NEWTON'S CONCEPT OF GOD AS CREATOR AND LAWGIVER: A SYSTEMATIC ANALYSIS

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The Nature of God as Creator

In traditional Christian fashion, Isaac Newton considered God to be incorporeal, living, intelligent, infinite, omnipotent, omnipresent, and supreme.[1] Human discourse about God, Newton recognized, is anthropomorphic and metaphorical.[2] Five aspects of God's nature as creator are found in Newton's writings: 1) God is creator, lawgiver, and preserver; 2) God is free; 3) space is an attribute of God; 4) gravitation is God's activity; and 5) God's miracles are natural.

Creator, Lawgiver, and Preserver

The notions of God as creator, lawgiver, and preserver are mutually interdependent for the continuation of the world as it is presently known and experienced. As creator, God made in void space a finite quality of "solid, massy, hard, impenetrable, movable" corpuscles (particles or atoms) which in themselves were motionless. The atoms were not formed in a plenum and are not infinite in quantity or number since otherwise they would be coterminous with God[3]. Nowhere does Newton state that space was created because as an attribute of God space is necessarily uncreated, a topic considered below.

As lawgiver and "Intelligent Agent," God established in the first creation three principles which govern the motion of atoms:

1) inertia, a passive principle inherent to matter in itself;
2) active principles, such as gravity, which put bodies in motion;
and 3) conserving and preserving motions, which sutain the motion of bodies and prevent the world from stagnating.[4] As lawgiver, and by the second principle, God set the atoms into motion by active forces, such as gravity. At least some of these active forces can be formulated as "mathematical laws," which are phenomenal descriptions of how the forces affect matter and which may not explain the essence or causes of the forces. For example, gravity helps explain why the heavenly bodies move as they do, but it does not explain how they got where they are.[5] The active forces or laws ordained by the lawgiver are both attractive forces and repulsive forces. If matter (such as the stars) was not separated by distances and if there were no repulsive forces, gravity would eventually pull all matter together into a huge sphere. These attractive and repulsive forces are found to be operative among both

small particles (for example, chemical actions) and heavenly bodies. The nature of the forces must be immaterial because: 1) action at a distance (that is, with nothing present) is impossible, and 2) no material thing has been observed to be the cause. These forces are certainly God-caused and not free from God. Because they are immaterial, they are for Newton in some sense divine.[6]

Although God presently "rests" from his creation, he still continues to preserve the motions of matter by the third principle (that is, conserving and preserving motions). If God did not continuously replenish the motions of matter, the world would soon run down: "by reason of the Tenacity of Fluids, and the Attrition of their Parts, and the Weakness of Elasticity in Solids, Motion is much more apt to be lost than got, and is always upon the Decay."[7] A fact of nature provable by mechanics is that the world would eventually cease to move unless a divine power conserves it. The dependence of the world on God shows his wisdom and providence. The dependence of motion on God shows that the world in its relation to God is perfect, because if the world needed no preserver (that is, if it were self-sufficient), there would be no need for God.[8]

God and Freedom

Since space is infinite and absolute and since material particles are variable in size, God could have created this world or other worlds in other places by different laws. Because time is eternal and absolute, he could have made this world in another time. Yet, despite the contradiction, due to the absoluteness of space and time, this world created in another space and time would still be the same world as it is now. Moreover, it is possible that other world systems have been created and wither have passed away or are still existing. For these reasons, the Creator must be free. The only "sufficient reason" that explains the present world vis-a-vis another world is the free will and free choice of God. To specify any other sufficient reason, that is, to say what is wise for God to do, is to beg the question. Either God is absolutely free and undetermined (which is proved by the above arguments from mechanics) or he is not free at all.[9] The "diversity of natural things" can be explained only by "the ideas and will of a Being necessarily existing."[10]

God and Space

Perhaps the two most mebulous notions in all Newton's writings are his affirmations of space as the "sensorium" of God and as a "property" (that is, attribute) of God. First, Newton metaphorically compares God's immediate perception of things in space to perception in a "Sensory" (Query 28) or "Sensorium" (Query 31).[11] Writing Leibniz in Newton's behalf, Samuel Clarke persistently insists that these statements be understood as metaphors.[12] The question of what it means for God to be in space and to perceive things there, the

real issue behind the sensorium debate, is addressed by Newton and Clarke in their discussions of space as God's "property."

