

The Thomistic Theory of the Motion Principle

In St. Thomas Aquinas' *Summa Contra Gentiles* chapter 13, after having previously argued from chapters 10 to 12 that it is possible to demonstrate the existence of God, he proposes some arguments by which he intends to prove the existence of God. First, he presents arguments for God's existence that, according to Aquinas, Aristotle had made. The first argument here is from motion for which Aquinas states: "In this proof two propositions must be proved, namely, that *omne motum movetur ab alio*; and that one cannot regress to infinity in movers and things moved."¹ This first proposition, "*omne motum movetur ab alio*" or "*omne quod movetur ab alio movetur*" as stated by Aquinas in the proof that he has referred to as Aristotle's, is the motion principle that is the subject of this paper. This motion principle serves as Aquinas' major premise in his first way of demonstrating the existence of a First Unmoved Mover, God, in his *Summa Theologiae* and was also especially investigated by him in his *Commentary on Aristotle's Physics* and in his *Commentary on Aristotle's Metaphysics*. Aquinas attempts to prove this motion principle with Aristotelian arguments in the text of the *Summa Contra Gentiles* chapter 13 that has been referred to previously. For this subject of the motion principle there are two things to be investigated. The first to be investigated is the correct interpretation of this motion principle and, since my conclusion is that modern objections to this motion principle are due to an erroneous interpretation of this motion principle, also consequently will be investigated modern objections to this motion principle. Finally, to be investigated are medieval objections to this motion principle as especially represented in the figure of John Duns Scotus.

In investigating the correct interpretation of the motion principle in Aquinas, the first thing to be done is to figure out whether "*omne quod movetur ab alio movetur*" is to be interpreted intransitively as "every thing in motion is moved by another" or "whatever is in motion is moved by another" on the one hand or passively as "every thing moved is moved by another" or "whatever is being moved is being moved by another" on the other hand. This subtle

¹ St. Thomas Aquinas. *Summa Contra Gentiles I:13,4*. translated by Anton Pegis. Garden City, NY: Hanover House, 1955. Latin text is from Wippel, John. *Thomistic Texts on God*. Course Packet.

distinction is very important because the first implies that for every thing in motion there must be a continual, even conjoined, mover where as the second passive interpretation only implies that for every thing moved there must be at least an initial mover but not necessarily a continually conjoined mover. The intransitive translation into English is given by the standard Dominican English translation of the *Summa Theologiae*. The translation here is “whatever is in motion is put in motion by another”.² On the other hand, the same text is translated passively in the selected texts *Treatise on God* by James F. Anderson. The translation here is “whatever is being moved is being moved by another”.³ Further, modern objections to the motion principle, insofar as it pertains to locomotion, have been based on the intransitive interpretation which as stated previously requires that every thing in motion has a conjoined continual mover. Edmund Whittaker, an eminent mathematician, states about Aquinas’ five ways to demonstrating the existence of God that, “...the first proof, or the proof from motion, is open to the objection, first brought against it by Duns Scotus and William of Ockham, that the principle *omne quod movetur ab alio movetur*, on which the whole argument depends, is irreconcilable with sound dynamical science, and is therefore false.”⁴ Historically, on the contrary Duns Scotus, as will be seen later, objected to “*omne quod movetur ab alio movetur*” on natural philosophical and metaphysical grounds and not because of that branch of mechanics called dynamics in mathematical physics. Similarly, William of Ockham, objected to “*omne quod movetur ab alio movetur*” on terminalistic or nominalistic grounds and not because of that branch of mechanics called dynamics in mathematical physics.⁵ More fundamentally though this conclusion presupposes the intransitive interpretation of “*omne quod movetur ab alio movetur*” which implies, as previously stated, that for every thing in motion there must be a conjoined continual mover.

² St. Thomas Aquinas. *Summa Theologiae I:2,3*. translated by the English Dominican Province. New York, NY: Benziger Bros., 1948.

