

The Human Body as an Instrumental Cause of Actions in the Writings of Thomas Aquinas

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FLOWING FROM its Greek and Judeo-Christian roots, the idea that humans are composed of a body and a soul has been a mainstay of Western thought. Yet, how the soul and body are related has been the subject of much debate going back at least as far as Plato and Aristotle. In modern times, the relation between the body and soul is widely disputed, with many people completely rejecting the existence of the soul (known in philosophical circles as materialists or physicalists).¹ Although the materialist rejection of the soul is often based on deep philosophical assumptions, some contemporary materialists believe that the findings of modern neuroscience disprove the existence of the soul (or at least make speaking about a soul irrelevant).² They note that thoughts, feelings, and even love

¹ For an anthology that nicely shows this dispute, see *The Waning of Materialism*, ed. Robert Koons and George Bealer (Oxford: Oxford University Press, 2010). For a nice introductory philosophical work that explains and critiques both dualism and materialism and then expounds an Aristotelian hylomorphic view, see James Madden, *Mind, Matter, and Nature: A Thomistic Proposal for the Philosophy of Mind* (Washington, DC: Catholic University of America Press, 2013).

² For example, Nancey Murphy and Warren S. Brown state in the introduction to *Did My Neurons Make Me Do It* (Oxford: Oxford University Press, 2007): “Science can help direct philosophical arguments away from implausible alternatives; we believe that the role of developments in neuroscience (e.g. functional brain imaging studies) in persuading many philosophers of mind to abandon dualism is one of the most important examples” (6). Although Murphy denies dualism, she does not consider herself a reductive materialist. Francis Crick (a scientist who helped discover the structure of DNA) argues that just as modern science shows that many views held by ancient humans are false, so modern biology also shows

can be measured though physiological changes in the body. For example, electroencephalography (EEG) can measure brain waves, and by studying this and other forms of biofeedback, scientists can tell a lot about what a person is thinking and feeling. From these scientific advances a materialist might argue that modern neurobiology, endocrinology, and psychology can explain all the actions formally attributed to the soul. Furthermore, these actions can be mapped to different functions and parts of the brain and body with the conclusion that there is no integrated self (or soul) underlying actions such as thought or free choice.³

These scientific discoveries might be a challenge to someone who believes the body and soul to be two distinct substances (similar to Descartes).⁴ However, a person with a proper hylomorphic understanding of the relation between the body and soul, should not be troubled by these scientific findings. In fact, not only do these scientific findings not disprove the existence of the soul (or make it irrelevant), those with a proper understanding of the relation between the body and the soul would expect science to discover that the body causes human actions. This article will examine Thomas Aquinas's understanding of the body as the instrumental cause of actions in order to help explain both the role of the soul and the body within human actions. This essay is not meant to convince the materialist that a soul exists, but it should show that it is quite rational to both believe the findings of modern neuroscience and hold that the human soul

that there is no need to posit the existence of a soul, further noting that most neurobiologists do not believe in a soul (*The Astonishing Hypothesis: The Scientific Search for a Soul* [New York: Touchstone, 1994], 3–7).

³ See, for example, Patrick Haggard, "Does Brain Science Change Our View of Free Will," in *Free Will and Modern Science*, ed. Richard Swinburne (Oxford: Oxford University Press, 2011), 7–24. In this work, Haggard does not specifically state the conclusion as strongly as I do in the argument given in the present text, but he does conclude: "Conventional metaphysics of free will invokes an 'I' to consciously initiate willed actions. Instead, neuroscience emphasizes that 'freely willed' actions may simply have a more complex set of causes than simpler actions. Nevertheless, these causes are not special in any particular sense: they simply reflect the flexibility and complexity of our response to the environment" (23). In opposition to this view, see William Hasker, *The Emergent Self* (Ithica, NY: Cornell University Press, 1998). Hasker argues for a unity of consciousness within humans.

⁴ This "substance" dualism that can especially be found in Descartes (although in some form it already existed in Plato and in gnostic philosophy) continues to have a widespread acceptance in popular culture. Among recent philosophers, Richard Swinburne is a proponent of this view. Modern scientific findings will challenge substance dualism if it is believed that the body and soul are two competing or partial causes of the action of the person. In this view, if the body is the cause, then there is no need for the causality of the soul.

exists. In order to make these points I will explain four essential aspects of Thomas's understanding of primary and instrumental causality and directly apply these concepts to the particular case of the relation between the body and the soul. This essay is only meant to introduce these ideas and hopefully stimulate other philosophers and theologians to work on this topic to apply it more thoroughly to contemporary debates.