Second, in Query 28 Newton explicitly places God *in* space and perhaps implicitly identifies God with space. Two factors primarily suggest this identification: 1) God perceives things by space, and 2) gravitation is an action of God that is necessary to avoid the impossibility of matter acting as a distance.[13] Yet, in the General Scholium, Newton denies that God is space: "he is not duration and space, but he endures and is present."[14] In Query 31 Newton states that the parts of the world are not parts of God, that is, the world is not God's body and God is not the world's soul.[15]

Clarke argues that, if space is not an attribute of God, void, and the container of matter, then matter would be eternal and self-sufficient. Moreover, creation would be a fiction. God is "in space," and without God's existence, there would be no space. "God does not exist in space, and in time; but his existence causes space and time."[16] To say that God is "in space" is a human "vulgar" expression for God's omnipresence, and without space God's "ubiguity (or omnipresence) would be taken away."[17]

In conclusion, the following reasons make it seem that for Newton space is God but *not simply* God. Space for Newton is void of matter but not void of God and perhaps other immaterialities. God is an actual immaterial presence in space and as such is the explanation for gravitation, the topic of the next section. Because God is actually in space, he is able to perceive all things, both small particles and celestial bodies, by his immediate presence to them because everything, no matter how small or large, is surrounded by space. For Newton, space must not be identified with God because God is not the soul of matter and God's nature involves exceedingly more than space. A factor noted earlier is that space is nowhere described by Newbon as created, and correctly so since space is one of God's attributes. However, space is "caused" by God, that is, by the fact of his existence, and without space there would be no omnipresence and certainly therefore no God. For Newton, space *is* God in the twofold sense that space is a divine attribute and that without space there would be no God. Yet God exceeds space, so God is *not simply* space.

God and Gravity

As with God and space, Newton's statements on gravity's relation to God are difficult to decipher. In the General Scholium he denies that he has "assigned the cause of this power," and in two letters to Richard Bentley he refuses to "pretend to know" and to speculate on the cause.[18] Similar statements are made by Clarke.[19] Newton's dominant concern is to deny that gravity is inherent to matter since such an affirmation would entail action at a distance--an impossibility. Gravity is one

way that God acts and sustains the motions of the world, and gravity is caused by God.[20] Because nothing can act at a distance, gravity must be present at the object it attracts,[21] and because no material thing is present as the cause of gravity, some immaterial thing must cause it.[22] Whether gravity *is* God is ambiguous in Newton's writings. However, gravity is caused by God, is the activity of God, and is immaterial.

God and Miracles

As explained by Clarke, miracles are unusual occurrences that are not usually inexplainable by natural causes. The distinction between supernatural and natural is nothing to God, who can equally do either. Gravity, the circular motion of the planets, and God's acts that sustain worldly motions are not miracles because: 1) they are usual, normal actions resulting from laws of nature established by God; and 2) they do not involve action at a distance, which is an impossibility.[23]

The Nature of Creation

For Newton, created things and motions are finite, contingent, and perfectly ordered. First, although space is infinite, matter is finite because other wise matter acted on by gravity would eventually form one huge sphere in space. God has separated the stars by huge distances and continuously replenishes the forces and motions of the universe to prevent just such an occurrence. If matter and space were both infinite, which for Newton they are not, then matter would be coterminous with God and atheism would be possible.[24]

Second, the world is contingent. Because he is free, God could have created the world in another time and place, and different laws could have been given. Moreover, the created particles could have been of sizes different from the present atoms. The result would have been a different world, but a world which would also have been designed and perfect. The contingency of the present world is also evident from the motions of bodies, for these motions would eventually cease if God did not replenish them.[25]

Finally, the universe is ordered, designed, and perfect. However, the order and perfection are prescribed by God's wisdom, not human reason. The arbitrariness of this world vis-a-vis other possible worlds indicates that this world was designed for God's ends, for what the "Author" thought convenient. The present frame of the world could eventually give way to disorder followed by a future renovation--all as parts of God's design. The order, beauty, and regularity of animal bodies and celestial motions can only be explained by an45 intelligent and powerful Being, not by mechanical laws. Because for Newton matter in itself is passive, design does not arise from the "nature" of things but from the motions or properties God bestowed on matter.[26]

