TEN OBJECTIONS TO THE *PRIMA VIA*

Michael Augros
Legionaries of Christ
Center for Higher Studies
Thornwood, New York

THE DIFFICULTY of answering objectors often surpasses the difficulty of grasping the principle or the argument to which they object. It is much easier, for example, to see that motion exists than to see what is wrong with Zeno's reasons for denying it. Another instance is the First Way in which Thomas Aquinas proves the existence of God,[1] an argument beginning from the undeniable fact of motion. Compared, say, to the Fourth Way, the argument of the First Way is relatively easy to grasp and to follow. It is the *manifestior via*. This does not mean it is easy to answer objections against it. Many Thomists today surrender the First Way to the attacks of modern philosophy and modern science, embarrassed especially by such difficulties as those posed by inertia or the presence of the geocentric theory in the similar argument of *Summa Contra Gentiles* I.13. For these reasons, I hope it will be of some service to bring together in this article ten of the principal difficulties about the First Way and an outline of their solutions. Objections concerning earlier parts of the argument will be taken up earlier, those concerning later parts later. A general familiarity with the argument of the First Way itself is presumed throughout, but for the reader's convenience I will begin with a translation of it:

> Now the first and more manifest way is that which is taken on the side of motion. For it is certain, and stands to sense, that some things are

[1] *Summa Theologiae*, I Q2 A3 C.

> moving in this world. But everything which is in motion, is moved by another. For nothing is in motion except according as it is in potency to that toward which it is in motion: whereas it moves something according as it is in act. For to move [something] is nothing else than to lead something out of potency into act: but something cannot be led back from potency into act except by a being in act: as the hot in act, such as fire, makes wood, which is hot in potency, to be hot in act, and by this moves and alters it. But it is not possible that the same thing be at once in act and potency in respect of the same thing, but only in respect of diverse things: for what is hot in act cannot at the same time be hot in potency, but rather it is at the same time cold in potency. Therefore it is impossible that, in respect of the same thing and in the same way, something be mover and moved, or that it move itself. Therefore everything which is in motion, must be moved by another. If therefore that by which it is moved be in motion, it is necessary that this also be moved by another, and that by another. But this is not able to proceed into the infinite, because thus there would not be a first mover, and consequently neither any other mover, because secondary movers do not move [anything] except through the fact that they are moved by a first mover, as a staff does not move [anything] except by the fact that it is moved by the hand. Therefore it is necessary to arrive at some first mover, which is moved by none: and this all understand [to be] God.[2]

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[2] The Latin is as follows: "Prima autem et manifestior via est, quae sumitur ex parte motus. Certum est enim, et sensu constat, aliqua moveri in hoc mundo. Omne autem quod movetur, ab alio movetur. Nihil enim movetur, nisi secundum quod est in potentia ad illud ad quod movetur: movet autem aliquid secundum quod est actu. Movere enim nihil aliud est quam educere aliquid de potentia in actum: de potentia autem non potest aliquid reduci in actum, nisi per aliquod ens in actu: sicut calidum in actu, sicut ignis, facit lignum, quod est calidum in potentia, esse actu calidum, et per hoc movet et alterat ipsum. Non autem est possibile ut idem sit simul in actu et potentia secundum idem, sed solum secundum diversa: quod enim est calidum in actu, non potest simul esse calidum in potentia, sed est simul frigidum in potentia. Impossibile est ergo quod, secundum idem et eodem modo, aliquid sit movens et motum, vel quod moveat seipsum. Omne ergo quod

1. AN UNMOVED MOVER HAS NO MOTION TO GIVE

The First Way seeks to arrive at a cause of motion which is not itself in motion. Does this not, however, violate a principle which the First Way implicitly invokes, namely that nothing gives what it does not have? How can anything which has no motion impart motion to something else?

The key to answering this difficulty is that motion and change are imperfect acts.[3] Consider the act of walking: so long as it is true to say that I am walking home, it is not yet true to say that I have walked home, and as soon as it is true to say that I have walked home, I am no longer walking home. While the act of motion exists, it is incomplete; as soon as it is complete, it no longer exists. Motion and change are acts, but they are essentially unfinished and incomplete acts. In order for a cause to make anything else act or be actual, however, what is required is that the cause of this be at least as perfectly actual as the effect is to be, not that it be just as imperfectly actual as its effect will be. Nothing prevents an agent from giving *less* than it has. And therefore it is not universally necessary for every cause of motion to have *imperfect act*, namely motion, in order to give it to another thing. A fire does not have to be increasing in temperature in order to increase the temperature of another thing—it needs only to have at least the same temperature to which it will heat up the other thing.

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movetur, oportet ab alio moveri. Si ergo id a quo movetur, moveatur, oportet et ipsum ab alio moveri; et illud ab alio. Hic autem non est procedere in infinitum: quia sic non esset aliquod primum movens; et per consequens nec aliquod aliud movens, quia moventia secunda non movent nisi per hoc quod sunt mota a primo movente, sicut baculus non movet nisi per hoc quod est motus a manu. Ergo necesse est devenire ad aliquod primum movens, quod a nullo movetur: et hoc omnes intelligunt Deum."

3 See Aristotle's *Metaphysics*, IX.6 1048b 28-34. See also Aquinas's commentary on the *Physics*, Book 3, Lectio 3, n.583 in the Pirotta Edition: "Motus est actus; sed est actus imperfectus."

Again, teachers do not need to be *coming to know* in order to cause their students to come to know—they need only to *know*, to have actual knowledge, since coming to know is like an imperfect possession of knowledge.

2. LOSS OF SOMETHING DOES NOT REQUIRE A CAUSE

It seems that a mover is required only for motions in which the movable thing gains something, since nothing gives itself what it does not have. But is it not possible for something to lose what it has without any outside help? For then it will not be giving itself something it does not have—and yet the loss of something is a change as much as any other.

Usually, the loss of something is the side-effect of gaining something incompatible with what was lost. When a material loses its shape, for example, this is because it has gained a new shape, or when a body loses its place, this is because it has gained a new place. Whenever this happens, there must be a mover responsible for the gain, although no separate mover is needed for the concomitant loss. The same mover is the cause both of the gain *per se*, and of the loss *per accidens*.[4]

And it is doubtful that any change can be a pure loss, and not be the accompaniment of any gain. When a fire loses heat and eventually dies, for example, simultaneously with the loss of fuel and heat there is the gain of new compounds that did not exist before.

Supposing, however, that there do occur pure losses which are not the accompaniment of any gain, there would be no special need to

[4] "A natural agent intends not privation or corruption, but the form to which is annexed the privation of some other form, and the generation of one thing, which implies the corruption of another." Aquinas, *Summa Theologiae*, I Q19 A9 C. See also *Summa Theologiae* I Q49 A1 C, and *Summa Contra Gentiles* III.4 for remarks on how privations are caused.

introduce a mover outside the thing that suffers the loss, since there is no increase in actuality, but a mere failure. Conceding this, it remains certain that many changes exist which necessarily involve a gain—such as changes of place and shape—and nothing prevents the First Way from proceeding from these.

3. MANY THINGS SEEM TO GIVE WHAT THEY DO NOT HAVE

A drug can give health to the body, but it is not healthy itself. Alcohol can cause drunkenness, but it is not drunk. A knife can cause death, but it is not dead. Fire can blacken paper, but it is not black. In general, it seems quite common for agents to give something that they do not have. Why, then, can't something which is able to move and which has no motion give itself motion? This does away with the need for movers distinct from mobiles.[5]

It is so clearly impossible for a thing to give what it does not have, that in cases where we see something gained which we do not see possessed by the cause, we must conclude either (a) that the known cause does possess what it gives, but in a way we do not see,[6] or (b) that there is another cause which we do not see.[7]

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[5] Anthony Kenny raises this objection: "The principle that only what is actually F will make something else become F does not seem universally true: a kingmaker need not himself be king, and it is not dead men who commit murders," *The Five Ways: Saint Thomas Aquinas' Proofs of God's Existence*, University of Notre Dame Press, Notre Dame, Indiana, 1980, p.21. "A man who fattens oxen need not be fat," ibid., p.22.

[6] For example, a house builder is not a house, but he has a house in his mind.

[7] For example, it is impossible for a hat to yield a rabbit that was not in it to begin with. If a magician appears to pull a rabbit out of a hat that did not initially contain a rabbit, everyone realizes that this was due to his introducing the rabbit into the hat in a way they did not see.

As for (a), a carpenter can cause a house although he is not a house. He does not possess the form of a house in the same visible manner in which the materials for a house possess it. Nonetheless, he does possess this form in a superior way, in his knowledge, and it is precisely in virtue of this hidden possession of it that he is able to impart it to the materials for a house. It is to be expected, therefore, that a cause not so well known to us as a carpenter might precontain its effect in a way we do not see.