³ St. Thomas Aquinas. *Summa Theologiae I:2,3*. from St. Thomas Aquinas. *Treatise on God*. translated by James F. Anderson. Eugene, OR: Wipf and Stock Publishers, 2001, pg.10.

⁴ Weisheipl, James. *Nature and Motion in the Middle Ages*. Washington, D.C.: Catholic University of America Press, 1985, pgs. 96-97.

⁵ See Maurer, Armand. *The Philosophy of William of Ockham: In the Light of its Principles*. Toronto, Ontario, Canada: PIMS, 1999, pgs. 435-437.

This is evident by the interpretation of Aristotle's motion principle by modern historians of natural science and by the translation from Greek of this motion principle as stated in Aristotle's *Physics*. Anneliese Maier, a historian of natural science, presents her interpretation, when Weisheipl, in reference to this intransitive interpretation of the motion principle and certain other associated Averroistic physical conclusions, states:

"These views of modern historians of Aristotelian physics are fully expressed by Anneliese Maier in her explanation of the principle under discussion. For Miss Maier the principle, which she phrases as *Omne quod movetur ab aliquo movetur*, means that 'every movement requires a particular mover bound to it and generating it directly,'... . Thus, according to Maier, the scholastics not only failed to anticipate the principle of inertia but were prevented from doing so because they adhered to the erroneous principle *Omne quod movetur ab alio movetur*." ⁶

Eduard J. Dijksterhuis, another historian of natural science gives the same interpretation:

"Aristotelian physics is based on the axiom that every motion (*motus*) presupposes a mover (motor): *omne quod movetur ab alio movetur*. This motor must either be present in the moving body or be in direct contact with it... a motor must always be a motor *conjunctus*."⁷

Consequently, Weisheipl rightly concludes that,

"Modern historians are surprisingly at one in their interpretation and evaluation of Aristotelian physics. Following an earlier tradition, historians like Pierre Duhem, Sir David Ross, Father Peter Hoenen, Alistair C. Crombie, Marshall Clagett, Eduard J. Dijksterhuis, and Annalese Maier interpret the Aristotelian principle to mean that everything that is moving must be moved by something here and now conjoined to the moving body."⁸

Even in the Oxford translation of Aristotle's *Physics*, made by Hardie and Gaye, the motion principle in Greek

"*Apan to; kinonvmenon nJpov tino~ ajnavgkh kineisqai*" is translated intransitively as "Everything that is in motion must be moved by something."⁹ The problem with the intransitive translation is that it is not a literal translation of the Greek or Latin. As Weisheipl states, the interpretation of the motion principle as stating

"... that everything that is now in motion (*omne in motu*) is being moved here and now by something else... is contrary to the grammar of the text... St. Thomas never said, *Omne movens ab alio movetur*; nor did Aristotle. The

⁶ Weisheipl, James. *Nature and Motion in the Middle Ages*, pg. 84.

⁷ Weisheipl, James. *Nature and Motion in the Middle Ages*, pg. 81.

⁸ Weisheipl, James. *Nature and Motion in the Middle Ages*, pg. 80.

⁹ Aristotle. *Physics 241b34*. edited by Jonathan Barnes. *The Complete Works of Aristotle: The Revised Oxford Translation*. Princeton, NJ: Princeton University Press, 1995. All further Aristotelian texts will be from this translation unless otherwise notified. Also see Aristotle. *Aristotle's Physics 241b34*. translated by Hippocrates G. Apostle. Grinnell, Iowa: The Peripatetic Press, 1980. where the text is also translated intransitively as "Every thing in motion is necessarily being moved by some thing."

the second and thereby the truth of the proposition itself.”¹³ Precisely, because this is the correct interpretation of the motion principle, it neither requires a conjoined continual mover for that which is in motion, as it has often been interpreted, nor once it is interpreted in a strictly passive sense is it a self-evident proposition. In reality this intransitive interpretation of the motion principle and its implications in a conjoined continual mover to every thing moved is not Thomistic, and in his interpretation not Aristotelian, but started with Avicenna and continued most eminently with Averroes.

