colleges but were extended, literally, to a more common run of men like the coffee-house virtuosi and the traders of the metropolis.

For the Newtonians, their philosophy was a clear alternative to the systems of Descartes and Leibniz. This is reflected not only in the debates with Leibniz but also in Ephraim Chambers' view of the

Uses of Things Natural and Artificial: The Rise, Progress, and State of Things Ecclesiastical, Civil, Military and Commercial. . . , The Fourth edition (London, 1741), s.v. "Newtonian Philosophy," "Sect."

⁵² Isaac Kramnick, *Bolingbroke and his Circle: the Politics of Nostalgia in the Age of Walpole* (Cambridge, Mass., 1968), 158-63.

⁵³ Phillip Harth, "The Problem of Political Allegory in *Gulliver's Travels*," *Modern Philology*, 73, Supplement (May, 1976), 46-47. For a general discussion of the issue, see Pat Rogers, "Swift and Bolingbroke on Faction," *Journal of British Studies*, 9 (May, 1970), 71-101.

various sects in philosophy. Roger North, however, seems to have regarded much of the attack on Descartes as the result of the introduction of faction, “whereby if one party is in ye right, another is all wrong.” Hence, words like attraction and inertia were part of a polemic.⁵⁴ The existence of such factions was deplored at great length by North. From his country-Tory, High-Church perspective, he saw the result to be detrimental to the investigation of nature much as he had been disgusted by the growth of political faction in the seventeenth century which he felt had destroyed the political basis of the Stuart monarchy.⁵⁵ As North saw things, the Newtonians were to blame for the growth of sects in philosophy. Newton and his followers had deliberately set themselves up against Descartes and Leibniz, but the invective was contagious and North was certainly not immune. So far as he was concerned, the battle between the sects could not end in truth; any follower of Descartes, whatever the merits of that particular philosopher, was “Gone for a Cartesian, and made appear as wretched & Ignorant a sectator as ye other was a vain Inconsiderate philosofer.”⁵⁶

North, nevertheless, desired to examine the Newtonian philosophy dispassionately. He was willing to admit the achievement of Newton in mathematics, but beyond that the problem lay in Newton’s physical system of gravity and attractions. North’s criticism of Newton, while ostensibly philosophical, went much farther. His objections to Newton, and especially to his followers whom he described as “all our second, third, & fourth hand philosophers,” were a reflection of his social attitudes as well. In his mind, sects in philosophy, faction, and rabble were merely differing shades of disorder and republicanism.⁵⁷ This association between republicanism and the new philosophy, and to some extent deism, may partially explain his attitude toward Newton and his disciples.⁵⁸ While he recognized that Descartes could be legitimately criticized, especially on the types of matter in the universe, North regarded much of the complaint against Descartes to be the work of “proletarian scribblers” led as “a parcel of Nose ledd Ignoramuses” by a new authority: the new standard in natural philosophy was Newton’s *Principia*.⁵⁹ Thus, North’s objections rested simultaneously at two levels, a philosophical as well as a social criticism. Success and the kind of

⁵⁴ B.M. Add. MSS, 32548, No. 2, f. 63.

⁵⁵ Roger North, *Examen: Or, An Enquiry into the Credit and Veracity of A Pretended Complete History* (London, 1740), 303, 319-35.

⁵⁶ B.M. Add. MSS, 32548, No. 2, f. 63r.

⁵⁷ B.M. Add. MSS, 32548, No. 2, f. 42; and, North, *Lives of the Norths*, 2, 320.

⁵⁸ For a discussion of this phenomenon, see J.G.A. Pocock, *The Machiavellian Moment: Florentine Political Thought and the Atlantic Republican Tradition* (Princeton, 1975), 476-77.

⁵⁹ B.M. Add. MSS, 32548, No. 2, f. 39. ⁶⁰ North, *Lives of the Norths*, 2, 320-21.

popularization we have seen were sins of equal magnitude when based upon a mistaken philosophy.