Case (b) is more relevant to the objector's examples. One can mistake a single attention-getting agent for the total or sufficient cause of the produced effect, when in reality it is not. A single person shouting "Fire!" in a crowded theatre can cause a stampede with destructive power far exceeding his own personal strength—but we should not conclude from this that he has given something he does not have. He has *triggered* a change resulting in something beyond his own personal power by setting in motion many other causes having abilities which he did not give to them. It is to be expected, therefore, that when there is a change or motion not as well known to us as a stampede of frightened people, some single thing standing out as the chief cause of that change might not itself possess, or possess fully, an actuality commensurate with the end result of that change. There may be other causes, even other kinds of causes, at work.

To go back to one of the objector's examples, fire is neither the sole nor immediate cause of the blackness of the paper. What the fire gives to the paper is *heat*, which in turn redisposes the paper in a way that is incompatible with its original chemistry. It is the new resulting substances, not the fire, that are the cause of the new blackness in the way that any substance is the cause of its own properties.[8]

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[8] The way a subject is the cause of its own properties, incidentally, is not ordinary agent causality: carbon, for example, does not "make itself black." When Aquinas explains how the soul is a cause of its powers and proper accidents, he

This objection, therefore, proceeds from oversimplifications, and by taking the wrong things to be sufficient agent causes of certain particular effects.[9]

A particular version of this objection arises in the case of locomotion by pushing. If a man pushes a box into a room, must we say that he, being the mover, possesses location in the room more than the box does, and this is why he is able to give the box that location? Rather, it seems that the box is closer to being in the room than the man is, since he pushes it in front of himself.[10]

As already noted, the agent need not possess the ultimate perfection it imparts in the same way as the thing that will receive it. A house builder is not a house, but he does possess the form of a house in his mind, and it is in virtue of this that he can produce one. Moreover, an instrumental agent need not possess the final form in a complete way at all, but instead possesses it in a piecemeal way, bit by bit, as the brush of an artist never contains the form of the painting all at once, but receives the form of only one passage at a time in its movements insofar as it is moved by the artist. Now every mover that

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does not call it an agent cause of these, but a "causa quodammodo activa." See *Summa Theologiae* I Q77 A6 Ad2.

9 A quick glance at the fifth and sixth lectios in Aquinas's commentary on the second book of Aristotle's *Physics* dispels any notions that it is a simple matter to assign the appropriate cause for any effect. One must be careful to distinguish between the four kinds of causes, and within these one must distinguish between causes *per se* and causes *per accidens*, universal and particular causes (whether universal in predication or in causality), potential causes and actual causes. Among agent causes, some complete the effect by introducing its form, others prepare or dispose the matter to be formed, others give another agent a form in virtue of which it can act for them as a separated instrument. A single effect can have many agent causes, and many agents can be in some essential order or they may be of the same order cooperating with one another.

10 Anthony Kenny raises this objection: "Is St. Thomas saying that a body can be moved to B only by something which is already at B?" *Op. cit.*, p.22.

moves things by means of its own motion is a moved mover, and hence a kind of instrument of a prior agent. Accordingly, there is no need to suppose that a body pushing another body possesses the term of the motion perfectly. It is enough that by its motion it has a greater tendency to that place than does the body which it pushes. There must indeed be an ultimate agent which in some way possesses all the actuality involved in the term of the motion, but it need not possess that actuality in the same way as a body existing in a place, as a carpenter must possess the form of the house he is building, but he need not have it in the same manner as the house itself.

4. LIVING THINGS MOVE THEMSELVES

Living things seem to be capable of self-motion. Do we not ourselves move about by ourselves, without help from someone else? Hence it seems false to say that everything in motion is moved by something else.

Every living thing is composed of parts, and the whole "moves itself" only in the sense that one part moves another part. Similarly a thing might be said to "touch itself," but only in the sense that one part touches another part. A nation is said to "govern itself" not because the whole nation governs the whole nation, but because one part of it governs the other parts. Likewise a person "teaches himself," not because he moves himself toward knowledge and is moved toward it in virtue of the same thing within himself and without distinction, but because of some distinction in him: he is moved toward a conclusion insofar as his mind is in potency to it, but he moves himself toward it insofar as he actually possesses a knowledge of the premises. So too in every animal one part of the body moves another, and this ultimately goes back to the animal's desire to move. The animal's desire to move, in turn, is moved by a sense awareness of something desirable to it, which brings us to a cause of its motion outside itself. Similarly the unconscious changes in a living thing, such as growth

and development, whether in animals or plants, proceed from one part acting upon another part.

One need not deny that living things move themselves. But they are called "self-movers" only because in their case the mover and the moved happen to be conjoined yet distinct parts of one thing.[11] We must distinguish a motive part and a movable part in any self-mover because, as the argument of the First Way shows, if one and the same thing is both mover and moved without distinction, then it both has and does not have the same actuality at the same time, which is impossible.

The same thing must be said about such things as automobiles. It is really one part, say the engine, that moves another, say the wheels. And the engine in turn is moved by the explosion of the gasoline, which is caused (in part) by its being injected into the engine, which is caused (in part) by a foot on the gas pedal.

There may be any number of complicated cases where we will not be able to distinguish clearly between the mover and the moved, or to identify all the components of each. But this is no real obstacle. What is actually X and what is not actually X must be distinct—and what is a mover is actually X and what is in motion is not actually X.[12] Hence that whereby something is mover and that whereby it is mobile can never be exactly the same thing, even if, in a particular case, we cannot see how to distinguish them. Similarly, given a sufficiently complicated sum of integers, one might not be able to say whether the sum will be even or odd, but this does not diminish one's certainty that every integer must be one or the other, and never both at once.

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11 "The conclusion thus stands: one part of a self-moved mover must be unmoved and moving the other part," Aquinas, *Summa Contra Gentiles* I.13.

12 Or at least the mover must be somehow more actually X than the thing moved, as in the case of the pushing body from the last objection.

Hence the things which are said to move themselves are not real exceptions to the conclusion that whatever is in motion is moved by something else, since within the self-mover there will be what is moved on the one hand and something distinct by which it is moved on the other.

5. INERTIA

The First Way depends on the principle "Omne quod movetur ab alio movetur."[13] *But we see many motions in which no mover is at work on the mobile, such as inertial motions. Therefore it is not true that every motion requires a mover outside the mobile.*[14] *Also, we see many pairs of movers mutually moving each other, such as gravitating bodies and magnets, and we do not see any other mover acting upon them both. Therefore, even if everything in motion is moved by something else, this does not necessarily bring us back to an unmoved mover, but possibly to two movers moving one another.*[15]

The principle "Omne quod movetur ab alio movetur" can be translated, and consequently understood, in significantly different ways, thanks to the ambiguity of the word "movetur." Does "movetur" mean "is moved" or "is being moved" or "is in motion"?

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13 In the course of the First Way, Aquinas argues that "Omne . . . quod movetur, oportet ab alio moveri."

14 Kenny raises this objection: "It seems that Newton's law wrecks the argument of the first way. For at any given time, the rectilinear uniform motion of a body can be explained by the principle of inertia in terms of the body's own previous motion without appeal to any other agent." *Op. cit.*, p.28.

15 "But nothing resembling a reduction of inertia to gravitation could salvage the use made of the principle in the First Way. For the gravitational attraction of two bodies is mutual, whereas the Aristotelean relation of 'moving' must be an asymmetrical one if it is to lead to an unmoved mover." Kenny, *op. cit.*, p.30.

One way to translate the principle is like this: "Everything in motion is being moved by another." This implies that whatever is in motion is continually being acted upon and sustained in motion by an outside agency, so long as it is in motion. Now in many cases we see an initiator of a motion, but we cannot see any obvious "sustainer" of the motion so long as the motion endures—as when someone drops or throws a stone. And this is the basis of the objection.

Another way to translate the principle is like this: "Everything in motion is moved by another." This implies that every motion is the result of a mover distinct from the thing in motion, but not necessarily that the mover be anything more than an initiator of the motion.

How, then, did Aquinas (or, for that matter, Aristotle) intend the principle *Omne quod movetur ab alio movetur*?

