

AN INDUCTIVE STUDY OF THE NOTION OF EQUIVOCAL
CAUSALITY IN ST. THOMAS

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ALTHOUGH THE FUNDAMENTAL kinds of causality—material, formal, agent, and final—are well known among students of St. Thomas and Aristotle, a particular mode of agent causality is unusual both for being of profound importance and for rarely receiving the attention it deserves. I refer to what St. Thomas calls “equivocal” or “non-univocal” agent causality, as distinct from the more straightforward univocal agent causality of one man generating another, hot things making other things hot, and moving bodies causing other bodies to move.

Saint Thomas employs the idea of equivocal agency throughout his corpus as a way to understand many instances of agent-patient relationship in nature, art, and the supernatural. Surprisingly, however, neither St. Thomas nor Aristotle, from whom he appears to draw the notion, explicitly mentions equivocal causality where one might expect it: in their most formal and complete discussions of causality as such.¹ Likewise, one is hard pressed to find extended discussions of it in the scholarly literature centered on agent causality.² This may have

¹ I have in mind *Phys.* 2.3; *Metaphys.* 1.3-6; 5.2; and St. Thomas’s commentaries on each, as well as *De Princip. Nat.*, c. 3.

² Rather than performing the impossible task of listing the works on agent causality that say little or nothing about equivocal causality, I will point out the few I have found that have something to say on it. See John F. Wippel, *Metaphysical Themes in Thomas Aquinas II* (Washington, D.C.: The Catholic University of America Press, 2007), 50-68; although Fr. Wippel frequently references equivocal causality, his is an exclusively

something to do with the fact that St. Thomas's paradigm example seems to rely on an outmoded component of ancient and medieval cosmology. His paradigm example is the sun, and the incorruptible heavenly substance in general, causing various phenomena here below.³ One wonders whether this example is itself the primary reason for such silence among Thomists afraid that it acquires guilt by association with the geocentric vision of the universe.

These lacunae and this example, then, when combined with the frequency with which St. Thomas employs the concept of equivocal causality—especially in the context of understanding divine action—make all the more useful an extended consideration of the idea. The following is intended to be a first attempt at such a discussion, an essay in the original sense of the word. It will be inductive in the sense that it will gather, not only all the relevant passages in the Thomistic corpus, but also the various and lesser-known examples of this sort of causality. If this essay only impels other students of St. Thomas to think in a more sustained way about this kind of agency, and possible examples of it, then it will have accomplished its purpose.

The essay is divided into six parts, each of which is interspersed with examples of equivocal causality other than the sun. First, I will explain at length what St. Thomas means by equivocal agent causality by presenting two apparently distinct ways in which he describes it, namely, as an agent that bears the form it gives in a different way than it is received or as one that bears it in a more eminent way. Second, I will argue that this

historical study of St. Thomas's references to the more general axiom about like causing like. See also Michael Dodds, O.P., *Unlocking Divine Action: Contemporary Science and Thomas Aquinas* (Washington, D.C.: The Catholic University of America Press, 2012); Fr. Dodds refers frequently to the distinction between univocal and nonunivocal agency, though he seems not to intend precisely the same thing as St. Thomas does; in Dodd's usage it seems to be identical to the difference between causes of radically different orders, such that it appears that God is the *only* nonunivocal cause. The only academic article I have found that has much to say about equivocal causality is John M. Quinn, "The Third Way: A New Approach," *The Thomist* 42 (1978): 50-68.

³ In the texts that follow I will cite several instances where St. Thomas uses the sun as his chief example, but any reader who has come across St. Thomas's references to equivocal causality knows what I am talking about.

apparent distinction is significant, implying that one is broader and more rudimentary, whereas the other is narrower and more proper. In the third and fourth parts, I will further elucidate equivocal causality and the aforesaid distinction by comparing it to two other sorts of agency, namely, instrumental and universal causality. Using these comparisons I will, in the fifth section, show how the greater eminence of possession in the equivocal cause itself exists in different ways. Having gathered from St. Thomas's work many examples of equivocal causality that on the whole are less in conflict with science as we know it now, in a final section I will suggest several other instances of causality in contemporary science that might be profitably interpreted through equivocal agency.