As is well-documented, Thomas speaks of the soul as the form of the body. This is the hylomorphic view of the relation between the body and soul.⁵ What is less well-documented is that Thomas further explains the interactions between the body and soul by speaking of the soul as the primary cause and the body as the instrumental cause. In his commentary on *De anima*, Thomas comments on the following words of Aristotle: "For all natural bodies are *instruments* of the soul: whether of animals or of plants, they exist as for the sake of the soul." In his commentary on the passage Thomas states: "For it is evident that all such bodies are, as it were, *instruments* of the 'soul'—not only of animals' souls but of the plant soul as well."⁶ The language of the body as an instrumental cause comes from Aristotle, and Thomas will continue to use it throughout his corpus.⁷ Although the term instrumental cause can also refer to animal and plant bodies, the present article will be solely concerned with human bodies and souls.

To better understand what Thomas means when he says the body is the instrument of the soul, I will give some general background information on the Thomistic concepts of primary cause and instrumental cause. Although Thomas will often sometimes speak of primary and secondary causes rather than primary and instrumental causes, I will use the terms

⁵ For an explanation how a hylomorphic understanding of the soul overcomes many of the problems of materialism and substance dualism see Madden, *Mind, Matter, and Nature*, 251–86 (ch. 8).

⁶ Aristotle's text: "πάντα γὰρ τὰ φυσικὰ σώματα τῆς ψυχῆς ὄργανα, καθάπερ τὰ τῶν ζώων, οὕτω καὶ τὰ τῶν φυτῶν, ὥς ἐνεκα τῆς ψυχῆς ὄντα." Thomas's Latin: "Videmus enim quod omnia naturalia corpora sunt quasi instrumenta animae, non solum in animalibus, sed etiam in plantis" (*In II de anima*, lec. 7, no. 322, trans. Kenelm Foster, O.P., and Sylvester Humphries, O.P. [New Haven, CT: Yale University Press, 1951]; emphasis added; all English translation from *De anima* or *In de anima* is from this edition).

⁷ See also: *In I de anima*, lec. 2, no. 19; *In II de anima*, lec. 9, no. 348; *Summa contra gentiles* [SCG] IV, chs. 33, 41, and 73; *Summa theologiae* [ST] I, q. 78, a. 1. Translations of the SCG are by Vernon Bourke and Charles O'Neil (Notre Dame, IN: University of Notre Dame Press, 1975), and translations from ST are by the Fathers of the English Dominican Province (New York: Benziger Brothers, 1948).

“secondary cause” and “instrumental cause” synonymously.⁸ For Thomas primary and secondary causes are not competing causes but are causes on two different orders—where the primary cause moves the secondary cause to act.⁹ For example, Aquinas will speak of the craftsman moving and guiding the cutting tool (the instrumental cause) to make furniture (*Summa theologiae* [ST] III, q. 19. a. 1). In this example, the craftsman causes the action of cutting by moving the tool to cut. Both the craftsman and the tool are true and immediate causes of the cutting, but each in its own unique way.¹⁰

Aquinas speaks of secondary causality whenever something causes an action by participating in the power and guidance of a higher cause.¹¹

⁸ Technically, instrumental causality is a type of secondary causality, but this distinction is not necessary for the present essay.

⁹ See: ST I, q. 105; SCG III, ch. 70. See also Michael Dodds, O.P., *Unlocking Divine Action: Contemporary Science and Thomas Aquinas* (Washington, DC: Catholic University of America Press, 2012), 187–204, for more on primary and secondary causality in general. The distinction between primary and secondary causality is a different type of distinction from that between formal, material, efficient, and final cause. See Dodds, *Unlocking Divine Action*, 191–92, for a brief explanation. In relation to the formal, material, efficient, and final cause, there can be primary and secondary causality within each of these types of causality. For example, God is the first efficient cause of the actions of all created beings and created beings are the secondary efficient causes of their actions. Likewise, God is the first exemplary and final cause of the order and goodness in all things while subsisting beings are the secondary exemplary causes and secondary final causes of these things (in various different ways).

¹⁰ See SCG III, ch. 70, no. 5, where Thomas says that both God and the created being are immediate causes but each in its own unique way.

¹¹ The concept of primary and secondary causality in Aquinas is rooted in the concept of participation—where the secondary cause shares in the perfections that the primary cause has by nature. By doing this, Thomas has enriched the Aristotelian understanding of instrumental causality with the neo-Platonic concept of participation. See for example, *De potentia*, q. 3, a. 7: “Because an instrument is in a manner the cause of the principal cause’s effect, not by its own form or power, but in so far as it participates somewhat in the power of the principal cause through being moved thereby [Instrumentum enim est causa quodammodo effectus principalis causae, non per formam vel virtutem propriam, sed in quantum participat aliquid de virtute principalis causae per motum eius]” (trans. Dominican Fathers of the English Province [Westminster, MD: Newman Press, 1952; repr. of 1932]). For example, the perfection of wisdom in humans participates in the Wisdom of God (who is wise by nature). Hence, when a human acts wisely, he is a secondary cause of the wise act and God is the primary cause. For more on the metaphysical roots of primary and secondary causality see John Rziha, *Perfecting Human Actions* (Washington, DC: Catholic University of America Press, 2009), 57–62. See also ST I, q. 45, a. 5.