It is Hume, not Aquinas or Aristotle, who defines a cause (in the sense of a mover) as something in "constant conjunction" with what it moves or effects.[16] When Aristotle defines a mover, he does not define it as what is in constant conjunction with the mobile, but as what first began some motion.[17] His examples are a father and an advisor. The father is a "cause of the child" even though the seed generating the child is separate from the father. The advisor, presumably, is the one who first begins some action carried out on his advice, and he is a cause of this although he is separate from the one

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16 See, for example, *A Treatise on Human Nature*, Book I, Part III, Section II, Penguin Books, Baltimore, Maryland,1969, p.123: "Though distant objects may sometimes seem productive of each other, they are commonly found upon examination to be link'd by a chain of causes, which are contiguous among themselves, and to the distant objects; and when in any particular instance we cannot discover this connection, we still presume it to exist. We may therefore consider the relation of CONTIGUITY as essential to that of causation." Again: "The cause and effect must be contiguous in space and time. . . There must be a constant union betwixt the cause and effect. 'Tis chiefly this quality, that constitutes the relation." *Ibid.*, Part III, Section XV, p. 223.

17 *Physics* II.3 194b30.

who carries it out. Aristotle's definition conforms more to experience than Hume's: according to Hume's understanding, a fire would be more responsible for the burning of a building, would be more a mover, than the arsonist who lit it and fled. On Aristotle's understanding, the arsonist is more a mover, because although he is not constantly conjoined to the burning of the building, he is the one *who started it*. The man who yells "Fire!" in a crowded theatre is more responsible for the stampede that follows than those who stampede.

Accordingly Aristotle designates as the "mover" of a natural motion whatever in some way initiates it, even if it is not thereafter continuously acting upon the mobile throughout its motion. Conversely, Aristotle and Aquinas both admit that the nature of a natural body is in some sense an active principle of its natural motion, and that it is continuously conjoined to the natural body whose nature it is, and yet they do *not* call it the "mover":

> Just as other accidents follow upon the substantial form, so too place, and consequently moving to a place; but not in such a way that the natural form is a mover, but rather the mover is the generator which gives such a form, upon which such motion follows.[18]

If a natural body "moved itself," this would mean that it *initiated* its own motions, which is true only of living things.[19] What is it that initiates the downward motion of a heavy body (or the mutual ap-

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[18] Commentary on *Physics* II, Lectio I, n.293 Pirotta edition. When Aquinas denies, in the same text, that the substantial form of a natural body is a "potentia activa," it appears he is denying that it is a *mover*, because "motor est generans." He is not denying altogether that the substantial form of a natural body is a kind of active principle of its motion. See *Summa Theologiae* I Q77 A6 Ad2, in which he says "a subject is a final and in a certain way active cause of its proper accident." One must say that a subject is "in a certain way" the active cause of its properties, lest someone think it is a mover or generator of them, as if carbon "made itself black," for example.

[19] *Physics* VIII.4 255a5.

proach of two bodies)? Certainly not itself, but rather whatever it was that gave it the inclination to move thus, i.e. whatever generated it, just as the "mover" responsible for the burning of the building is not so much the fire as the one who produced the fire. Its motion or tendency to move begins when it begins to be, and since it does not begin its own being, neither does it begin its own motion. (Of course, such natural motions can be impeded, and thus the natural motion can also be initiated or begun in some sense by whatever removes an impediment to such a motion.[20])

Hence it would appear that, for Aristotle and Aquinas, the principle "Omne quod movetur ab alio movetur" means "Everything which is in motion is moved by another," that is, every motion requires an initiator of the motion other than the thing which is itself in motion *primo et per se*. Gravitational and magnetic motions, therefore, rather than representing counter-examples to this principle, would be clear instances of it. Such motions are not initiated by the massive or magnetic bodies themselves, but always by something else (which either produced the bodies or brought them in range of each other or removed impediments to their influence), and to be a mover is to be an initiator. Hence all such motions come to their mobiles from something other than the mobile.

Now a special problem arises in the case of inertial or projectile motions. At first it is hard to see why. If finding an initiator of a motion is enough to satisfy *Omne quod movetur etc.*, then why do Aristotle and Aquinas think that projectile motions pose a special difficulty? Obviously such motions have an initiator, namely the projector. But such a motion, on their understanding, is also violent or unnatural—a projector is necessary precisely because the body is being moved in a way it has no natural inclination to move, as when a stone is thrown upward, away from its natural place (namely at the center of the universe). Since such a motion is unnatural to the

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20 *Physics* VIII.4 256a1-2.

mobile, it is puzzling that it should continue without the continuation of a foreign influence. If it is contrary to my dog's inclination to go toward the bath, then he will not of himself continue toward the bath once started in that direction, but will need to be forced every step of the way.

In short, projectile motion poses a special problem not because it is an ongoing motion and all ongoing motion demands a mover to be in constant contact with it, but because it is a violent motion, and such motion especially seems to demand a mover constantly working upon the mobile, to make it do what it has no inclination to do, or even make it do something contrary to its inclination.

Now Aquinas's way of solving this question is not so clear. In some places, he seems to speak as if the mover imposes some kind of *impetus* upon the body, and this unnatural and temporary disposition imposed upon it by the mover is the requisite continuously conjoined principle of the unnatural motion.[21] In other places, he seems to deny this explanation, and say it is instead some power in the medium which moves the projectile.[22]

For the present purpose, however, there is no need to resolve this question. If it is the case that inertial motion is contrary to an abiding inclination in the mobile, then evidently such motion will require a continuously active principle, whether this be something outside and surrounding the body, or an unnatural disposition imposed upon the body itself, or something that does not act in a body at all. If, on the other hand, continuing in an inertial motion already begun is not contrary to any inclination in a body, and the body can be understood to have a new quasi-natural tendency to stay in motion, then it does not appear to demand any particular mover beyond the projector. Either

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[21] See *Quaestiones Disputatae de Potentia*, Q3 A11 Ad5.

[22] See the commentary on the *De Caelo et Mundo* III Lectio VII, n. 591 [6], Marietti edition.

way, inertial motion at least demands an initiator, a thrower. It might also demand a further mover, not because of the general principles of the First Way, but because of other considerations about natural vs. unnatural motion. However one slices it, *Omne quod movetur etc.* is preserved.

To sum up: Every motion requires a "mover" in the sense of an initiator, and this mover must be something other than what is in motion *primo et per se*. This is how the principle "Omne quod movetur ab alio movetur" is understood by Aquinas, and how it operates in the First Way. Natural motions do not require any mover beyond the initiator (or impediment-remover), since the nature of the mobile is an active principle sustaining the motion thereafter. Projectile motions also require an initiator, a projector, and they will require a mover to sustain them in motion only if they cannot themselves be understood to obtain a new inclination to remain in motion.

It is worth noting some other common responses to this objection to the First Way concerning inertial motion.

(1) Some would solve this difficulty by denying the basis for it: the distinction between natural and violent motion. Natural motion, they say, is defined by "natural place," and the existence of "natural place" went the way of the geocentric theory. Motion is simply motion, being neither natural nor violent, and therefore the difficulty of finding a mover to sustain projectile motions vanishes.

This will not do, however. Aristotle, it is true, believed in "natural places" in a sense that almost no one would accept today. "Up" and "down" do not appear to be absolute directions at any point in the universe, and perhaps the universe has no absolute center or boundary with any physical significance. Accordingly, many have rejected the

notion of "natural motion" altogether.[23] But if there is such a thing as "nature," then there must be natural motion, and if natural motion, then there must be certain places that things naturally seek—"natural places"—even if these are not absolute and immobile precisely in the manner that Aristotle believed them to be on his understanding of the heavens.

Some decades ago, W. A. Wallace quite reasonably proposed that the motions resulting from gravity and magnetism should be considered natural, in that they are motions connected to and apparently proceeding from the natures of the bodies in question, motions to which the bodies are inclined of their own accord, which approach a definite goal, and which have a kind of uniformity in that they happen the same way always if nothing interferes.[24] The only significant element of Aristotle's natural motions which is missing in this description is that Aristotle's natural motions approached natural places which were entirely immobile, having a definite and fixed spatial relationship to the immobile outer limits of the universe. This last feature of Aristotle's understanding of "natural motion" seems to be something he arrived at by considerations over and above what is

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[23] Antonio Moreno gives the impression that the very general distinction between natural and violent motion, and not merely the concrete manner in which Aristotle understood it to apply in the universe, has become outmoded: "The distinction of motion as natural and violent is invalid in modern physics ." "The Law of Inertia and the Principle *Quidquid Movetur ab Alio Movetur*…" *The Thomist*, 38, 1974, p.321. Again, when he says "This conception is now, of course, outmoded, because natural places are not thought to exist" (*ibid.*, p.328), he does not make clear whether the very notion of "natural place" must be discarded, or just Aristotle's understanding of how natural places exist. Has modern science made obsolete, for example, the notion that the womb is the natural place of an unborn child? The womb, being mobile, is not a "place" in the full sense of Aristotelian place, but it surely is a place of some kind, and it seems that place cannot have the kind of immobility that Aristotle believed it to have.