Avicenna in his *Sufficiencia* and Algazel's paraphrase work, which were translated in the twelfth century, expounded the theory that held the form of a body to be the conjoined mover of the body it informs moving it as its efficient cause. This theory proceeded from Avicenna's reification of form and matter with form as an active thing(*res*) and matter as a passive thing(*res*) instead of Aristotle's and Thomas' theory of form and matter respectively as being the natural principles of actuality and potentiality for things. In Aquinas' theory matter and form are not things themselves but the principles of things intrinsic to their essence.¹⁴ As stated by Weisheipl, “Avicenna was one of the first to conceive a natural form as a *motor coniunctus* to explain the continuation of motion in a body once begotten.”¹⁵ Averroes also had a theory of the form being the conjoined mover of their informed bodies in “natural” locomotion, such as the “free fall” of bodies in locomotion once any obstacles are removed. Instead, though of a theory of the substantial form of such a body being the *per se* mover of inanimate beings, as opposed to Avicenna, Averroes held that such a substantial form is the *per accidens* mover of inanimate beings for he asserted that it is proper only to animate beings to have substantial forms that are *per se* movers. Consequently, in Averroes' commentary on Book IV of the Physics he asserts that in the case of such “natural”

¹³ John F. Wippel. *The Metaphysical Thought of Thomas Aquinas*, pg. 414. The parentheses are mine. Note that the true disjunction stated here by Van Steenberghe is exclusive so that it is impossible for both disjuncts to be true or for there to be an intermediary between these disjuncts as applied to a thing moved.

¹⁴ See St. Thomas Aquinas. *Summa Theologiae I:110,2*. Weisheipl rightly states that this theory of Avicenna was due to his neo-Platonic theory of matter and form. Also Avicenna's view is definitely related to his denial of natural agents' efficient causality of substantial change replaced by his Giver of forms. See Weisheipl, James. *Nature and Motion in the Middle Ages*, pg. 113-114.

¹⁵ Weisheipl, James. *Nature and Motion in the Middle Ages*, pg. 114.

locomotion, as previously stated, it is the resistant medium that is the *per se* mover. Since Aristotle did assert the necessity of a resistant medium for “violent” locomotion, which includes projectile locomotion, Averroes concluded that all locomotion whatsoever, “natural” and “violent”, requires a resistant medium such that any locomotion in a void is impossible.¹⁶ Weisheipl concludes: “...that the influence of Avicenna and Averroes was so great in the Middle Ages that the specter of the *motor coniunctus* remained in the mind of many scholastic writers.”¹⁷ The common intransitive interpretation of the motion principle implies a conjoined continual mover for every thing moved and leads to Averroes’ theory that all locomotion requires a resistant medium with the velocity of a body being inversely proportional to the resistance of the medium of locomotion making any locomotion through a void impossible.¹⁸ Finally, Weisheipl explains the source of this common interpretation of the motion principle when he states:

“Clearly, the position attributed by modern historians to Aristotle is (and by implication, even if not intentionally, to Aquinas since he accepted the Aristotelian motion principle with no exceptions), in fact, the position of Averroes. ... It cannot be denied that many schoolmen accepted the interpretation of Averroes. In particular it was accepted by... Peter Olivi, Duns Scotus, and by the bulk of beginners’ manuals popular in the fourteenth and fifteenth centuries. However, Averroes’ interpretation was explicitly rejected on all essential points by St. Thomas Aquinas... ”¹⁹

Next, then is to historically prove that Aquinas rejected Averroes’ theory of “natural” locomotion and by implication Averroes’ interpretation of the motion principle and thereby the common modern interpretation of the motion principle. Aquinas wrote the *Summa Contra Gentiles* from 1259-1265.²⁰ In arguing for the conclusion that

¹⁶ *A Source Book in Medieval Science*. edited by Edward Grant. Cambridge, MA: Harvard University Press, 1974, pgs. 253-264. Against Edward Grant’s comments on pg. 271 n.31, the Thomistic objection to Averroes’ theory of “natural” locomotion and his consequent interpretation of the motion principle is not that such a theory requires the substantial form of inanimate substances to be *per se* movers instead of *per accidens* movers but that it requires the substantial form of inanimate substances to be at all the mover in “natural” locomotion.