In his writings, the most common instance of primary and secondary causality is that of God causing actions through secondary causes (created beings).¹² Just as the craftsman moves and guides the saw to perform the action of cutting in accordance with the goal of the craftsman, God moves and guides the created being to perform actions in accord with his divine plan. Other examples of primary and secondary causality in the writings of Aquinas are the divine person (the Son) acting through the human nature of Christ (*ST* III, q. 19), God acting through the sacraments (instrumental causes of grace),¹³ and God supernaturally causing humans to perform divine actions by participation in his divine nature.¹⁴ Finally, Aquinas also speaks of the soul as the primary cause and the body as the secondary or instrumental cause.¹⁵

All of these instances, where Aquinas speaks of primary and secondary causality, have received treatment in contemporary North American scholarship with the exception of the relation between the body and the soul.¹⁶ This lack of treatment is understandable since Aquinas himself

¹² See, for example, *SCG* III, ch. 103, and *De potentia*, q. 7, a. 2.

¹³ See *ST* III, q. 62, aa. 1–5. See also the closely related concept of God working through ordained ministers who are instrumental causes of salvation (*SCG* IV, chs. 74 and 77).

¹⁴ E.g., *De potentia*, q. 3, a. 1. Although this is similar to God working through created beings in general, I mentioned it in particular because it is a different type of participation in divine nature—by the power of grace rather than nature. The mature Aquinas also specifically notes that there can be no secondary cause in the act of creation since an instrumental cause is moved in accord with its own power and hence cannot perform the infinite act of creation (*De potentia*, q. 3, a. 4).

¹⁵ Closely related to this he will speak of various ways that any elements or parts of a compound substance are instruments of the subsisting thing (e.g., *In I de anima*, lec. 2, no. 19).

¹⁶ For example, regarding God as first cause and humans as secondary causes, see Brian Shanley, O.P., “Divine Causation and Human Freedom in Aquinas,” *American Philosophical Quarterly* 72 (1998): 98–122, and Dodds, *Unlocking Divine Action*. Regarding the sacraments as instrumental causes, see Bernhard Blankenhorn, O.P., “The Instrumental Causality of the Sacraments: Thomas Aquinas and Louis-Marie Chauvet” in *Nova et Vetera* (English) 4, no. 2 (2006): 255–94, and Reginald Lynch, O.P., *The Cleansing of the Heart: The Sacraments as Instrumental Causes in the Thomistic Tradition* (Washington DC: Catholic University of America Press, 2017). Regarding the human nature of Christ as an instrumental cause of salvation, see Jean-Pierre Torrell, O.P., *Christ and Spirituality in St. Thomas Aquinas*, trans. Bernhard Blankenhorn, O.P. (Washington, DC: Catholic University of America Press, 2011), 92–96, and Thomas Joseph White, O.P., *The Incarnate Lord: A Thomistic Study in Christology* (Washington, DC: Catholic University of America Press, 2016). J. P. Moreland, in his presentation of a Thomistic substance dualism, does refer to the body as the instrumental cause and the soul as the

does not develop this topic extensively; rather, he assumes the reader already understands how the body is an instrumental cause of actions and hence uses this notion as an analogy to help explain other more complex cases of primary and secondary causality such as the human nature as an instrument of the divine nature of Christ. For example, in *Summa contra gentiles* [SCG] IV, ch. 41, Thomas considers a couple analogies for the relation between the human and divine natures in Christ. He notes that the analogy of the soul as form and body as matter will not work, since when applied to Christ, it would mean there is only one nature in Christ (which is false). However, the body is also the instrument of the soul, and this analogy can be applied to the relation between the human and divine nature, provided that one properly understands that the human body is a conjoined instrument (and not separate).¹⁷ In this passage Thomas assumes that the reader is well acquainted with the idea that the soul moves the body as an instrumental cause, and he does not need to spend time applying his rich understanding of primary and secondary causality to this particular topic. However, today, there are vast disagreements on the relation of the soul and body, and this application could be helpful in overcoming some of these disagreements. The present essay is only meant to give some of the basic ideas in hopes of encouraging someone to write a much more detailed analysis of the topic.

Having given some background information, I will analyze Thomas's understanding of primary and secondary causality in a more detailed manner and apply this analysis to the relation between the body and the

primary cause, but his analysis is severed from the deeper Thomistic understanding of the philosophy of nature and metaphysics, causing Moreland to come to a very different understanding of the relation between the body and soul (see Moreland, "Substance Dualism and the Body: Heredity, DNA, and the Soul," ch. 6 in Moreland and Scott B. Rae, *Body and Soul: Human Nature and the Crisis in Ethics* [Downers Grove, IL: Intervarsity Press, 2000]). For a very brief but proper treatment of Thomas's understanding of this issue, see Joseph Bobik, *Aquinas on Matter and Form and the Elements* (Notre Dame, IN: University of Notre Dame Press, 1998), 137–51.