Natural Theology

From the order and nature of created things, the existence of God follows. God is necessary, not only as creator of matter, but as preserver and sustainer of the motions and forces of the universe. According to Newton, an intelligent agent skilled in mechanics and geometry is necessary to explain the symmetry and equilibrium of the solar system, the differences between opaque and lucid bodies, the light and heat from the sun, the fact of one sun instead of two, the inclination of the earth's axis in just the manner necessary for human habitation and the seasons, and the nature of human and animal bodies. God is known by the "contrivances of things, and final causes."[27] The "main business" of natural philosophy (and one of Newton's hopes when he wrote the *Principia*) is to argue from phenomena and effects to causes and the First Cause.[28]

For Newton, the existence of God was necessitated by the unexplainable. For example, Newton was unable to explain the cause of gravity by mechanical laws, and he concluded that the cause was therefore immaterial or divine.[29] God's reality was certain because otherwise no explanation could be given for the cause of gravity, the motion of the planets, and the conserving forces preventing cosmic decay and chaos.[30] Leibniz's theory that the created universe is self-sufficient was unacceptable because the theory left no room for God and made atheism tenable.[31]

Providence

Newton affirmed both general and particular providence. As creator, God made matter and ordained the laws governing it; and as preserver, God continues to be involved in the universe through active forces such as gravity and through conserving forces which prevent chaos and decay.[32] God's continued involvment in the universe, or particular providence, is not a new or unusual occurrence and therefore is not miraculous. From the beginning, God has been constantly active in the cosmos.[33]

For Newton, God's existence, general providence (or natural law), and particular providence were established on empirical grounds. Rather than permit the possibility of the atheism or deism he was to be entailed by Leibniz's self-sufficient universe,[34] Newton inconsistently held to the necessity of both general and particular providence.

Conclusion

Newton attempted to hold consistently to his scientific method in both physics and theology. From the phenomena of the world as he experienced it, he saw no explanation for the existence of matter and the continued motions of matter other than the actions of a Creator who was also Lawgiver and Preserver.

Newton either failed to see or was unable to resolve the inconsistency implied by affirming both general and particular providence. In this regard, he was not

different from most English scientists and philosophers of the day. However, on the Continent, Leibniz saw Newton's inconsistency and argued that only general providence is possible. For Leibniz, either the universe is totally self-sufficient because it was created by an all-knowing and skillful Creator (and hence particular providence is false), or the Creator is not all-wise and skillful (and hence particular providence is possible). The popularity of deism among English philosophers and theologians of susequent decades indicates the Leibniz's argument was more persuasive.

In keeping with his era, Newton also held to the rationality of the world from God's perspective. Because God is rational, created matter and its laws are intelligible and scientific inquiry is well-founded. The rationality of the Creator and the intellibility of nature led Newton to the belief that the unexplainable and seemingly irrational are actually rational--from God's perspective. God may have reasons at present unknown and perhaps eternally incomprehensible to human persons.

In his explanation of gravity as an immaterial and probably divine force and in his notion that space is an attribute of God, Newton was theologically progressive and perhaps for this reason intentionally ambiguous and nebulous. In these non-traditional concepts, Newton was still being consistent to his scientific method. Empirical facts indicated both that God must exist and that gravity and space are immaterial or divine. Newton argued that these new conceptions of deity were necessitated by the *facts* of nature and by the inconceivability of a natural explanation for these facts.

For Newton, the existence of God followed from the order and nature of created things and from the necessity to explain the unexplainable. Unable to explain the cause of gravity, the motions of the planets, the nature of the human nervous system, and the sustaining forces of the universe, Newton attributed them to God. Newton evidently did not realize that if God is necessary only to explain the unknown, then to the extent that science explains more and more of reality, God becomes less and less essential.

Newton the natural philosopher always sought to be true to his scientific method. His views regarding God's existence, providence, gravity, space, and the intelligibility of nature were all based on his empirical method. In this attempt at scientific consistency, Newton was superior to the other philosophers and theologians of his era.