I. TWO DESCRIPTIONS OF EQUIVOCAL CAUSALITY

A) Names Univocal, Equivocal, and Analogical

It is likely that one will not understand equivocal causality unless one first understands what an equivocal name is, so we will begin with a brief review of the fundamental difference between equivocal and univocal naming. Aristotle begins the *Organon* by distinguishing such names:

Things are spoken of equivocally when the name alone is common to them, but the account of the substance belonging to the name is different (such as when both a man and a drawn figure are called "animals"). . . . For if one were to give what each of these is as being an animal, one would give an account peculiar to each one. However, things are spoken of univocally when the name is common and the account of the substance belonging to the name is the same (such as when both a man and an ox are called "animals").⁴

Things named univocally have one name and one definition, whereas things named equivocally have one name but different definitions.

⁴ *Categories* 1.1a1-8. All translations of Aristotle and St. Thomas in this essay will be my own, though I will give the original Greek or Latin where it seems helpful.

A further distinction can be made among equivocal names, however, bearing on the idea of equivocal causality. These definitions can be either wholly different—such as when I call both the flying rodent and the baseball club “bats”—or only partly so—such as when I call both the animal and the weather “healthy.” In the former case, there is nothing intelligible about the fact that both receive the same name, simply because there is no intelligible connection between baseball and flying rodents. In the latter case, however, the connection between the condition of the animal and the weather conducive to it is intelligible; it makes sense that both would be called “healthy.” Whence, because the former sort of equivocation is a pure case, it is antonomastically called “equivocation,” whereas the latter receives a new name, “analogy,” to indicate the proportionality of the two *rationes* receiving the same name.⁵ However, at least as far back as Boethius the same distinction is sometimes made by calling the former “fortuitous equivocal” (*aequivoca a casu*) and the latter “deliberate equivocal” (*aequivoca a consilio*) to preserve the connection of both with the general notion of equivocation.⁶

This foundation having been laid, one might wonder which kind of equivocal St. Thomas has in mind when he speaks of equivocal causes: pure equivocation or intelligible and advised equivocation? An answer will become clear as we consider the two basic ways in which he describes equivocal causes.

⁵ Saint Thomas says that this implies that even Aristotle’s example of an equivocal use of a word, namely, “animal” said of the figure in a picture, is really an instance of analogy; see *STh* I, q. 13, a. 10, ad 4. On analogy and equivocation, see IV *Metaphys.*, lect. 1 (passim); XI *Metaphys.*, lect. 3 (2197); and *STh* I, q. 13, a. 5. All citations of St. Thomas’s commentaries on Aristotle and Pseudo-Dionysius are from the Marietti edition; parenthetical numbers refer to paragraph numbers in this edition.

⁶ See Boethius, *In Categ. Arist. Libri Quatuor*, 166B-C. Saint Thomas follows Aristotle himself in occasionally referring to pure equivocations as *aequivoca a casu* (I *Metaphys.*, lect. 14 [223]). It is, of course, ironic (and confusing) that “equivocal” turns out to be itself an equivocal word.

B) *Equivocal Causality as Articulated in “Summa contra gentiles” I, c. 29: The “Different Mode and Account”*

Saint Thomas presents perhaps his most straightforward account of what an equivocal agent is, and how it is related to equivocal naming, in a discussion in the *Summa contra gentiles* of how creatures are like God. In this context it is understood that a univocal cause is one that is specifically the same as its effect: just as a father generates a son, and both are univocally called “men,” a univocal agent has the form it gives in the same way that the patient receives it. Thus, St. Thomas describes the opposite of a univocal cause as follows:

Effects falling short of their causes do not agree with them in name and account [*ratione*], yet it is necessary that there be found a certain likeness [*aliquam similitudinem*] between them. For it is of the nature of action that the agent would effect a like to itself [*agens sibi simile agat*], since each thing acts according as it is in act. Whence the form of the effect is found in a certain way [*aliqua l i t e r*] in an exceeding cause, but according to a different mode and a different account [*alium modum et aliam rationem*]⁷—by reason of which it is called an equivocal cause. For the sun causes heat in the lower bodies by acting according as it is in act; whence it is necessary that the heat generated by the sun holds a certain likeness to the active power of the sun, through which the heat in these lower things is caused—by reason of which the sun is called “hot,” although not with a single account. And so the sun is said to be like all those things in which it effectively induces its effects, and yet it is still unlike all of them inasmuch as effects of this sort do not possess heat (and things of this sort) in the same mode as it is found in the sun. So too God also brings forth all perfections, and through this has a likeness with all things—and an unlikeness at the same time.⁷

Here we have, not only the classic example of the sun (in this instance, as a cause of heat),⁸ but we also have a clear statement of the principle: When an agent possesses the form the patient

⁷ *ScG I, c. 29.*

⁸ The following is just a sampling of other places where the sun is described as an equivocal cause of heat: *STh I, q. 57, a. 2, ad 2*; *I Sent., d. 8, q. 1, a. 2*; *II Sent., d. 1, q. 2, a. 2*; *IV Sent., d. 1, q. 1, a. 4, ad 4*; *ScG I, c. 31.*

receives in a different way⁹ than the patient receives it, the agent is called an “equivocal cause.” There is an ambiguity in St. Thomas’s distinction here, however, especially as it pertains to the way in which this connects with equivocal and univocal naming. He says that the equivocal agent does *not* receive the same name as the patient, so it would seem that an equivocal agent is not called “equivocal” for the same reason as some names are. And yet in St. Thomas’s very example he also says that the sun is called “hot.”¹⁰

The most plausible way of understanding this apparent contradiction is to read the first claim in light of the second: The name “equivocal cause” is an abbreviated way of saying that the name of the effect is not commonly said of the agent—the sun is not usually thought of as hot (in the ancient cosmology)—or if in some contexts, or in some languages, the same name *is* given to both, then that name is being used equivocally, that is, under a significantly different meaning. Such an equivocation would obviously not be by chance, but in virtue of the recognition of a sort of proportion between the sun’s active nature and its effects. That this is the drift of St. Thomas’s thought is clear from the context, for he seems to be recapitulating the argument for thinking of the sun as hot when he recalls the axiom that because an agent can act upon another only in virtue of its own actuality, what it brings forth in the patient must make it like itself. Thus, if the noonday sun heats my brow, the sun too must be hot. In the case of the equivocal agent, however, we must make the proviso that the effect is like the patient in only a qualified way. Heat is equivocally, but advisedly, attributed to both the sun and the brow, the latter according to the ordinary meaning of the word but the former because its capacity to bring about heat (in the ordinary

⁹ For now we will treat the difference in *modus* and *ratio* as unimportant, largely because St. Thomas does not elsewhere mention both, but one or the other. However, we will consider possible differences in St. Thomas’s intent later. See note 78.

¹⁰ We might compound the contradiction by noting that in some passages St. Thomas will also say that the sun is *not* hot; see I *Sent.*, d. 8, q. 1, a. 2.

meaning of the word) must contain something of the nature of this heat—otherwise it would not be able to bring it about.¹¹

It appears that, in spite of St. Thomas dubbing them *equivocal* causes, such causes do not have the form of the effect in a purely equivocal way: If the name of the effect is given to the equivocal agent, it is said according to an analogy.¹² He says this explicitly elsewhere, again invoking the axiom about an agent being able only to make a thing become like itself:

Every agent effects a thing like to itself, so the effect of the agent must be in some mode in the agent. For in some it is the same according to species, and such are called univocal agents (e.g., heat in a fire heating something), but in some it is the same according to a proportion or analogy [*proportionem sive analogiam*] (e.g., when the sun heats something). For there is something in the sun that thus makes it a heating thing just as heat makes a fire hot, and following this, heat is said to be in the sun equivocally.¹³

On ancient cosmology, if one is calling the sun “hot” (and is not speaking merely metaphorically), then he is either onto something, or he is using the word univocally and is therefore making a mistake.