¹⁷ A particularly interesting example can be found in the *ST* where Thomas uses the relation between the soul and the body as an analogy to help explain God's causation of sinful acts without actually being the cause of sin. Thomas gives the example of a person with a limp. Although the soul causes the movement of walking with a limp, the soul does not actually cause the limp, which is caused by the defect in the body. So also, God causes humans to perform sinful actions, but does not actually cause the sin, which is caused by the defect in the secondary cause (*ST* I, q. 49, a. 2, ad 2; I-II, q. 79, a. 1).

soul.¹⁸ The first point is that *both the primary cause and the secondary cause act in accord with their form*. Thomas notes that things act in accord with their forms, both their substantial forms and their accidental forms.¹⁹ Their substantial form determines their nature; hence, all things act in accord with their nature. For example, dogs perform dog actions, and humans perform human actions. Regarding instrumental causality, a human can use a dog as an instrument, such as when the Benedictine monks of St. Bernard Abbey used St. Bernard dogs to find travelers stuck in deep snow. These dogs were a suitable instrument for this work since by their nature they had a keen sense of smell, a friendly disposition, and the ability to dig for buried travelers. Because the secondary cause is moved in accord with its form, other animals such as cats or hamsters would not have been able to perform the actions willed by the monks. In addition to substantial forms, beings also have accidental forms. “Accidental forms” refers to all the dispositions and perfections that a being has in addition to its nature. For example, some humans have the accidental form of wisdom. Hence, as first causes, they can wisely move instruments to perform actions, or as secondary causes they can be moved by God to act wisely. In speaking of the necessity of the sacrament of holy orders, Thomas gives the example of the ordained minister as an instrumental cause of our salvation. He notes that instruments must be proportionate to the agent and hence, ministers must be in conformity with Christ, the agent. He concludes that ministers must participate somehow in Christ’s divinity through some spiritual power (*SCG* IV, ch. 74). In other words, the minister must be given an accidental form through sacramental grace which transforms him to be proportionate to the actions Christ moves him to perform.

Not only do both causes act in accord with their form, but the secondary cause is also moved in accord with the form of the first cause.²⁰ For example, if a human is the piano player and the piano is the instrumental cause, the piano is moved to make music in accord with the abilities of the piano player. A good piano player can move the piano to make good music

¹⁸ Thomas’s understanding of instrumental causality matured throughout his lifetime, so I will not refer to anything written before *De veritate*.

¹⁹ See *ST* I, q. 76, a. 4, where Thomas notes that there is only one substantial form in man but there are many other accidental forms including the sensitive and nutritive souls that are contained virtually.

²⁰ In *SCG* III, ch. 103, Thomas states: “There proceeds from an instrument not merely an effect corresponding to the power of the instrument, but also an effect beyond its power, insofar as it acts through the power of the principal agent [Ex instrumento autem procedit non solum suae virtuti correspondens effectus, sed etiam ultra propriam virtutem, inquantum agit in virtute principalis agentis].”

and a bad piano player moves the piano to make bad music. (But in both cases the piano makes piano music since the piano is also moved in accord with its form.) Thomas uses the analogy of the craftsman and the cutting tool to explain this truth:

Wherever there are several mutually ordained agents, the inferior is moved by the superior, . . . since what is moved by another has a twofold action, one which it has by its own form, the other, which it has inasmuch as it is moved by another; thus the operation of an axe according to its own form is to cut, but inasmuch as it is moved by the craftsman, its operation is to make benches. Hence the operation which belongs to a thing by its form is proper to it, nor does it belong to the mover, except in so far as he makes use of this kind of thing for his work: thus heating is the proper operation of fire, but not of a smith, except in so far as he makes use of fire for heating iron. But the operation which belongs to the thing, merely as moved by another, is not distinct from the operation of the mover; thus to make a bench is not the work of the axe independently of the work of workman. Hence, wherever the mover and the moved have different forms or operative powers, the proper operation of the mover and the proper operation of the moved must be distinct; although the moved participates in the operation of the mover and the mover uses the operation of the moved, and consequently, each acts in communion with the other.²¹

Thomas is careful to show how on the one hand both the agent and the instrument have their own proper effect for each acts in accord with

²¹ *ST* III, q. 19, a. 1: "Ubi cumque sunt plura agentia ordinata, inferius movetur a superiori. . . . Quia actio eius quod movetur ab altero, est duplex, una quidem quam habet secundum propriam formam; alia autem quam habet secundum quod movetur ab alio. Sicut securis operatio secundum propriam formam est incisio, secundum autem quod movetur ab artifice, operatio eius est facere scamnum. Operatio igitur quae est alicuius rei secundum suam formam, est propria eius; nec pertinet ad moventem, nisi secundum quod utitur huiusmodi re ad suam operationem, sicut calefacere est propria operatio ignis; non autem fabri, nisi quatenus utitur igne ad calefaciendum ferrum. Sed illa operatio quae est rei solum secundum quod movetur ab alio, non est alia praeter operationem moventis ipsum, sicut facere scamnum non est seorsum operatio securis ab operatione artificis. Et ideo, ubi cumque movens et motum habent diversas formas seu virtutes operatives, ibi oportet quod sit alia propria operatio moventis, et alia propria operatio moti, licet motum participet operationem moventis, et movens utatur operatione moti, et sic utrumque agit cum communione alterius." Cf. *ST* III, q. 62, a. 1, ad 2.