¹⁷ Weisheipl, James. *Nature and Motion in the Middle Ages*, pg. 115.

¹⁸ For this common interpretation and its associated dynamical equation supposed to be that of Aristotle’s but of which Aquinas would not have accepted as applied to “natural” locomotion see Franklin, Allan. *The Principle of Inertia in the Middle Ages*. Boulder, CO: Colorado Associated University Press, 1976, pgs. 1-7. Note the dynamical equation on pg. 2. Also see the correct objection to this interpretation based on Thomas’ philosophical physics and his interpretation of Aristotle in Weisheipl, James. *Nature and Motion in the Middle Ages*, pg. 141.

¹⁹ Weisheipl, James. *Nature and Motion in the Middle Ages*, pgs. 88-89.

²⁰ See Torrell, Jean-Pierre. *Saint Thomas Aquinas*. Washington, D.C.: Catholic University of America

the motion of celestial bodies proceed from an intellectual principle he states, "Besides, heavy and light bodies are moved by their generating agent, and by that which takes away any impediment to motion, as was proved in Physics VIII. For it cannot be that the form in them is the mover, and the matter the thing moved, since nothing is moved unless it be a body."²¹ By this he is denying the Averroistic theory that the substantial form of a body is the mover (*per se* or *per accidens* is not pertinent) of its informed body in "natural" locomotion as a conjoined mover. Instead, Aquinas' theory does not require such a conjoined continual mover for such bodies in "natural" locomotion but "...they must be moved directly by their generating agent, and accidentally by the agent which removes an impediment to motion."²² The next text to be looked at as documenting Aquinas' rejection of Averroes' theory of "natural" locomotion and by implication his interpretation of the motion principle is Aquinas' *Commentary on Aristotle's Physics* (1268-1269)²³. Aquinas states explicitly when expressing his philosophical physics of locomotion that "... the natural form is not the mover. Rather the mover is that which generates and give such and such a form upon which such a motion follows."²⁴ In his commentary on book 8, in his lecture 8, Aquinas is explaining "natural" locomotion. After giving an example of a body's "natural" locomotion he states: "For it has this from its first generator which gave to it the form which such an inclination follows. Therefore, the generator is the *per se*

Press, 1996, pg. 332.

²¹ St. Thomas Aquinas. *Summa Contra Gentiles III:23,4*. translated by Vernon J. Bourke.. Garden City, NY: Hanover House, 1956. By denying that matter is the thing moved, since nothing is moved unless it be a body, Aquinas is presupposing that by definition matter in Aristotelian philosophical physics and metaphysics is not a body.

²² St. Thomas Aquinas. *Summa Contra Gentiles III:23,4*. By stating that the generating agent is what directly moves the body in "natural" locomotion Aquinas can not mean that the generating agent is a conjoined continual mover as is evident by sense perception since the generating agent is not continually in contact with the body generated. Instead as will be seen in later texts by this he means that the *per se* mover of a body in "natural" locomotion is the generating agent and the *per accidens* mover is the agent that removes an impediment to this "natural" locomotion. Also see St. Thomas Aquinas. *Summa Theologiae I:18,1,ad.2*.

²³ See Torrell, Jean-Pierre. *Saint Thomas Aquinas*, pg. 342.