One might also want to distinguish among equivocal causes insofar as some more than others readily and customarily deserve the name of their effect. For example, some men are wise, as are some books, and so is God. But whereas we might, in a rather extended sense, call a book “intelligent” or “wise” (because of the intelligence it can communicate or because of its author), a man is called “wise” more properly, for he, unlike the

¹¹ In ancient cosmology the sun and all celestial matter were thought to be incorruptible (as consistent observation suggested). Because alteration is the qualitative change a body undergoes on the way toward its corruption, alteration and the qualities that alter would also be impossible for a heavenly body. However, since being heated up and heating up other things are instances of alteration, heavenly bodies are neither heatable nor hot; see Aristotle, *De Caelo* 1.3.

¹² This is not, however, to say that every analogous use of a name is an equivocal cause; sometimes not the cause but the effect receives the name analogously, as when we say one’s complexion is healthy or one’s actions are wise. Every equivocal agent is named by the effect analogically, but not everything named analogically is an equivocal agent.

¹³ *IV Sent.*, d. 1, q. 1, a. 4. See also *STh* I, q. 45, a. 8, ad 3.

book, possesses the knowledge *as knowledge*, that is, as a perfection of his intellect—and God is said to possess wisdom in the same way, only far more so, inasmuch as he not only possesses a greater wisdom than might be found in any book or any created intellect but also because he is wisdom itself. Hence, there are degrees of equivocality among equivocal causes: some receive the name of the effect in a less equivocal way than do others, and the others possess it in a way that is closer to pure equivocation. This may be why St. Thomas sometimes says that it is something of an understatement to call God an equivocal cause of wisdom; it might be more illuminating to say he is an agent cause of wisdom according to analogy:

Each of these things [i.e., wisdom, goodness, etc.] is in God according to the truest account of it [*secundum sui verissimam rationem*]. . . . And thence it is that he himself is not a wholly equivocal cause of the things [*causa rerum omnino aequivoca*], since according to his own form he produces effects like himself not univocally but analogically [*analogice*].¹⁴

God is not called “wise” in a wholly equivocal way but rather in a robust way that is better expressed by calling it an analogy.

Yet, can we articulate more clearly in what this analogy consists? Can we do no more than take refuge in the, admittedly fundamental, axiom that an agent always brings about its like, and insist that therefore there must be some sense in which the form of the effect is in the equivocal cause, *whatever that sense might be*? In the *Summa contra gentiles* passage cited above St. Thomas is fairly minimal in his description of equivocal causes when he says they possess the form they give simply in a “different” way. This minimalism is not unique to this passage: St. Thomas uses similar language elsewhere, for instance in the *Prima secundae* saying that in nonunivocal causality the patient “receives the form from the agent not according to the same account as it is in the agent.”¹⁵ Could the form, then, be present in the agent in a higher way than the patient receives it? Could

¹⁴ I *Sent.*, d. 2, q. 1, a. 2. See also *ScG* I, c. 31.

¹⁵ *STh* I-II, q. 60, a. 1. See also IV *Sent.*, d. 44, q. 3, a. 1, qcla. 3, ad 2 (quoted below).

it be present in a lower way? Indeed, what do “higher” and “lower” mean in this context? Here St. Thomas is not intent on settling this question. Yet he does hint at a more determinate account when he notes that equivocal causality happens when the effects are “falling short” (*deficientes*) of an “exceeding” (*excedens*) cause. In fact, he defines equivocal causality more narrowly elsewhere.

C) Equivocal Causality as Articulated in “Summa Theologiae” I, q. 4, a. 2: The “More Eminent Mode”

In discussing the divine perfection, St. Thomas distinguishes equivocal and univocal causality as follows:

Whatever there is of a perfection within an effect must be found within the efficient cause, either according to the same account, if it is a univocal agent (for example, a man generates a man), or in a more eminent mode, if it is an equivocal agent (for example, in the sun there is a likeness of those things that are generated through the power of the sun).¹⁶

Again we find the example of the sun, this time causing not so much heat as generation, presumably the seasonal burst of life called spring.¹⁷ When the sun quickens plants so that seedlings sprout and flowers bloom, one cannot call the sun a sprout, or a bloomer, or even alive (even in ancient cosmology) without equivocating in some measure, that is, without extending the meaning of “alive.”