its form. The craftsman does actions in accord with his level of skill and strength (both his substantial and accidental forms, e.g., the habit of the art of carpentry). Likewise, the axe is moved as an axe (not a hammer or a cell phone) to do the proper action of an axe—to cut (cf. *ST* III, q. 62, a. 1). Yet, on the other hand, to the extent the instrument is moved by the agent, the operation of the instrument is not distinct from that of the agent. The axe is moved to perform rational actions (the ordered movements required to make benches), not because it is rational, but because the craftsman is a rational being. The axe is moved by the power of the agent, in accord with the plan in his mind, and for the sake of the end of the agent. For, “the bench is not like the ax, but is like the art which is in the craftsman’s mind.”²²

In relation to the body and soul, both the body and the soul act in accord with their form.²³ (Here I am *not* referring to the substantial form of the body, which is the soul, but to the accidental form of the body as ordered matter.)²⁴ The rational soul moves the body in accord with its plan (*ratio*) and its end (for example it might move the body to run in accord with the plan of exercise and the end of health). The body is moved in accord with its particular form; for example, some people can run more easily than others because of their bodily disposition. Since the body is moved in accord with its form, and is a “full” cause of the action, a study of it will give an explanation of the action.²⁵ In other words, I could explain

²² *ST* III, q. 62, a. 1: “Unde effectus non assimilatur instrumento, sed principali agenti, sicut lectus non assimilatur securi, sed arti quae est in mente artificis.”

²³ See *SCG* IV, ch. 73: “Now, the body is the instrument of the soul, and an instrument is for the use of the principal agent: therefore, the disposition of the instrument necessarily must be such as becomes the principal agent. Hence, the body is disposed in harmony with the soul [Quia vero corpus est animae instrumentum; instrumentum autem est ad usum principalis agentis: necesse est quod talis sit dispositio instrumenti ut competat principali agenti; unde et corpus disponitur secundum quod congruit animae].”

²⁴ By saying that the instrumental cause is moved in accord with its form, there is a danger of confusion since the soul is the substantial form of the body. I am not really sure what term I could have used that would be less confusing, so I continued to use the word “form” here because Thomas uses it in general to show how secondary causes are moved in accord with their dispositions (see *ST* III, q. 19, a. 1). The dispositions include both a secondary cause’s substantial form and its accidental forms (the word “substantial form” is used analogously in the case of an artifact). For example, a cutting tool is not only moved as a cutting tool, but also as a sharp or dull cutting tool. So also, the body is not only moved in accord with the matter, but in accord with the disposition of the body as a healthy or strong *human* body.

²⁵ More on how both the instrument and primary cause are full causes will be explained below.

running as the complex action of the brain sending nerve impulses to the leg muscles causing them to contract in a rhythmic manner. Or from the perspective of the soul, I could explain running as an act ordered to health (which is also true of the body since the act of the instrument is not distinct from that of the agent).²⁶

Let us go back to the example of the piano player and piano. Since the piano is moved in accord with its form and it is moved to make music in accord with the form of music in the mind of the player, the act of making music can be described in two different ways (although both descriptions are incomplete without the other). First, the music could be described solely from the perspective of the instrumental cause: the music is caused by hammers striking wires of various lengths causing different vibrations in the air. Or from the perspective of the first cause: the music is caused by the piano player striking certain keys in an ordered manner in accord with the form in his mind (resulting in music, not noise). Since both causes “fully” cause the music, from one perspective both explanations explain why the music comes out of the piano. If someone looked solely at the piano, a nearly complete explanation of the cause of the music could be given. However, the explanation would fail to fully explain why the particular notes were played.

When this understanding is applied to the relation between the soul and body, we see that a modern neuroscientist could look at the body and give a “complete” explanation of the acts of thinking, loving, bodily movement, and so on. After all, the body is moved in accord with its form. Since the human body is much more complex than a piano, a much more comprehensive explanation of human actions could be given. With a Thomistic understanding of the relation between the body and soul, this should be expected. However, what would be left out of this explanation would be a deeper level explanation of *why* the body moved in this way. In other words, one might say that a particular brain activity is the material cause of a thought, but this does not explain why the brain acts in this way. Although many further surface-level explanations could be given that explain these human actions—genetic makeup, response to environment, and so forth—all of these explanations fail to give a satisfactory explanation of the phenomenon of free choice when it is understood as a rational activity.²⁷ With Thomas’s understanding of primary and secondary

²⁶ For a non-Scholastic explanation of how a study of the body gives an account of actions but does not rule out non-material causes, see E. J. Lowe, *Personal Agency: The Metaphysics of Mind and Action* (New York: Oxford University Press, 2008).