[24] See Wallace, "Newtonian Antinomies Against the 'Prima Via,'" *The Thomist* 19, 1956, pp.167-169.

natural or violent, namely by looking at how the universe around him appeared to be operating. Hence nothing prevents an understanding of "natural motion" apart from absolute "natural places." If mutually repelling bodies move away from each other by natural motion, then the "natural place" each seeks is "away from that other," or "a certain distance from its influence." If mutually attracting bodies move each other by a natural motion, then the "natural place" which each seeks is nothing else than a union in place with the other body, as animals of a species tend to stay together. In short, some distinction between natural and violent motion must be maintained, so long as nature and the natural exist, but how this distinction works out in concrete details need not conform to Aristotle's specific theories.

(2) Some have proposed another response to the objection drawn from inertia, suggesting that uniform motion is not motion at all, that it is a "state," like rest. Uniform motion, they say, is like maintaining the same temperature, which is not a change, but only a retaining of a current level of energy, whereas an acceleration would be like a change in temperature, and this would demand a cause.

It is true that a body in local motion (whether uniform or not) as such gains nothing new within itself, but only something new outside itself, a new place.[25] And so it is true that a change of place is not as intrinsic to a thing as a change of its color or shape. Nonetheless, a change of place *is* a change, and remains distinct from rest. To rest in one place is not the same thing as to move through a continuum of places. However inconsequential and uniform an "inertial" motion may seem, one cannot defend the First Way on the grounds that its principles need not apply to motions of uniform velocity, insisting that such are not motions at all. It is remarkable, though, that some should speak in this way: they bear witness to the principles of the First Way. What they recognize as genuine change, namely accelerated motion, they understand to be in need of a cause; when they think that

[25] See *Summa Theologiae* I Q110 A3 C.

something is not in need of any cause, they deny that it is a genuine change. Here one sees why the First Way is *manifestior*: it is manifest that what changes demands a cause, while it is not as clear that even some things that do not change demand one as well.

There may be another element of the truth in this attempt at a resolution: it might be true that inertial motion does not as such require any mover beyond the initiator, and hence is or resembles natural motion. At least experience seems to support the notion that a body resists being brought up to a certain speed and direction (hence the need for an initiator), but does not resist maintaining that speed and direction unless other things act on it in such a way as to slow it down (wind resistance, friction, etc.). The main difficulty with supposing this is that it is hard to see how one nature can be naturally inclined both to rest and to motion, and even to many opposed motions of different directions and speeds. Is not nature *determinata ad unum*? But perhaps nothing prevents the same nature from being inclined to different things under different circumstances, as the natural instincts of an animal do not determine it simply to one behavior, but to one behavior under given circumstances.

(3) Others have responded to the inertial problem by ignoring local motion altogether, allowing the First Way to proceed from alterations and other non-local motions alone.[26]

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[26] Garrigou-Lagrange suggests this: "Many other things are required before the Cartesian idea of motion can be accepted ... and if it were acceptable for local motion, our proof could still be based on qualitative motions or augmentation." *God: His Existence and His Nature*, p.272. Wippel, too, notes it: "Moreover, as at least one writer has proposed, one might, unlike Aquinas, simply exclude local motion as a starting-point for the argument and use another example such as alteration." *The Metaphysical Thought of St. Thomas Aquinas: From Finite Being to Uncreated Being*, The Catholic University of America Press, Washington D.C., 2000, p.456.

The difficulty with this way of proceeding is that there is no obvious reason that Aquinas's universal principles about act and potency should not apply to local motion. Hence, either they do apply, and one must show that inertial motions are no exception, or else they do not apply, and one must say why not. Otherwise Aquinas is in the position of having proved too much, having shown that *all* motions require movers distinct from the mobile, when in fact only some do.

(4) Others have responded to the inertial problem by pointing out that inertia is a mere abstraction; there is no such thing as unresisted motion, and hence no such thing as pure inertial motion. Any motion approaching uniform velocity is in fact maintained by movers continually at work, as the uniform motion of a jet plane is caused by its engines.[27]

This response is good as far as it goes, but it remains that inertial motion seems to exist somehow as a component of actual motions, and hence one must say it requires a mover, although perhaps only an "initiator" and not a "sustainer." A rolling marble slows down and eventually stops—whether or not this motion requires a mover continuously acting on the marble so long as it rolls, it certainly requires a mover to set the marble in motion. And that is sufficient for the First Way.

(5) Still others have said that inertial motion cannot be known to exist,[28] not even as a tendency or a component of other motions. How

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[27] Wallace, for example, points this out: "In point of fact, in all observable cases in the real world, an extrinsic mover is needed in order to have a motion that is exactly uniform," *Op. cit.*, p.180.

[28] See for example Garrigou-Lagrange: "The principle of inertia, insofar as it affirms that an imparted motion continues without a cause, cannot be verified by experience." *God: His Existence and His Nature*, R. Garrigou-Lagrange, O.P., translated from the fifth French edition by Dom Bede Rose, B. Herder Book Co., St. Louis, MO, 1939, Volume I, p.275. See also W. A. Wallace, *op. cit.* pp. 178-179.

do we know that bodies put in motion and left alone do not tend to slow down imperceptibly? The ancients assumed that the heavens were made of incorruptible stuff, in part because nothing up there had been observed to corrupt for so long a time—and yet this assumption proved false.

This is a helpful insight, bringing out the hypothetical nature of "The Law of Inertia." Nonetheless, one should hesitate to answer the difficulty in this way alone, since it appears to commit the First Way to a theory of a gradually diminishing impetus in projectiles—which is also not verifiable. The principles of the First Way do not commit its adherents to any particular theory as to whether there is any physical cause of inertial motion continuously working upon the mobile, and if there is one, what this might be. The principle "Omne quod movetur ab alio movetur" requires only that everything in motion depend on some kind of mover other than the mobile itself, and this is true of every inertial motion at least with regard to its initiator.

To sum up: inertial motions and motions of mutual attraction or repulsion are always initiated by things other than the mobiles in question, whether by whatever generated them or projected them or removed impediments to them. Hence the principle *Omne quod movetur ab alio movetur* is preserved, and the objection fails.

6. WHAT IF NOTHING CAUSES THE MOTION?

Is it really the same thing to say that nothing is the cause of its own motion and to say that something else is the cause of its motion? What if nothing is the cause of the motion, that is, what if a motion needs no cause at all?

The so-called Principle of Sufficient Reason is in question here. It has been formulated in various ways, such as "Nothing comes from nothing," or "Whatever comes into existence needs a cause." Aquinas takes it as something known through itself that "It is necessary that

everything new should have a cause."[29] If this is true and known through itself, then evidently every motion would require a cause, since every motion involves continuous innovation. (This is especially clear of motions that begin after a rest, or after a contrary motion, as it seems all do—there do not appear to be any motions in existence which have always been going on and never began.) Accordingly, if a mobile cannot cause its own motion, then there must be some cause for its motion outside itself.

But the Principle of Sufficient Reason has been rejected by some philosophers as unknowable, and by others as not being a necessary truth.

David Hume believed he had shown it not to be a necessary truth, that the contradictory statement involves no contradiction in itself or any absurdity. He argues as follows:

> 'Tis a general maxim in philosophy, that *whatever begins to exist, must have a cause of existence* . . . But here is an argument, which proves at once, that the foregoing proposition is neither intuitively nor demonstratively certain . . . [A]s all distinct ideas are separable from each other, and as the ideas of cause and effect are evidently distinct, 'twill be easy for us to conceive any object to be non-existent this moment, and existent the next, without conjoining to it the distinct idea of a cause or productive principle. The separation, therefore, of the idea of a cause from that of a beginning of existence, is plainly possible for the imagination; and consequently the actual separation of these objects is so far possible, that it implies no contradiction nor absurdity.[30]

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[29] *Summa Contra Gentiles*, III.89. See also *Contra Gentiles* I.13, near the end of the argument about motion, where Aquinas affirms that "Omne quod de novo fit, ab aliquo innovatore oportet sumere originem."

[30] See *A Treatise of Human Nature*, Book I: *Of the Understanding*, Sect. III: *Why a Cause is Always Necessary*. Edition: Penguin Books, Baltimore, Maryland, 1969, pp. 126-127.

Hume takes it as a principle that if the imagination can present one thing without presenting another, there is nothing impossible about the one thing existing without the other. And since the imagination can represent something popping into existence without representing any kind of cause, it follows that something can in reality pop into existence without any kind of cause.