²⁴ St. Thomas Aquinas. *Commentary on Aristotle's Physics*, 144. translated by Richard Blackwell, Richard Spath, and W. Edmund Thirlkel. Notre Dame, IND: Dumb Ox Books, 1999. In this statement, Aquinas means that the motion follows from the substantial form as by its nature and not as if the form is an efficient cause of such a motion. For this see Weisheipl, James. *Nature and Motion in the Middle Ages*, pgs. 91-92.

mover of heavy and light things. But that which removes an obstacle is a per accidens mover.”²⁵ Next, Aquinas states: “And further of things which are moved according to nature... some are moved according to nature but not by themselves, as heavy and light things. These latter are also moved by something, as was shown (because either they are moved per se by the generator... or they are moved per accidens by that which removes what impedes or prevents their natural motion).”²⁶ The text here is clearly opposed to Averroes’ theory of “natural” locomotion and is, as will be made evident by the next text, by implication opposed to Averroes’ interpretation of the motion principle as requiring a conjoined continual mover to everything moved. The next text to examine is Aquinas’ *Commentary on Aristotle’s De Caelo et Mundo*(1272-1273)²⁷. Here Aquinas presents probably his most exact statement of his theory of “natural” locomotion and his consequential opposition by implication to Averroes’ interpretation of the motion principle. Therefore it will be quoted in complete extent from Weisheipl. After Aquinas comments on Averroes’ arguments for considering the substantial form of a material substance to be its mover, Aquinas states in his *Commentary on Aristotle’s De Caelo et Mundo*:

“Both arguments stem from the same error. [Averroes] thought that the form of heavy and light bodies is an active principle of motion after the manner of a mover needing some resistance contrary to the tendency of form, and that motion is not immediately due to the agent who conferred the form. But this is absolutely false. The form of heavy and light bodies is a principle of motion not as a generator of motion but as a means by which the mover moves, just as color, a principle of sight, is a means by which something is seen... Thus movement of heavy and light bodies does not come from the generator by the intervention of another moving power. Nor even is there need to look for resistance here other than that which exists between generator and generated. Thus it follows that air is not required for natural motion of necessity... since that which moves naturally has a power [virtutem] imparted to it which is a principle of motion. Consequently there is no need for a body (in “natural” locomotion) to be moved by any other mover impelling it...”²⁸

Clearly, Aquinas denies that every motion has a conjoined continual mover for his theory of “natural” locomotion excludes such a conjoined continual mover and thereby he must not, in the name of self-consistency, interpret the

²⁵ St. Thomas Aquinas. *Commentary on Aristotle’s Physics*, 1035.

²⁶ St. Thomas Aquinas. *Commentary on Aristotle’s Physics*, 1036.

²⁷ See Torrell, Jean-Pierre. *Saint Thomas Aquinas*, pg. 344.

²⁸ Weisheipl, James. *Nature and Motion in the Middle Ages*, pgs. 92-93. Also see Weisheipl, James. *Nature and Motion in the Middle Ages*, pg. 135. The parentheses are mine.

motion principle in the Averroistic way as if it required that everything moved has a conjoined continual mover. Weisheipl states: "In this passage St. Thomas explicitly denies three points: (1) that the natural form is a *motor coniunctus*, (2) that there need be any continual mover to explain natural motions, and (3) that there need be any resisting medium for natural motion."²⁹ It is clear from this investigation that the modern objections to the motion principle on the basis of the principle of inertia are not objections to the historical Aristotelian and Thomistic motion principle but instead the Averroistic interpretation of that motion principle. Indeed the eminent mathematician Edmund Whittaker, as mentioned previously, was objecting to the motion principle as it is interpreted intransitively by Averroes and not the historical Aristotelian and Thomistic motion principle. Weisheipl, in response to Whittaker's objection to the motion principle, states: "However, Sir Edmund interprets this axiom to mean that whatever is in motion must be kept in motion by another, which we have seen is not the meaning of the principle."³⁰ It is the Averroistic theory of the motion principle that in reality violates the principle of inertia that was stated exactly by Isaac Newton, as his first natural physical law of that branch of mathematical physics called mechanics: "Every body continues in its state of rest, or of uniform motion in a right line, unless it is compelled to change that state by forces impressed upon it."³¹ Consequently it is clear, especially in light of Aquinas' most well known proof of the motion principle (as interpreted by him) from the real distinction between actuality and potentiality in every mobile being,³² that the truth of the Thomistic motion principle is independent of the principle of inertia in mathematical physics, for his, and Aristotle's motion principle is only a proposition of philosophical physics studied

²⁹ Weisheipl, James. *Nature and Motion in the Middle Ages*, pgs. 93.