²⁷ There is a great deal of debate on this topic within the realm of philosophy of mind and it is beyond the scope of this essay to enter further into the debate. However, to

causality, it is quite appropriate and important to study secondary causes to understand the nature of the effect. However, this knowledge is always incomplete without some understanding of the primary cause, since the instrument is moved in accord with the form of the primary cause.²⁸

A second point derived from Thomas's understanding of instrumental causality is that because the primary and instrumental cause are in different orders, they are not each partially causing the action, but each fully causes the action in its own way. To a certain extent, the idea of each cause as fully causing the action was seen in the last section, but in this section I want to emphasize that the primary and instrumental causes are not competing causes. In the context of speaking of God moving creatures to act, Thomas explains:

support this point, I want to point to a book written by a philosopher and a psychologist in response to the common view that, if people are materialists, they cannot believe in free rational actions. In *Did My Neurons Make Me Do It?* Murphy and Brown are "physicalists" (they do not like the term "materialists," for, although they do not believe that there is a soul, they do believe in God and other immaterial things) who believe that "our neurobiological equipment makes rationality, responsibility, and free will possible" (4). They admit that most popular developments in neuroscience and philosophy are written by physicalists who are also reductionists—those that reduce all perceptions of free will, rationality, and moral responsibility to the laws of neurobiology. They further note that these reductionists then discredit the idea that humans have these characteristics because they can be explained by neurobiological explanations. The book seeks to show how one can be a physicalist but not reduce all of these experiential perceptions to the laws of neurobiology. Their solution is to propose "a concept of downward or top-down causation, which, in turn, needs to be understood in the context of dynamic systems" (8). I use this as an example to show how for many philosophers of mind a solely neurobiological explanation is very unsatisfactory (even if they come up with a solution). As noted, it is beyond the scope of the present article to argue against this book, but at the end of the day I think Murphy and Brown are simply replacing a "simpler," more imminent biological determinism with a more complex, universal biological determinism. For a critique of materialism in general see Madden, *Mind, Matter, and Nature*, 132–216 (chs. 5 and 6).

²⁸ This is true in all cases of primary and secondary causality. For example, in studying the biological notion of evolution, it is the role of the natural sciences to study secondary causes, and hence the role of biology to determine whether or not evolution is true. However, it is the role of philosophy and theology to study the primary cause (God), and hence a purely biological understanding of evolution can never answer the deeper questions of existence. By showing the relation between the soul as primary cause and the body as secondary cause, Thomas gives an answer to the physical causal closure argument for physicalism made Jaegwon Kim. Kim argues that a physical effect can only be caused by a physical cause, and since neuroscience provides a complete physical explanation, non-physical causes are redundant; see Kim, *Physicalism or Something Near Enough* (Princeton, NJ: Princeton University Press, 2005).

It is apparent that the same effect is not attributed to a natural cause and to a divine power in such a way that it is partly done by God and partly by the natural agent: rather, it is wholly done by both, according to a different way, just as the same effect is wholly attributed to the instrument and also wholly to the principal agent.²⁹

When Thomas says that each cause wholly performs the action, he does not mean that the instrument can perform the action by its own power, for inasmuch as it is an instrument it cannot act unless moved by the principle agent. However, as an instrumental cause, it completely causes the action, albeit by participating in the power of the first cause. Again the example of the piano player and the piano is helpful. It would be incorrect to say that the piano and player were competing causes such that, to the extent the piano causes the music, the causality of the player is reduced, or vice versa. Rather, although a better piano is capable of producing better music (for it is moved in accord with its form), this greater ability does not diminish the ability of the player to make great music, but enhances this ability. *The primary cause and instrumental causes are not competing causes such that the causality of one diminishes the causality of the other; rather they are both fully causes of the action in such a way that the perfection on the part of one enhances the causal ability of the other.*³⁰ When this concept is applied to the body and soul, we see that a more healthy body does not diminish the causal action of the soul, but allows the soul to perform its proper actions more perfectly. If the body and soul are seen as competing causes, such that any causality on the part of the body reduces the causality on the part of the soul, then the discoveries of modern neuroscience will lead to a rejection of the idea of the soul. The line of reasoning goes as follows: Acts are caused by either the body or the soul. Science has discovered that acts are caused by the body. Hence, acts are not caused by the soul. If acts are not caused by a soul, then there is no reason to believe a soul exists. In actuality, this argument has probably not caused many people to stop believing in a soul, but if someone already assumes that souls do not exist, an argument

²⁹ SCG III, ch. 70: "Patet etiam quod non sic idem effectus causae naturali et divinae virtuti attribuitur quasi partim a Deo, et partim a naturali agente fiat, sed totus ab utroque secundum alium modum: sicut idem effectus totus attribuitur instrumento, et principali agenti etiam totus."

³⁰ An understanding of this concept is essential in understanding how God causes humans to act freely. In fact, a misunderstanding of this concept is one of the greatest causes of the failures of modern ethics as influential thinkers such as William Ockham, Martin Luther, John Calvin, and the enlightenment thinkers misunderstood this concept. However, explaining this is beyond the scope of this essay.

like this can allow them to keep from taking arguments for a soul seriously. A proper understanding of instrumental causality averts arguments based on competing causality.