Hume's main principle, however, is manifestly false. The truth is that we can often imagine A without imagining B even when A cannot possibly exist without B. It is possible to imagine the act of running without imagining the ability to run—does it follow that the act of running can actually exist apart from one who has the ability to run? It is possible to imagine a sphere without imagining any particular material out of which it is made—can a sphere then exist in reality which is not made of any particular material? It is possible to imagine water without imagining it to be composed of hydrogen and oxygen—can water therefore be without these? In each case we can imagine one thing without another, although the one cannot really exist without the other. Therefore, although we can imagine a new event without imagining any cause for it, it does not follow that a new event can actually be without a cause.[31]

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31 The intellect must often correct the errors of the imagination, as when the imagination leads us to believe that a straight line can be interposed between the circumference of a circle and its tangent (See Euclid's *Elements*, Book 3, Theorem 16). Consequently, if the intellect can grasp A without grasping B, even though A and B cannot exist apart from each other, *a fortiori* would we expect this to happen with the less-trustworthy imagination. But the intellect can grasp what 28 is without grasping that it is a perfect number, although 28 cannot be without being a perfect number. Hence the intellect can grasp things apart from each other which cannot possibly exist apart from each other. Why should the imagination be different? In fact, since Hume believes the intellect and the imagination are identical, it follows from his position that since we can "imagine" 28 without "imagining that it is a perfect number," therefore 28 can exist without being a perfect number.

The real principle at work in Hume's argument is that *Whatever we can imagine is possible*.[32] This has an apparent plausibility, because there is some sense in which we cannot imagine the impossible. Can we imagine a square circle? Clearly not, and the reason appears to be that the square circle itself is impossible. Hence a more thorough resolution of Hume's argument requires some reflection on what is "imaginable."

"What we can imagine" has more than one sense, just as "what we can see" has more than one sense. I can see colors and shapes and motions in one sense, and in another sense I can see the things to which these belong—as when I say "I see my son." My son is not a color or a shape or a motion, but when I see his colors, shapes, and motions I am simultaneously aware of him as the subject of these, and so I say that "I see him," although he makes no separate impression upon my eye over and above his colors, shapes, and motions through which I am aware of him. Similarly, I can imagine shapes and colors and motions in one sense, but in another sense I can say that I imagine the things to which these belong—such as my children—although I form no separate image for these over and above those for their shapes, colors, and motions. Things such as shapes, colors, and motions are said to be imagined *per se*, or in themselves, whereas things like my children are said to be imagined *per accidens*, since we form no separate image for these, but rather these are imagined through imagining the things that belong to them.

It might[33] be true that "What we imagine *per se* must be possible." That is, if we can imagine a pattern of shapes, colors, and motions,

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[32] See *A Treatise of Human Nature*, Book I, Part IV, Section V (p.298): " 'tis an evident principle, *that whatever we can imagine, is possible*."

[33] I say "might" because one might say that we can imagine, *per se*, a circle and its tangent and a straight line interposed between them, and yet that is not really possible. But this is due to a certain lack of exactness in the imagination's power of representation.

then similar such patterns must be possible in reality, too—at least on a television screen. But it is not true that "What we can imagine *per accidens* must be possible." That is, if we can imagine a combination of shapes, colors, and motions, it does not follow that the things normally subject to such qualities can really be combined (or separated) in a corresponding way, since what is possible for the accidents, imagined apart from the subjects, might not be possible for the subjects of those accidents. Hence we can in some sense "imagine" salt being mixed with water and turning into gold, and yet in so doing we are imagining the impossible—that is, although the patterns of colors and motions might in some way be possible, the changing of salt and water into gold by mere mixing is not possible, and in the *per se* sense is never really imagined, either.

Now a cause as such is not imaginable *per se* any more than it is sensible *per se*. Even less is "the fact that there is no cause" imaginable *per se*. And hence, although we might be in some sense said to "imagine that there is no cause for some event," it will not follow from this that it is actually possible that there is no cause for some event. Hume's argument is therefore an illusion.

In fact, the sophistry does not end there. Reflection proves that the imagination cannot satisfactorily represent the difference between a cause we happen not to see, and the non-existence of a cause. Suppose a blue precipitate suddenly forms within a clear liquid because of an unseen (and even unknown) cause—now suppose the same thing happens due to no cause at all. Does the imagination present us with any difference between these two very unlike scenarios? Not at all. In other words, the imagination cannot really in any distinct way imagine "there is no cause"—it can only fail to imagine a cause. But "not imagining a cause" is not the same as "imagining there is no cause," anymore than "not seeing the cause" is the same as "seeing that there is no cause." In other words, even were we to grant to Hume that what the imagination can represent must be possible in reality, his conclusion would not be the correct one. What the imagination can

represent is "an event for which we see no cause," which is indeed possible in reality, but this is not his conclusion.

William Rowe also rejects the axiom that what begins to be needs a cause, although not on the grounds that it is not necessarily true, but on the grounds that it is unknowable:

> Because the premises of the Cosmological Argument rest on a principle—the Principle of Sufficient Reason—that appears to be unknowable, I concluded that the Cosmological Argument is not only not a proof for me, it is not a proof for anyone.[34]

Rowe's reason for thinking the principle in question is unknowable is that it appears to be neither demonstrable, nor known through itself. That it is not demonstrable I concede, and I believe Aquinas would agree. That it is not known through itself, however, Rowe attempts to show on the grounds that it is not "analytically true," which is to say that the principle is not "analytic" in Kant's sense.[35] In short, Rowe is of an analytic tradition which affirms as true beyond all doubt that *Any universal statement whose truth is known to us with certainty is either "analytic" or else it is derived from "analytic" statements.* Unfortunately for Rowe, this statement itself, upon which his critique of the Principle of Sufficient Reason absolutely depends, is neither analytic nor derivable exclusively from analytic statements, and hence, according to itself, is unknowable. After all, for a statement to be knowable to us with certainty does not *mean* "its predicate is part of the very meaning of its subject" (as happens when we say "Every bachelor is unmarried"). There are, in fact, necessarily true and universal statements known to us with certainty and without proof which are not of this kind.[36] A trivial example: A pair of triangles

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34 *The Cosmological Argument*, William L. Rowe, Princeton University Press, Princeton, New Jersey, 1975, p.268.

35 *Op. cit.*, p.83 ff.

36 Aristotle agrees: "As there are some indemonstrable basic truths asserting that 'this is that' or that 'this inheres in that,' so there are others denying that 'this is

with all their sides and angles correspondingly equal must also contain equal areas. This truth is known to us without proof, and yet the predicate is not part of what is meant by the subject. To have sides and angles equal means to have sides and angles equal; it does not mean "to contain equal areas." Nonetheless, once the subject is correctly grasped, it is impossible not to know that the predicate belongs. The analytic argument against the self-evidence of the Principle of Sufficient Reason is therefore unsound.

Very well, but one may reasonably ask why the principle that *What begins to be needs a cause* should be regarded as known through itself. After all, if one pleases one could say about any statement at all "It is *per se notum*; it needs no proof." Are there any signs by which to judge that a statement is among those *per se nota*, and is not a mere hypothesis?

There are indeed. One sign that the First Axiom (namely that nothing both is and is not at the same time etc.) is in fact a self-evident axiom is that even those who deny it in words show that they accept it in their thought, albeit unwittingly. In their very act of trying to reject it, they show that they accept it, since (1) they usually reject it because they think they have found something which *contradicts* it (and contradictions are unacceptable!), and (2) they insist upon disagreeing, as if they were right and their opponents were wrong, and both sides cannot be right (since they contradict). Again, those who resist the idea that reason should be the ruling part in a human being typically show that they accept this principle in the very act of trying to reject it: "Why should reason rule?" they demand to know, as if to say "I cannot accept the authority of reason until you show me how that agrees with reason—since that is the only authority I recognize." Similarly, those who reject the principle that *What begins to be needs a cause* invari-

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that' or that 'this inheres in that,'" Aristotle, *Posterior Analytics*, I.23 84b30, G. R. G. Mure Trans., in *The Basic Works of Aristotle*, ed. Richard McKeon, Random House, New York, 1941, p.146. See also Aquinas's commentary.

ably show in their thought, both speculative and practical, that they really accept it. They never seriously entertain the notion that the graffiti on the side of their house might simply be a "brute fact" without explanation, having simply appeared there during the night; they know someone is responsible. Hume will not allow that ideas simply appear in our heads—he is certain that they must derive from sense impressions. Those rejecting the principle that *What begins to be needs a cause* think they know, with certainty, that no one can have a sudden intuition of the truth that *What begins to be needs a cause*. Knowledge does not simply pop into people's heads. They demand an explanation for this knowledge: it must be known because of an argument, or because the predicate is in the definition of the subject, or for some kind of intelligible reason. In other words, their motive for taking issue with the principle *What begins to be needs a cause* is the fact that they unwittingly accept it.