³⁰ Weisheipl, James. *Nature and Motion in the Middle Ages*, pgs. 97.

³¹ Isaac Newton. *The Mathematical principles of natural philosophy*. translated by Silvanus Thompson. Chicago, IL: Encyclopedia Britannica, 1990, pg. 14. For Newton's technical definition of force as that which produces acceleration, often confused by historians with the motive power or even mover in general of Aristotle see Isaac Newton. *The Mathematical Principles of Natural Philosophy*, Definition 4. translated by I. Bernard Cohen and Anne Whitman. Los Angeles, CA: University of California Press, 1999.

³² St. Thomas Aquinas. *Summa Theologiae I:2,3*. from the *Treatise on God*, pg. 10. Aquinas also uses the philosophical physics definition of motion by Aristotle that "... a motion is [defined] as the actuality of the potentially existing qua existing potentially." from Aristotle. *Aristotle's Physics 201a11-12*.

per accidens in metaphysics³³. Finally to be considered is a preeminent medieval rejection of the motion principle by John Duns Scotus and a Thomistic response to his argument. The text of John Duns Scotus to be focused on is his *Questions on the Metaphysics of Aristotle* Book IX, Q.14. The title of the question is “Could something be moved by itself?”. After presenting the arguments for the position that nothing moves (or acts on) itself, Scotus proposes to argue for the contradictory proposition that something moves itself. He states:

“Anything active looks to a kind of passive thing, not to this [particular] passive thing, as its primary object. For example, what in general is able to heat, as well as any particular source of heat, regards as its first object whatever in general can be heated, not this or that particular. Contrariwise, what is passive, or can be heated, be it in general or any given thing, has as its primary object what is able to heat but not this particular [source of heat]. From this it follows that whatever is contained under the primary object is a *per se* object for the same. And anything able to heat regards whatever is able to be heated as a *per se* object; and conversely, whatever can be heated looks to whatever can heat it. But it is possible for something to be active regarding A in the same way as something else is active in its regard, and also for something to be passive as regards A, as anything else is passive in its regard. Therefore, such a thing qua active has as object qua passive, itself as much as any other thing; therefore, it can act upon itself just as upon something else.”³⁴

His argument is as follows everything active has as its primary object a passive thing in general. Contrariwise, everything passive has as its primary object an active thing in general. Scotus defines a *per se* object to be that which is contained under a primary object. Everything active has as its *per se* object that which is passive. It is possible for something to be active towards A in the same way as something else is active towards A. Second, it is possible for something to be passive towards A in the same way as something as else is passive towards A. Consequently, such a thing insofar as it is active has as an object itself insofar as it is passive as much as any other thing. Therefore it can act upon itself just as upon something else, i.e. something can move itself. The first premise includes the statement that everything passive has as its primary object an active thing in general. If object in this context is defined ordinarily, an object is that which is acted on. Since an agent (that which is active) is not that which is acted on but that which acts on the patient (that which is passive) it is impossible by the ordinary definition of an object in this context for an agent to be an object of its patient. Therefore the first premise would be false preventing this argument of Scotus from being a proof of the conclusion that something moves itself. But moving to

³³ See St. Thomas Aquinas. *Commentary on Boethius' De Trinitate Q.5,4,ad.1.* in St. Thomas Aquinas. *The Division and Methods of the Sciences.* translated by Armand Maurer. Toronto, Ontario, Canada: PIMS, 1953.