NOTES

[1]Isaac Newton, *Sir Isaac Newton's Mathematical Principles of Natural Philosophy and His System of the World*, ed, Florian Cajori, trans. Andrew Motte, 2 vols. (Berkeley: University of California Press, 1962), 2:544-45 (hereafter referred to as *Principia*); and Isaac Newton, *Opticks*, 4th [1730] ed. (New York: Dover Publications, 1979), (Quaery 28), p. 370.

[2]*Principia*, 2:543-46.

[3]*Opticks* (Query 31), p. 400; and H. G. Alexander, ed., *The Leibniz-Clarke Corresponsence* (Manchester: Manchester University Press, 1956), C.IV.5-6, 21-23; C.V.73-75.

[4]*Opticks* (Query 31), pp. 377-400, 402.

[5]*Principia*, 2:543.

[6]Ibid.; C.II.1, 9; *Opticks* (Query 31), p. 397; and Newton to Bentley, 25 February 1692/3, in *Newton's Philosophy of Nature: Selections from His Writings*, ed. H. S. Thayer (New York: Hafner Press, 1953), pp. 53-57.

[7]*Opticks* (Query 31), p. 398.

[8]Newton to Bentley, 25 February 1692/3, pp. 53-57; C.I.4; C.II.11; C.III.13-14; C.IV.30; and C.V.99-102.

[9]*Opticks* (Query 31), pp. 402, 404-6; C.II.1; C.III.2; C.IV.1,3-4, 18; and C.V.1-15, 124-30.

[10]*Principia*, 2:546.

[11]*Opticks* (Query 28), p. 370, and (Query 31), p. 403.

[12]C.I.3; C.II.3; C.III.10; C.IV.24-28; and C.V.79-82.

[13]*Opticks* (Query 28), p. 370.

[14]*Principia*, 2:545.

[15]*Opticks* (Query 31), p. 403.

[16]C.V. 36-48.

[17]Ibid.; and C.IV.10.

[18]*Principia*, 2:246-47; Newton to Bentley, 17 January 1692/3, p. 53; and Newton to Bentley, 25 February 1692/3, p. 54.

[19]C.V.110-16.

[20]Newton to Bentley, 10 December 1692, pp. 46-50; and *Opticks* (Query 28), p. 370, and (Query 31), p. 399.

[21]C.II.4; and C.IV.45.

[22]Newton to Bentley, 25 February 1692/3, p. 54; and *Opticks* (Query 28), pp. 369-70.

[23]C.II.12; C.III.17; C.IV.45; and C.V.107-23.

[24]Newton to Bentley, 10 December 1692, pp. 46-50; Newton to Bentley, 17 January 1692/3, pp. 50-53; *Principia*, 2:544; C.IV.5-6, 21-23; and C.V.73-79.

[25]*Opticks* (Query 31), pp. 398, 402, 404-6; C.II.1; C.III.2; C.IV.1, 3-4, 18; and C.V.1-25, 124-30.

[26]Newton to Bentley, 10 December 1692, pp. 46-50; *Principia*, 2:544; C.II.8; C.III.16; C.V.21-25, 124-30; and *Opticks* (Query 31), pp. 400-403.

[27]*Principia*, 2:546.

[28]Ibid.; Newton to Bentley, 10 December 1692, pp. 46-50; Newton to Bentley, 25 February 1692/3, pp. 53-57; *Opticks* (Query 28), pp. 369-70, (Query 31), pp. 400-403, 406; and C.I.4.

[29]Newton to Bentley, 10 December 1692, pp. 46-50; Newton to Bentley, 25 February 1692/3 p. 54; *Opticks* (Query 28), pp. 369-70, and (Query 31), p. 399; C.I.4; and C.IV.45.

[30]Newton to Bentley, 25 February 1692/3, pp. 53-57; *Opticks* (Query 31), pp. 397-400; C.I.4; C.II.8, 11; C.III.13-14; C.IV.30; and C.V.99-102.

[31]C.I.1-4; L.II.9; C.II.8-9; and C.III.13-14.

[32]Newton to Bentley, 25 February 1692/3, pp. 53-57; *Opticks* (Query 31), pp. 397-400; C.I.4; C.II.8, 11; C.III.13-14; C.IV.30; and C.V.99-102.

[33]C.III.1-17; and C.V.107-23.

[34]C.I.1-4; C.II.8; and C.III.13-14. See L.II.9.