Ironically, this sixth objection to the First Way strikes at the very thing about it which makes it *manifestior*. The Second, Third, and Fourth ways do not begin from motion, which most manifestly needs a cause. Aquinas says that "Everything which was not always manifestly has a cause; whereas this is not so manifest of what always was."[37] But in all motion there is something which was not always. Motion itself, because of the novelty in it, gets our attention—we wave our hands to be seen, and sit still to avoid being noticed.[38] And once we notice something new, something changed, we spontaneously seek a cause, much more convinced that there must be one than when there is no change.[39] It is a rare soul who wonders why a house that has

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37 *Summa Theologiae*, I Q46 A1 Ad6.

38 "Things in motion sooner catch the eye than what not stirs," as Shakespeare put it (*Troilus and Cressida*, Act 3, Scene 3, Line 177).

39 David B. Twetten remarks that the First Way "is most evident because change most reveals the character of an effect. For, change reveals a potency's going into act. But no thing as in potency goes into act or acts on its own, since what is in potency *as such* does not even exist." "Clearing a 'Way' for Aquinas: How

long been in existence now continues to exist in its same accustomed condition—unless it was on fire the last time he saw it. But no one fails to see that a new house going up in the neighborhood is due to a productive cause, even if neither he nor anyone else among his neighbors has seen the work being done.

7. NEED THERE BE A FIRST MOVER?

No mover familiar to us is a first mover absolutely, since each was generated in the past by motions and changes due to prior movers. Hence we cannot know of the existence of a first mover unless we can prove that there must have been a first mover in time, that is, unless we can prove that motion began at some point, prior to which no motion existed. Now Aristotle believed the contrary to be the case, and Aquinas did not believe it possible to prove philosophically that the world or motion had a beginning in time.[40] *Hence it appears that on Aquinas's own view it is impossible to know the existence of a first mover. Moreover, even if we grant that a first mover had to initiate all the causally connected motions spread out over time, there will be no way to assure ourselves that this first mover still exists. A man might initiate the human race and then immediately die—the continuing generation of human beings today is no evidence that Adam lives. Hence the First Way fails.*

Either a series of causes has a first and is finite, or else it has no first and is in some way infinite. The key to unraveling this difficulty, therefore, begins with a distinction regarding what kind of series of

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the Proof from Motion Concludes to God," *Proceedings of the American Catholic Philosophical Association*, Catholic University of America, Washington D.C., Vol. 70, 1996, p.270.

40 See *Summa Theologiae* I Q46 AA1-2.

causes can be infinite, and what kind cannot be infinite but requires a first. On that point, Aquinas has this to say:

> According to the philosophers, it is impossible to proceed into infinite agent causes in causes acting all at once, because it would be necessary that the effect depend on the infinite actions existing all at once. And such causes are infinite *per se*, because their infinity is required for the thing caused. But in causes not acting all at once, this is not impossible, according to those who posit perpetual generation. This infinity just happens to the causes: for it merely happens to the father of Socrates that he is the son or is not the son of another man. But it does not merely happen to the stick, inasmuch as it moves the stone, that it is moved by the hand, for it moves inasmuch as it is moved.[41]

At first one is tempted to distinguish between series of causes that act "all at once" and those in which one cause acts after another in time—infinity being impossible in the first kind of series but possible in the second. A closer reading of this passage, however, reveals that it is not simultaneity as such that makes an infinity of causes impossible, but the condition that "such causes are infinite *per se*, because their infinity is required for the thing caused." Another passage on the same topic sheds more light:

> In efficient causes it is impossible to proceed to infinity *per se*—such as if the causes which are *per se* required for some effect were to be multiplied into infinity; as if the stone should be moved by a stick, and the stick by the hand, and thus into infinity. But to proceed *per accidens* into infinity in agent causes is not thought impossible; as, for example, if all the causes which are multiplied into infinity should hold the order of only one cause, and their multiplication were *per accidens*; just as a builder acts by many hammers *per accidens*, because one after another is broken. And so it happens to this hammer that it acts after the action of another hammer. And likewise it happens to this man, inasmuch as he generates,

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41 *Summa Contra Gentiles*, II.38.

> that he was generated by another: for he generates as a man, and not inasmuch as he is the son of another man; for all men generating hold the same rank in efficient causes, namely the rank of a particular generator. Whence it is not impossible that man should be generated by man to infinity. But it would be impossible if the generation of this man were to depend on this man, and on an elementary body, and on the sun, and so on to infinity.[42]

Simultaneity of operation among the causes in a series is important only insofar as this is a sign of something else, namely that the causes in question are not causes of the same rank, that their order is not primarily a temporal order. The painter and his paintbrush have an irreversible order as causes of the painting, an order which is more than just temporally irreversible. The painter is a self-moving mover, the brush is merely his instrument, a purely moved mover. The painter can in no way be the instrument of his brush. A series of dominoes knocking each other down, on the contrary, have an order that is largely spatial and temporal—the dominoes near the end could just as well have been near the beginning. This is why Aquinas reasons as he does in the *Compendium Theologiae*:

> We see that all things which move are moved by others: inferior things by superior ones, as the elements by the heavenly bodies, and among the elements that which is stronger moves that which is weaker; and among heavenly bodies also the inferior are acted upon by the superior. Now it is impossible for this to proceed into infinity. For since everything that is moved by something is as an instrument of the first mover, if there is no first mover, all the things which move will be instruments. But it is necessary, if one proceed to infinity in movers and things moved, that the first mover not exist. Therefore all the infinite movers and things moved will be instruments. But it is ridiculous even to

[42] *Summa Theologiae*, I Q46 A2 Ad7.

> the unlearned to posit that instruments are moved not by any principal agent.[43]

The need for a first cause is seen from the nature of the secondary cause which functions like an instrument or, as it was put in the passage above, like a "particular generator." However many of these there are, whether finite or infinite, it is impossible that they should be the only kinds of causes at work. It is impossible, for example, that every teacher of the Pythagorean Theorem was always a teacher who was taught the Theorem by a prior teacher. In advance, we cannot specify any maximum finite number of "taught teachers" of the Theorem, and so there is a kind of infinity possible there. But if every teacher of the Theorem was taught by a prior teacher, it would follow that no one discovered the Theorem, and hence the mathematical demonstration itself would have no author and no cause—like a story that was always handed down, which no one authored, but was always told by someone to whom it had been told by someone else. And therein lies the impossibility.

Now, in the case of a Theorem or a story, if the author is human then such a thing must have had a beginning in time, since human beings live and act in time. And therefore, too, there must in fact have been a first person who knew the Theorem, and a finite number of go-betweens since that time and the time my teacher taught me the Pythagorean Theorem. Nor is there any necessity in supposing that the discoverer of the Pythagorean Theorem still exists. But none of that will follow in the case of a universal cause of motion.

Like the case with the Theorem, we need an explanation not only for why motion exists in this thing here and now, but why motion exists at all rather than not. A "taught teacher" can explain why there is knowledge of the Pythagorean Theorem in this student, but not why there is knowledge of the Theorem at all—the fact that the "taught

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[43] *Compendium Theologiae*, Ch.3.

teacher" knows it presupposes, and does not explain, that his teacher knew it. Nor can all of the "taught teachers" through history, taken together, explain the existence of the Pythagorean Theorem—there is no sense in which this succession of taught teachers authored or discovered the Theorem; the existence of their succession presupposes such a Theorem rather than producing it. Similarly the succession of particular causes of motion, of things which cause motion by means of their own motion, and which were generated as the result of certain motions, cannot possibly be the cause of the existence of motion as such and universally. Such a series of causes presupposes and is made possible by the existence of motion, rather than being the cause of it. The fact that motion exists at all cannot be explained by such causes, whether they are finite or infinite, but another kind of cause must be introduced whose operation does not presuppose any kind of motion. For having motion is like having been taught, since all motion is caused by something other than the thing in motion.

Unlike the case with the Pythagorean Theorem, however, the reason why motion exists at all, the first mover, need not have begun motion at some point in time. There is no special reason to think that it would have to be like a human discoverer of a theorem, a being that acts within time. In fact, that would be impossible, since time itself cannot exist apart from motion. The universal cause of motion, then, whose action in no way presupposes or involves motion, would necessarily be also the universal cause of time, and would therefore not act within time. Supposing then that it had caused an everlasting motion that never began and will never end—like the circular motion of Aristotle's heavenly spheres—the universal cause of motion could thereby be the cause of an infinity of generations that never began, and hence of a succession of moved movers which are all of a secondary type of causality, while there is no first mover within their own series temporally speaking. Although this is not necessarily the case (the unmoved mover could also have *begun* time and motion), and is

"hardly intelligible,"[44] nonetheless it does not appear to involve any real contradiction—and hence we cannot conclude that just because motion needs a first and unmoved mover, therefore motion began in time. Nonetheless, we can be sure that motion depends on an unmoved mover, just as we can be sure that a story depends on an untold teller.