Here St. Thomas uses the distinction to argue that God is an equivocal agent of all perfections in creation and therefore possesses them in advance—albeit “in a more eminent mode” (*eminentiori modo*). Thus, the word “different” has been replaced by “more eminent.” Nor is this way of speaking the exception. Saint Thomas more often than not describes the way the equivocal agent possesses the form it gives as “more eminent” or some synonym such as “nobler,” “more excellent,”

¹⁶ *STh* I, q. 4, a. 2. See also *De Malo*, q. 1, a. 3.

¹⁷ On its other effects, see note 81.

“higher,” or “more sublime.”¹⁸ What exactly this more eminent mode consists in, however, is often difficult to pin down.

Yet in certain instances, the presence of a genuine hierarchy stands out. For example, St. Thomas seems to suggest that an animal’s growing hair is an instance of equivocal causality, for while this generation might be “properly called ‘ennaturing’” (*nativitas*), still hair is not one in species with the animal: “This is why fur, or hair, does not have the account of one begotten, and offspring” (*rationem geniti et filii*), but only when what comes forth is like the agent “in a nature of the same species, as a man comes forth from a man, and a horse from a horse.”¹⁹ It is obvious that the animal is a higher sort of being than is its hair, so proposing that the animal bears the form it generates in a higher way is intelligible.²⁰ Likewise, St. Thomas says that “a mule comes to be not from a mule but from a horse and an ass”; thus, although “there is a certain likeness” between the horse and the mule, this generation is “not wholly univocal.”²¹ Just as the mule bears the nature of a horse in a deficient way, this nature is in the parent horse in a more perfect way. The same is true when Aristotle gives the example of a man fathering a daughter; based on his (admittedly erroneous) view of the father as the sole agent in conception, he naturally concludes that the parent is an equivocal cause and that the father, *qua* male, more completely possesses the nature the daughter receives.²²

¹⁸ For other uses of *eminentius*, see II *Sent.*, d. 15, q. 1, a. 2, ad 4; *ScG* II, c. 98; for *nobilius*, see I *Sent.*, d. 2, q. 1, a. 3; II *Sent.*, d. 15, q. 1, a. 2, ad 4; for *excellentius*, see *STh* I, q. 6, a. 2; *De Malo*, q. 4, a. 3; I *Sent.*, d. 2, q. 1, a. 3; for *altior*, see VIII *Phys.*, lect. 10 (1053); IV *Sent.*, d. 41, q. 1, a. 1, qcla. 5, sol. 1, ad 1; for *sublimior*, see *De Pot.*, q. 7, a. 1, ad 8.

¹⁹ *STh* I, q. 27, a. 2.

²⁰ We might add alongside hair any number of bodily secretions, from sweat and tears to skin oils and mucus. These all seem to be equivocally generated by the body. See *STh* I, q. 119, a. 1, ad 3, on the nature of blood, fundamental humors (*humidum radicale*), and *alia huiusmodi* in the body that have the *virtus speciei* but “do not reach all the way toward perfectly attaining the nature of the species.”

²¹ VII *Metaphys.*, lect. 8 (1452).

²² *Ibid.* Granted that Aristotle and St. Thomas conceive of the female as a defective male, the point does not necessarily hinge upon this claim. Even if we were to update

Because St. Thomas as a rule describes equivocal agents as possessing the forms they give in a higher way, one wonders whether he intends this higher possession of the form *whenever* he speaks of equivocal agents; after all, as was noted, even in the passage from the *Summa contra gentiles* he speaks of the equivocal agent as “exceeding” the patient in some way. Indeed, if this is not the case, it would seem that St. Thomas employs two ways of conceiving equivocal causality, one more rudimentary and generic, and another more specific and perhaps the principal notion. And such a multiplication of notions is undesirable, at least *prima facie*.