A third point derived from Thomas's understanding of instrumental causality is that because both causes act in accord with their form, a defect in either the primary or secondary cause results in a defective action. For example, a bad craftsman will make bad benches. But a good craftsman with a bad axe will also make bad benches. Thomas notes: "For unless an instrument is well-disposed, no matter how perfect the principle agent may be, a perfect action of the agent does not come about through the instrument."³¹ In his commentary on *De anima*, Thomas specifically applies this to the soul and body. He notes that the lack of ability to think is not caused by a defect in the soul, but in the body:

If the soul itself decayed, it would decay especially in old age; that is when the organs of sense grow feeble. Yet, in fact the soul itself is unaffected by old age; if an old man could be given a young man's eye he would see just as well as a young man. The decline of old age, then, is not due to a decline in the soul or in the faculties of sense, but to the body; just as in sickness or drunkenness it is the body, not the soul, that is enfeebled. Hence "understanding" (simple apprehension) and "thinking" (the intellectual activity of combining and distinguishing ideas), grow weak, not through a weakness in the intellect, but through "the decay of something else within" (the intellect's organ or instrument). Understanding "in itself cannot be affected."³²

Thomas, following Aristotle, notes that the weakening of the intellect with age is not because of a weakening of the soul, but because of the weakening

³¹ *ST* I-II, q. 58, a. 3, ad 2: "Sicut non sequitur perfecta actio alicuius agentis per instrumentum, si instrumentum non sit bene dispositum, quantumcumque principale agens sit perfectum." Cf. *ST* I-II, q. 58, a. 3, ad 2; q. 65, a. 3, ad 1.

³² *In I de anima*, lec. 10, no. 164: "Si enim corrumpetur anima, maxime corrumpetur a debilitate quae est in senectute, sicut accidit in organis sensitivis, quae debilitantur ex senectute: tamen anima non debilitatur ex hoc; quia si senex accipiat oculum iuvenis, videbit ut iuvenis. Quare senectus debilitat, non quidem quod ipsa anima patiatur seu virtus sensitiva, sed id in quo est. Sicut in aegritudinibus et in ebrietatibus non debilitatur anima, sed corpus. Sic ergo intelligere, idest simplex apprehensio et considerare, idest operatio intellectus quae est in componendo et dividendo, marcescunt, non quidem quod intellectus corrumpatur et patiatur, sed corrupto quodam alio interius, idest corrupto aliquo, quod est organum intellectus. Ipsum autem intelligere est impassibile."

of its instrument, the body. Hence, differences in the ability to think can be attributed to either the soul or the body. The defect could be in the soul since some have not acquired the virtues necessary to think well. However, others, because of differences in the brain, or even injury or disease, vary in ability to think—not because of a defect in the soul, but a defect in the body. This applies to moral actions as well—evil can come from someone with an “evil” soul or from someone with a physiological defect keeping her from performing her proper actions.

Someone who knows Thomas’s writings might object to this example since Thomas (and Aristotle) will also argue that in the act of understanding, the intellect does not use the body as an instrumental cause.³³ However, Thomas also believed that although the act of understanding is an immaterial act of combining or separating intellectual forms (concepts), in order for a human to actually combine or separate these forms, the forms must be represented by sense images (phantasms: usually words, but also pictures).³⁴ In other words, humans think in words that represent concepts. These words are sense images that are located in the brain which is used as an instrument of the intellect. Hence, although for Thomas the act of understanding in itself exceeds the capacity of the body, in humans on earth, *every* act of understanding requires the use of the body since intellectual forms are represented by sense images (words).³⁵ Thus, Thomas and Aristotle can

³³ See for example Thomas’s commentary on *De anima* 3.4, where Aristotle will note that the body is not the instrumental cause of understanding since the acts of the intellect are not performed through a bodily organ. For Thomas’s commentary on this passage see §§ 684–99 of *In III de anima*. See also the disputed questions on *De anima* 10 where Thomas argues that the acts of understanding and willing are not done through a bodily organ since they exceed the capacity of the body. See also *SCG* IV, ch. 41.

³⁴ See *ST* I, q. 84, a. 7: “In the present state of life in which the soul is united to the passible body, it is impossible for our intellect to understand anything actually, except by turning to the phantasms. . . . Wherefore it is clear that for the intellect to understand actually, not only when it acquires fresh knowledge, but also when it applies knowledge already acquired, there is need for the act of the imagination and of the other powers [Quod impossibile est intellectum nostrum, secundum praesentis vitae statum, quo passibili corpori coniungitur, aliquid intelligere in actu, nisi convertendo se ad phantasmata. . . . Unde manifestum est quod ad hoc quod intellectus actu intelligat, non solum accipiendi scientiam de novo, sed etiam utendo scientia iam acquisita, requiritur actus imaginationis et ceterarum virtutum].”