Unlike the case with the discoverer of a theorem, too, the unmoved mover, the universal cause of motion, could not possibly have ceased to exist by now. The initiator of the Pythagorean Theorem need only not have been taught that Theorem, but he could have been taught other things, and he could have suffered any number of other kinds of changes, including death. But the universal cause of change cannot suffer any kind of change, and hence cannot cease to be. If the first mover had ever come into existence, for example, then it would have resulted from motion or change, and therefore could not be the universal reason why motion and change exist—and hence it could not be the first mover. And if it could cease to be, it would follow that its being is in time, whereas its being is not in time, since time is the product of its action—and therefore it cannot cease to be.

To sum up: Aquinas maintains both the philosophical possibility of an infinite series of particular movers that never began in time, and also the necessity of a first and unmoved mover whose action is outside of time, and who therefore might be the cause of all motion either by having eternally produced motion, or by having begun motion and time. Whether the unmoved mover began motion and time or caused them eternally, an unmoved mover there must be—or else there would be no reason why motion exists at all rather than not.

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[44] Aquinas himself, while admitting the philosophical possibility of our world not having begun in time, describes this possibility as "barely intelligible": "For they wish the world to have a beginning not of time, but of its creation, so that in some barely intelligible way it was always made." *Summa Theologiae* I Q46 A2 Ad1.

Accordingly, there is no need to prove that time began in order to see the necessity of there being a first mover, and the objection fails.

In this way, too, we solve a difficulty about the First Way's apparent dependence upon our experience of simultaneously acting movers. Some have said that since the argument cannot be showing that there is a first mover in time—which Aquinas does not believe possible to do philosophically—the argument must be showing that there is a first mover in a series of causes all acting at once. This occasions some confusion, since people do not easily find chains of simultaneously acting causes producing generation and motion,[45] for example they do not see that the generation of this man depends "on this man, and on an elementary body, and on the sun" acting all together.

As explained above, however, it is not simultaneity as such that necessitates the existence of a first mover prior to the proximate mover, but the fact that the proximate mover belongs to the rank of "a particular generator" or "an instrument." If we see causes acting simultaneously, as when a man produces a painting with a brush, or moves a stick with a stone, this serves to emphasize that the order among them cannot be a temporal one, but must be a kind of essential ranking by their type of causality. But what if we do not see any prior mover using the proximate mover as a kind of instrument, as when a man generates a man? How do we know that the proximate mover is in fact not a first mover? (And notice, our experience must eventually stop at a mover which is not in fact a first mover, but whose prior

[45] W. Norris Clarke, S.J., raises this objection: "The famous Five Ways of St. Thomas for proving the existence of God seem to me, *in their present textual form*, the least adequate part of his metaphysics and certainly the least relevant for the contemporary philosopher. The first two, from motion and causality, are formally valid if the proper latent premises are supplied, but have no literal application to our world since there are no *simultaneous* causal chains in our material cosmos," *Explorations in Metaphysics: Being – God – Person*, University of Notre Dame Press, Notre Dame, Indiana, 1994, p.27.

mover we cannot see, since the true first mover, God, can never be seen—or else the First Way would not be necessary!) As long as it causes motion by means of motion, a mover must be a mover of secondary rank, since everything in motion is moved by another, whether while it is moving, or in the sense that its own motion was initiated in the past. Similarly, every "taught teacher" is a teacher of secondary rank, since every taught teacher is taught by another. The need for a first mover, in other words, is seen by the dependence of the proximate mover upon motion, not by actually seeing (in experience) a more principal mover which is using it as an instrument. And hence we may end this response with the words of the objector himself: *No mover familiar to us is a first mover absolutely, since each was generated in the past by motions and changes due to prior movers.*

8. WHAT BEGINS A CHANGE MUST FIRST BE CHANGED

In any change there is something new that did not exist before, but which now begins to be. The cause of this change, therefore, is now causing this new thing to be, but it was not causing it before. Therefore this cause of change has begun to cause something, and accordingly has itself changed from not causing to causing. Every cause of change, accordingly, must be changeable, and so a mover who causes motion not in virtue of his own motion is impossible. Hence there can be no unmoved mover.[46]

Aquinas himself responds to this kind of objection:

> To those objecting thus, it lies hidden that this objection proceeds from an agent in time, that is, one which acts in a presupposed time; for in an action of the sort which comes about in time, it is necessary to consider

[46] This is the heart of Kant's fourth antinomy: "Now this cause must itself begin to act, and its causality would therefore be in time." *Critique of Pure Reason*, Fourth Conflict of the Transcendental Ideas, Proof of the Antithesis, translated by Norman Kemp Smith, St. Martin's Press, New York, 1965, p.416.

> some definite relation to that time or to one of the things which are in that time, in order that it might come to be in this time rather than in that one. But this reason has no place in the universal agent, which produces also time itself together with other things.
>
> For when we say: *things were not always produced by God*, we do not understand an infinite time to have preceded in which God refrained from acting and after a definite time began to act, but that God produced time and things together in being after they were not. And thus there does not remain to be considered in the divine will why it willed to make things not then but afterward, as if in an already-existing time; but only this is to be considered, that it willed that things and the time of their duration would begin to be after they were not.[47]

One might imagine that whatever acts here must have shape and size, because otherwise it could not be here. But "acts here" can mean either (1) its action influences what is here, or (2) its action is conditioned and contained by being here. The conclusion that the agent must have shape and size follows only from (2), not from (1), unless one were to assume that everything influencing what exists in place must itself exist in place—which is neither self-evident nor demonstrable, and is in fact false.

Similarly, one might imagine that whatever acts now must have in its own action a succession corresponding to the succession in what it causes now. But "acts now" can mean either (1) its action influences what is now, or (2) its action is conditioned and contained by being now. The conclusion that the agent must have succession in its action follows only from (2), not from (1), unless one were to assume that every action influencing what occurs in time must itself occur in time—which is neither self-evident nor demonstrable, and is in fact

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[47] Aquinas, Commentary on Aristotle's *Physics*, Book VIII, Lectio III. For more on why God's eternal and changeless causality need not produce an eternal effect, see *Summa Contra Gentiles* II.35, *Summa Theologiae* I Q46 A1 Ad6, and *Quaestiones Disputatae de Potentia* Q3 A17.

false: the first cause of motion, we saw, must also be the first cause of time, and as its action cannot consist in motion or presuppose it in any way, so its action cannot occur in time or presuppose it in any way, but simply produces it.

Such an objector, then, is misled by imagination, since we cannot imagine anything apart from the continuous and time.

A natural mover must act as soon as it is able, and the beginning of its effect argues the beginning of a new disposition within the mover itself, or at least a new relation to what it can act upon. A fire, for example, cannot burn paper if it is too far away: its beginning to burn the paper, then, is proof that the fire has a new spatial relation to the paper, and that the fire is itself a changeable thing. But a voluntary mover need not act when it is able, but when it wills—and hence the first mover must be a voluntary mover. Nor does the beginning of its effect argue a change from being unwilling to being willing, since a change in the thing willed does not mean a change of mind. For example, I can changelessly will that a certain routine of changes occur in my house every day. To will that changes take place is one thing; for the will itself to change is another.[48]

This objection, interestingly, poses less difficulty on the "barely intelligible" supposition that motion never began, but rather the first mover has been causing it eternally. On that supposition, the first mover does not appear to have "changed his mind." But on the supposition that the first mover initiated all motion, and motion did not always exist, the objector falsely imagines an endless duration of time prior to the beginning of things in which the first mover hesitated to act and had to choose a time in which to begin his action. On this very hypothesis, however, this way of imagining things is self-contradictory, since the first mover began motion, and therefore time as well. To say that time began to be "after" it was not obviously does not

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[48] Cf. *Summa Theologiae* I Q19 A7 C.

mean there was some time before, for then time existed before it ever existed. The meaning is purely negative: there was nothing of creatures before, not even time. There was God, to be sure, but he was not "before" things by being earlier in some time, since he is not in time, but produces it.

The objector can make one last appeal: whether or not these claims about the unmoved mover are true, they have not been demonstrated in the First Way.

Reply: none of these claims are laid down here as proved, but as *not disproved* by the objection above. The objection above cannot conclude unless all of these statements about the unmoved mover are false, and so the objector must first prove them false, or else his objection fails. In truth, since there must be a first mover, it follows that the first mover is a voluntary agent, and one that acts outside of time, for the reasons given. The cause of objection to this is not, at bottom, an argument, but an unwillingness or inability to think about things which cannot be imagined.