Although ostensibly the opinion of Dr. John North, we can take as Roger's sentiment the description of the populace of a nation as a "Brute beast indeed."⁶⁰ The rabble meant only disorder. Disorder is what Roger North thought had become of natural philosophy, and Newton was largely to blame. The attempt to establish the properties of the forces of nature by way of experiment or demonstration was, in North's opinion, a "pompous Pretence." He thought that experiment could never reveal the elementary differences between the particles of compound bodies.⁶¹ It would be unfortunate if we dismissed this argument out of hand as the complaint of a disappointed Cartesian. What, I think, North was expressing in his manuscripts was a feeling that there was a relationship between experimentalism, the rage for scientific demonstration in which so many of the Newtonians were engaged, and a world that was enamored of what the eighteenth century regarded as sensibles, those recognizable effects of nature. One must understand that for North this was a view of the world which he instinctively distrusted. It was, after all, in the coffee houses of the late seventeenth and early eighteenth centuries, places which he thought were seedbeds of sedition and atheism, where scientific demonstration became the vogue.⁶² All of this smacked of the rabble.

One of the greatest objections North had against Newton was the use of a vocabulary which lent itself to the accusation of being occult. It was Newton who had overturned the motto of the Royal Society, *nullis in verba*, by reintroducing into natural philosophy words like "attraction" which few could understand.⁶³ In North's opinion, many of the difficulties of Newtonian natural philosophy were the result of abstract words used substantively. "Motion" was a word which described a phenomenon but "attraction" was a descriptive word which had come to signify a cause. North's perception of the problem of the Newtonian vocabulary was certainly not distorted—Leibniz simultaneously took Clarke to task on the same point, and as we know attraction had become the doctrine of most of the Newtonian commentators. William Derham, in the notes to his Boyle lectures of 1711, continually mentioned "the Newtonian Attraction."⁶⁴ However, despite the popularity of such ideas, or perhaps because of it, in the philosophical digression of his life of Dr. John North, Roger also

⁶¹ B.M. Add. MSS, 32548, No. 2, fols. 54-55.

⁶² For his comments on coffee-houses, see the *Examen*, 320-21, 370, 597.

⁶³ B.M. Add. MSS, 32548, No. 2, fols. 41-42.

⁶⁴ W. Derham, *Physico-Theology: Or, A Demonstration of the Being and Attributes of God, from His Works of Creation*, 2nd ed. (London, 1714), 31 n. 1; 40 n. 1; 52 n. 5.

expressed doubts about the nature of attractions which he found much less satisfactory than the Cartesian notion of an aether:

If any one sees a vessell in the Thames thrown up by a still tide towards London, would he not say it is conveyed by the stream rather than attracted by that monstrous City. And the like of the planets, swifter or slower as the state of the fluid in their severall places require.⁶⁵

It was when the Newtonians began to talk about gravitation and attraction as synonymous that North wondered whether this was merely a device to “catch the common people by their familiarity of acquaintance.”⁶⁶ It was, in North’s opinion, the great reliance upon similar effects described in like terms which confound understanding.

North had a long list of Newtonian terms like attraction, gravitation, ray, and *vis inertia* which he thought merely distorted natural philosophy. His opinion is founded not so much in the failure of the precision of the Newtonian language but seems to lie upon a concern with philosophy as a matter of common understanding and popular discourse. When North described *vis inertia* as a “meer vulgar Idea,” he clearly associated the popularization of natural philosophy with his feelings about the rabble.⁶⁷ It was, in terms like gravitation, which North regarded as a popular notion, that he perceived Newton’s philosophy to stand or fall.⁶⁸ Gravity was defined as force, and this necessarily coincided with the concept of action at a distance, between bodies across a vacuum, the void to which the virtuosi had become addicted since the *Principia* and the *Opticks*. This was only to re-admit into philosophy “ye peripatetick Inanity of words,” to reintroduce occult qualities under the influence of which natural philosophers followed “as harmless sheep, one after another in a track.”⁶⁹ To individuals like Roger North it may have seemed that the seventeenth-century warnings against mechanical philosophy had come to fruition in the Newtonian philosophy. To the High Church, who looked at Clarke and Whiston with disgust, it was the Newtonian philosophy which should be held responsible. The theological lines were clearly drawn. North did not think the results so harmless.

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⁶⁵ Millard, “Life of Dr. John North,” 95. Also, B.M. Add. MSS, 32548, No. 2, fols. 51-52.

⁶⁶ B.M. Add. MSS, 32548, No. 2, f. 52r. ⁶⁷ B.M. Add. MSS, 32548, No. 2, f. 53r.

⁶⁸ B.M. Add. MSS, 32548, No. 2, f. 43r, and f. 65.

⁶⁹ B.M. Add. MSS, 32548, No. 2, f. 45r; Add. MSS, 32545, f. 210, “Works of Roger North,” XVIII.