³⁵ This is true even in reference to immaterial things of which there are no phantasms. Thomas states that in this present state of life when we know immaterial things such as God we only know them “by way of remotion or by some comparison to corporeal things. And, therefore, when we understand something about these

at the same time observe that human intellectual powers diminish with age and still argue that the act of understanding exceeds the capacity of the intellect. This corresponds nicely with the findings of modern neuroscience which can detect electronic changes in the brain corresponding to human thoughts. Consequently, the soul works through the body in understanding and if there are physiological defects in the body, the ability of the soul to understand will be diminished.³⁶

A fourth point that can be drawn from Thomas's understanding of instrumental causality stems from the distinction he makes between a conjoined and a separated instrument. In the context of using the relation between the body and soul as an analogy for the relation between the human nature and divine person in Christ, Thomas states: "Now, the body and its parts are the organ of the soul in one fashion; external instruments in quite another. For this axe is not the soul's very own instrument, as this hand is, for by an axe many can operate, but this hand is deputy to this soul in its very own operation."³⁷ Thomas goes on to distinguish between the way that all humans are instruments of the divine Son and the way the human nature of Christ is an instrument of the divine Son. All humans are separated instruments of the Son, but the human nature of Christ is conjoined to the Son as the body is conjoined to the soul.³⁸

However, the way that the body is conjoined to the soul is different from the way that the human nature of Christ is conjoined to the divine Son. Unlike in Christ where there are two natures, in humans the soul is the substantial form of the body and the principle by which the body lives and acts (*ST* I, q. 76, a. 1). If this substantial unity is not maintained, then there is the danger of falling into substance dualism. Thomas explicitly rejects this view that the soul is not united to the body as its form and

things, we need to turn to phantasms of bodies, although there are no phantasms of the things themselves" [. . . per remotionem, vel aliquam comparisonem ad corporalia. Et ideo cum de huiusmodi aliquid intelligimus, necesse habemus converti ad phantasmata corporum, licet ipsorum non sint phantasmata]" (*ST* I, q. 84, a. 7, ad 3).

³⁶ The same is true for acts of willing that also require the body due to the role of sense knowledge in the practical intellect and the sense appetites in the act of willing.

³⁷ *SCG* IV, ch. 41: "Aliter enim est animae organum corpus et eius partes, et aliter exteriora instrumenta. Haec enim dolabra non est proprium instrumentum, sicut haec manus: per dolabram enim multi possunt operari, sed haec manus ad propriam operationem huius animae deputatur." Cf. *In II de anima*, lec. 9, no. 348, and *ST* III, q. 62, a. 5.

³⁸ Thomas goes on to state that the unity between the human nature and the divine Son is greater than the unity between the body and soul.

has a different substantial form (where the soul acts like the captain of a ship).³⁹ In other words, the statement that the body is an instrumental cause of the soul can easily be misinterpreted, since an instrument can also be a separated instrument (or even a conjoined instrument of a different nature).⁴⁰ However, for Thomas, an instrumental cause can be a fundamental part of something.⁴¹ The discussion of the body as an instrumental cause must always be kept within the context of the soul as the form of the body in order to properly understand the relation between the body and soul.

In summary, Thomas has a rich understanding of instrumental causality and he uses it in many different settings. Hence, a proper understanding of this concept can help the reader better understand many aspects of Thomas's thought. In the context of this paper, an understanding of instrumental causality can help modern readers understand the relation between the body and soul and how the discoveries of modern neuroscience relate to this knowledge. The body and soul each act in accord with their form and the body is moved both in accord with its form and the form of the soul. Hence, the body will do bodily actions that can be measured and explained by neuroscience, but the ultimate cause and reason for these actions is the soul (which is more properly explained by insights from philosophy and theology). Furthermore, the body and soul are not competing causes; rather the perfection of one increases the causal ability of the other. Hence, psychological health is a very important aspect of free human actions. Also, just because the actions are caused by the body does not mean there is not a soul—but it might mean that one needs a more complex understanding of the relation between the body and the soul (since the body is moved in accord with the forms in the soul). Finally, the body is a conjoined instrument that is informed by the soul.

Because modern neuroscience studies the secondary cause, as long as its findings are true, it should never be considered as an opponent to philosophy or theology. Rather, since the soul works through the body, its findings help us better understand things like free human actions, human culpabil-

³⁹ *ST I*, q. 76, a. 4. In q. 76, a. 1. Thomas also rejects the idea that the body is an instrument of the soul in the Platonist sense.

⁴⁰ Moreland makes this error by speaking of the body as an instrumental cause, but not understanding the way it is conjoined to the soul; see "Substance Dualism and the Body."

⁴¹ Bobik makes the point that all the bodily components (as in the elements the body is composed of) are instrumental causes of actions (*Aquinas on Matter and Form and the Elements*, 141–43).

ity in actions, bioethical decisions, the role of art, how to teach better, and so on. Nonetheless, like all sciences, it has its limitations, and ultimately the soul is the primary cause of human actions. 