9. NOT EVERY UNMOVED MOVER IS GOD

The First Way fails if it does not arrive at the existence of something with attributes unique to God. If it proves the existence of a mover, for example, this is not enough, since there are movers which are not God. But the First Way proves that there is an unmoved mover, whereas there are (or might be) unmoved movers which are not God. It is for this reason that Aristotle, in his Metaphysics, after proving the existence of unmoved movers, and supposing many of these to exist, goes on to prove the existence of Pure Act, which is God. According-

ly, the First Way does not go far enough, and fails to reach a being of uniquely divine description.[49]

Aristotle's arguments throughout the *Physics* and *Metaphysics* consider motion in the strict sense, and in fact consider principally local motion. The First Way, on the other hand, does not begin from the definition of motion in the strict sense, namely "the act of what is in potency insofar as it is in potency."[50] Motion in this sense is always of some continuous duration, as we see in alterations and locomotions. The only definition of motion operative in the First Way, however, is the one implied when Aquinas defines *movere*: "Movere enim nihil aliud est quam educere aliquid de potentia in actum."[51] If this is what it means to move a thing, then for a thing to be in motion or be moved means for it *to be reduced from potency to act*. This will include instantaneous changes, such as substantial changes, and also spiritual changes, as when an intellectual substance changes its mind.[52]

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[49] David B. Twetten raises this objection, and understands its resolution in much the same way as I do. See "Clearing a 'Way' for Aquinas: How the Proof from Motion Concludes to God," *Proceedings of the American Catholic Philosophical Association*, Catholic University of America, Washington D.C., Vol. 70, 1996, p.270.

[50] "Most fittingly does the Philosopher define motion, saying it is ... the act of what exists in potency according as it is such." Commentary on Aristotle's *Metaphysics*, Book III, Lectio II, n. 562 Pirotta edition.

[51] *Summa Theologiae*, I Q2 A3 C, First Way.

[52] Wippel agrees: "I am inclined to limit motion as it appears as the starting point of the first way to some form of motion taken strictly, but to suggest that in the course of justifying the principle of motion – whatever is moved is moved by something else – St. Thomas uses motion broadly enough to apply to any reduction from potentiality to actuality." *Op. cit.*, p.446. The "starting point" of the First Way must be motion taken in the strict sense, as we can see from the way the argument begins: "For it is certain, and stands firm to the senses, that some things are in motion in this world." Substantial changes are not *per se* sensible, since substances themselves are not, and likewise the spiritual changes within ourselves are not sensible. Hence, the motion from which the First Way

Aristotle's plurality of unmoved movers,[53] or Aquinas's angels, are not subject to motion in the strict sense, being incorporeal. But since they are not pure act,[54] nothing prevents them from being subject to spiritual changes in virtue of which they act as movers.[55]

Since all things other than God are subject to motion in the broad sense of a reduction from some kind of potency to some kind of act, and it is in virtue of this that they can cause change in other things, the corresponding sense of "unmoved mover" belongs to God alone. The seventh and eighth objections above prove helpful here: an unmoved mover would have to be such as did not act in time, but rather produced it, lest it itself begin to act after not acting, and hence become a mover who is somehow reduced from potency to act, and thus not a first and universal mover. But a mover whose action is forever the same and outside of time, and who yet causes things to move and exist in time, must be God.

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begins, namely sensible motion, must be motion taken in the strict sense, and especially local motion.

53 Aristotle guesses that there are anywhere from 47 to 55 unmovable substances. See *Metaphysics* XII.8, 1074a10-15.

54 That Aristotle thinks there is only one substance which is pure actuality is evident from *Metaphysics* XII.8 1074a33 ff: "That there is one heaven is manifest. For if there were many heavens, as there are men, there will be one [motive] principle for each, and these will be one in species, but many in number. But things which are many in number have matter. For there will be one and the same definition (as of man) of the many, whereas Socrates is one. But what-it-was-to-be does not have primary matter: for it is actuality. Therefore the first immobile mover existing is one, both in definition and in number, and therefore what it moves is always and continually only one. Therefore there is only one heaven."

55 When angels cause changes in bodies that exist in place, they undergo a kind of change within themselves by applying their power here rather than there, which they must do since their power cannot embrace all things at once. See *Summa Theologiae* I Q52 A2 and I Q53 A1. See also I Q58 A1 on how the angelic mind is in potency and must be reduced to act.

None of these considerations are necessary in order for the First Way to reach its conclusion, of course. It is sufficient for the First Way that the description "unmoved mover" be uniquely divine. If "motion" is taken in the strict sense, then even the human soul is in some way an unmoved mover, whereas if it is taken in the broad sense of any reduction of potency to act, as it seems to be taken in the First Way, then God alone is an unmoved mover.

10. NOT ALL UNDERSTAND AN UNMOVED MOVER TO BE GOD

An argument for the existence of God fails if it does not arrive at the existence of something with attributes recognizably divine, even if it arrives at something with attributes unique to God. For example, if someone shows that there exists an uncaused being, this does not prove God exists, even though it is true of God alone that he is an uncaused being: someone might suppose that matter is an uncaused being which always existed, but could still be an atheist for all that. The First Way, however, arrives at an unmoved mover, and although this description is true of God alone, it appears inadequate as a description recognizably divine. A recognizably divine being must be one that is at least intelligent, and perhaps also infinite in some way. Hence the First Way fails.

When Aquinas at the end of the First Way reaches a first mover, which is moved by no other, he concludes "et hoc omnes intelligunt Deum." Who are "omnes"? Chiefly the learned, among both Christians and non-Christians. The learned among the Christians know that God alone is the first source of motion and change, the initiator of all changeable things, and that he does not change.[56] And the pagan philosophers are the original discoverers of the arguments for the

56 "For I am the Lord, and I change not," Malachi 3:6.

principal unmoved mover. The learned among those who admit the existence of God, in other words, recognize God in the description "unmoved mover." To prove the existence of such a thing, then, is to have proven the existence of God to the satisfaction of such people.

Apart from such people, however, is there any reason to suppose an unmoved mover deserves the name "God"? If the name "God" is taken to mean "an omniscient being," then the First Way has certainly not gone far enough to manifest that the unmoved mover is such a thing. If the name "God" is taken to mean the being who intervened in human history as recounted in the Old and New Testaments, the First Way certainly has not shown that the unmoved mover has done such things. What, then, is the meaning of the name "God" which is common to the Five Ways, and which allows one to conclude reasonably after each that "God" exists?

In the *Summa Theologiae* Aquinas discusses the meaning of the name "God." In an objection,[57] he takes up the difficulty that the name "God" cannot name the divine nature, since that is unknown to us, whereas we name things as we know them. In his reply, Aquinas says we can know the nature of God, although not as it is in itself, but as the principle of certain effects. The name "God," then, signifies the divine nature as a principle of all things that is removed from all things and above all things. Any argument concluding to the existence of such a thing is an argument proving the existence of "God." Now the First Way proves the existence of an unmoved mover, which is a principle of change in all things, which is distinct from all things which are in need of motion in order to cause motion, and which is above all such things, giving them their agency and receiving its agency from none (or at least not by means of a change). Hence the First Way proves the existence of a being which deserves the name "God".

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[57] I Q13 A8, Objection 2.

It is no doubt true that the description of the being reached by the First Way is less recognizably divine than the descriptions used in the four arguments following it. Perhaps this is the price one pays for following a "manifestior via." The easier the *terminus a quo*, the more difficult the *terminus ad quem*; the more manifestly something is an effect, the less perfect and more particular a thing it will be (as motion is less perfect and more particular than being), and by just so much will the perfection and universality of the cause of it be less manifest, i.e. the less manifest will its divinity be.

If anyone were to insist that all the "usual attributes" of God be demonstrated to belong to the unmoved mover before admitting that God has been shown to exist, he could cut "Which all name God" from I Q2 A3 and paste it at the end of Question 26. But "For Aquinas, any name that exclusively designates the divine nature from effects will satisfactorily serve in answering the question whether God exists. All other properties beyond that name or names belong equally to the question what God is."[58]

CONCLUSION

There is no statement, be it ever so certain and self-evident, which one cannot attack with objections whose solutions are quite difficult. Every self-evident statement is subject to sophistical refutations, and by no means are all of them laughable. We cannot but expect, therefore, that genuine demonstrations, too, will be subject to objections not easily dismissed, and particularly those which conduct our minds as far as things like the first mover, which transcends our experience and imagination. The sheer number of difficulties that arise in the face of the Five Ways should not be any cause for scandal or alarm, then, but it ought to serve as a humbling reminder: however demonstrative such arguments may be in themselves, there will always remain room for improvement in our understanding of them.

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[58] David B. Twetten, *Op. cit.*, p.271.