³⁴ John Duns Scotus. *Questions on the Metaphysics of Aristotle Bk. IX, Q.14,24.* from John Duns Scotus. *A Treatise on Potency and Act.* translated by Allan B. Wolter. St. Bonaventure, NY: The Franciscan Institute, 2000.

the second premise of his argument which states that a thing insofar as it is active has as an object itself insofar as it is passive. This statement, if true, would lead only to self-motion *per accidens* and not *per se* in as much as the self-motion is not in the same respect but only in different respects of being active and passive. The motion principle of Aquinas only denies self-motion *per se*. Aquinas, after his proposed demonstration of the motion principle, states his conclusion: "So it is impossible in the same respect and in the same way a thing should be both *moving* and *moved*; in other words that it should *move itself*. Therefore, whatever is *being moved* must be moved by another."³⁵ Again Aquinas, in his commentary on the Aristotelian text³⁶ that introduces Scotus' *Questions on the Metaphysics of Aristotle Book IX, Q.14*, states:

"And since active potency and passive potency are present in different things, it is obvious that nothing is acted upon by itself inasmuch as it is naturally disposed to act or to be acted upon. However, it is possible for something to be acted upon by itself accidentally. . . . But in this case a thing is not acted upon by itself, because, properly speaking, one of the aforesaid principles (active potency and passive potency) is present in one and the same thing, and not the other. For the principle of being acted upon is not present in the one having the principle of action except accidentally, as has been said (n. 1782)."³⁷

By this Aquinas means that since active potency (power) and passive potency (potentiality) are present in different things with active potency as power in an agent and passive potency as potentiality in a patient, it is evident that nothing is acted upon by itself (nothing is moved by itself) in so far as it is naturally an agent or a patient. Yet, he states that it is possible for something to be acted upon by itself (be moved by itself) *per accidens*. Since nothing is moved by itself *per se* but it is possible for something to be moved by itself *per accidens* if and only if nothing moves itself *per se* but it is possible for something to move itself *per accidens*, the conclusion of Aquinas is identical to the statement that nothing moves itself *per se* but it is possible that something may move itself *per accidens*. Next Aquinas explains how it is possible for something to be moved by itself *per accidens*. He states that to be moved by itself *per accidens* does not exist because power and potentiality (which exists in an agent and

³⁵ St. Thomas Aquinas. *Summa Theologiae I:2,3*. from the *Treatise on God*, pg. 10.

³⁶ See Aristotle. *Metaphysics 1046a28-30*. which has "And so in so far as a thing is an organic unity, it cannot be acted on by itself; for it is one and not two different things."

³⁷ St. Thomas Aquinas. *Commentary on Aristotle's Metaphysics, 1783*. translated by John P. Rowan. Notre Dame, IND: Dumb Ox Books, 1995. The parentheses are mine.

patient respectively) are present in one and the same thing (*per se*, i.e. in the same respect) but it exists because potentiality and power are present in different things or in the same thing in different respects (such as passive and active) which is *per accidens*. This is the point in objecting to the second premise of the Scotistic argument mentioned previously. It concludes at most to self-motion *per accidens* and not *per se* when in reality only self-motion *per se* violates the motion principle as enunciated by Aquinas, as was made evident previously.

It is apparently because the founders of the scientific revolution only knew of the Averroistic interpretation of the motion principle as especially derived from the humanistic Aristotelians of the Renaissance that they, like most modern historians of natural science, have rejected it.³⁸ It is also true that medieval scholastics such as Scotus objected to the motion principle having interpreted it as Averroes did.³⁹ But Scotus, like other scholastics such as Henry of Ghent belonging to the Augustinian-Platonist tradition, wanted to hold that something moves itself in order to deny that the will is moved by anything in accordance with their voluntarism.⁴⁰ Consequently, he and similar scholastics had an added motive to deny the motion principle. In conclusion, this paper has presented Aquinas' theory of "natural" locomotion not because it is held to be true but because it historically proves that Aquinas' theory of the motion principle contradicts the common modern Averroistic interpretation of the motion principle. Thereby this motion principle is not to be rejected on the grounds that the Averroistic motion principle is rightly rejected, that it is physically false philosophically and is contradicted by the inertial physical law of mathematical physics.

³⁸ For the associated Averroistic theory that all locomotion through a void is impossible with Galileo's rejection of such a theory, as did Aquinas, see Weisheipl, James. *Nature and Motion in the Middle Ages*, pgs. 139-142.

³⁹ See footnote 12.

⁴⁰ See Copleston, Frederick. *A History of Philosophy, Vol. III: Medieval Philosophy*. New York, NY: Doubleday, 1993, pg. 521. Also see Henry of Ghent. *Quodlibetal Questions on Free Will*. translated by Roland J. Teske. Milwaukee, WI: Marquette University Press, 1993.

Bibliography

1. St. Thomas Aquinas. *Summa Contra Gentiles I*. translated by Anton Pegis. Garden City, NY: Hanover House, 1955.
2. St. Thomas Aquinas. *Summa Theologiae*. translated by the English Dominican Province. New York, NY: Benziger Bros., 1948.
3. St. Thomas Aquinas. *Treatise on God*. translated by James F. Anderson. Eugene, OR: Wipf and Stock Publishers, 2001.
4. Weisheipl, James. *Nature and Motion in the Middle Ages*. Washington, D.C.: Catholic University of America Press, 1985.
5. Maurer, Armand. *The Philosophy of William of Ockham: In the Light of its Principles*. Toronto, Ontario, Canada: PIMS, 1999.
6. Aristotle. *The Complete Works of Aristotle: The Revised Oxford Translation*. edited by Jonathan Barnes. Princeton, NJ: Princeton University Press, 1995.
7. Aristotle. *Aristotle's Physics*. translated by Hippocrates G. Apostle. Grinnell, Iowa: The Peripatetic Press, 1980.
8. John F. Wippel. *The Metaphysical Thought of Thomas Aquinas*. Washington, D.C.: Catholic University of America Press, 2000.
9. Effler, Roy R. *John Duns Scotus and the Principle "Omne quod movetur ab alio movetur"*. St. Bonaventure, NY: Franciscan Institute Publications, 1962.
10. *A Source Book in Medieval Science*. edited by Edward Grant. Cambridge, MA: Harvard University Press, 1974.
11. Franklin, Allan. *The Principle of Inertia in the Middle Ages*. Boulder, CO: Colorado Associated University Press, 1976.
12. Torrell, Jean-Pierre. *Saint Thomas Aquinas*. Washington, D.C.: Catholic University of America Press, 1996.
13. St. Thomas Aquinas. *Summa Contra Gentiles III Part I*. translated by Vernon J. Bourke. Garden City, NY: Hanover House, 1956.
14. St. Thomas Aquinas. *Commentary on Aristotle's Physics*. translated by Richard Blackwell, Richard Spath, and W. Edmund Thirlkel. Notre Dame, IND: Dumb Ox Books, 1999.
15. Isaac Newton. *The Mathematical principles of natural philosophy*. translated by Silvanus Thompson. Chicago, IL: Encyclopedia Britannica, 1990.
16. Isaac Newton. *The Mathematical Principles of Natural Philosophy*. translated by I. Bernard Cohen and Anne Whitman. Los Angeles, CA: University of California Press, 1999.
17. St. Thomas Aquinas. *The Division and Methods of the Sciences*. translated by Armand Maurer. Toronto, Ontario, Canada: PIMS, 1953.
18. John Duns Scotus. *A Treatise on Potency and Act*. translated by Allan B. Wolter. St. Bonaventure, NY: The Franciscan Institute, 2000.
19. St. Thomas Aquinas. *Commentary on Aristotle's Metaphysics*. translated by John P. Rowan. Notre Dame, IND: Dumb Ox Books, 1995.
20. Copleston, Frederick. *A History of Philosophy, Vol. III: Medieval Philosophy*. New York, NY: Doubleday, 1993.
21. Henry of Ghent. *Quodlibetal Questions on Free Will*. translated by Roland J. Teske. Milwaukee, WI: Marquette University Press, 1993.