II. A DIFFERENT VS. A MORE EMINENT MODE

A reason for thinking St. Thomas is not simply misspeaking in the *Summa contra gentiles* when he says that equivocal agents possess the form they give in a “different” way is the fact that he occasionally identifies as equivocal causes agents that appear to bear the form they give in a *lower* way than do the patients that receive them. For instance, in the *Sentences* commentary, in the context of speculations about how the souls of the damned will be united to their bodies at the general resurrection, he says:

The likeness of the agent is in the patient in two ways: in one way, through the same mode in which it is in the agent, as it is in all univocal agents (e.g., the hot makes a thing hot, and a fire generates a fire); in another way, through a mode diverse from the mode in which it is in the agent, as it is in all equivocal agents. In these, however, sometimes it happens that the form received in the patient materially is in the agent spiritually (e.g., the form that is in a house made through art is in itself materially and is in the mind of the artisan spiritually); but sometimes, conversely, it is materially in the agent, and it is received spiritually in the patient (e.g., whiteness is materially in the wall,

the physiology and embryology and consider a woman conceiving and giving birth to a son, there still seems to be a degree of equivocal causality here, and the boy would bear the (admittedly only accidentally different) feminine form in an inferior way than would his mother. Perhaps it is worth adding that St. Thomas thinks the woman has a seed (*semen*), but it is passive; see *STh* I, q. 115, a. 2, ad 3; q. 118, a. 1, ad 4. See also note 90 below.

from which it is received spiritually in the pupil, and even in the medium carrying the whiteness to the pupil). And so it is in the proposed matter.²³

This text is particularly interesting both because it proposes a distinction among sorts of equivocal causality and because here St. Thomas does not have recourse to the sun but to two less time-bound examples: The artisan causing the artifact and the color in the object causing its impression in the transparent medium between itself and the eye, and then even in the eye itself. One does not call the architect a house nor the sensible species of white received into the eye (or the transparent air) white, at least not without equivocating.

But there the likeness stops and the distinction becomes paradoxical. The first case is straightforward: The agent possesses the form in a higher way—that is, cognitively, in the practical intellect: the plan of the house in the builder’s mind is the form in virtue of which he turns the lumber into a house. We will return to this example later; at the moment the other case is more urgent, for here something strange seems to happen: If it is clear that a spiritual (i.e., an immaterial or intentional) mode of being is higher than a material mode, then here the lower seems to cause the higher, for the equivocal agent (the white wall) possesses the form of the effect in an *inferior* way than it is received in either patient (the eye or the air), since both receive it spiritually. Indeed, the difficulty is most apparent with the eye, for it possesses the sensible species not only intentionally (as does the transparent medium) but cognitively, such that it *knows* the white in virtue of it. It is not readily apparent how we can think of the white wall as having the form in a “more eminent way.”

This puzzle is compounded by the fact that the *Sentences* passage is not unique, for St. Thomas offers a similar example in the *Prima pars*, in the course of showing that truth is principally a thing of the intellect. There he entertains the objection that whatever is the cause of something must be what it causes all the more so, and since real things outside the mind cause the

²³ IV *Sent.*, d. 44, q. 3, a. 1, qcla. 3, ad 2.

truth of our thoughts, these things must be true as well. Saint Thomas responds in terms of equivocal causality:

Although the truth of our intellect is caused by the thing [*a re*], yet it is not necessary that the account of truth is found there foremost [*per prius*], just as neither is the account of health found foremost in the medicine rather than in the animal. For the medicine's power, and not its health, causes the health [of the animal], since it is not a univocal agent. And in a similar way the thing's existence [*esse rei*], not its truth, causes the truth of the intellect.²⁴

Again we find what amount to two more examples of equivocal causality. If medicine were the sort of thing that causes health by being healthy, it would be a univocal agent. In fact, however, medicine causes health without being healthy—taking the word univocally, to describe a condition exclusive to organisms. Rather, medicine possesses health, not as a constitutive order and equilibrium among organs and humors, but as a power to bring about this order. Medicine is rightly called “healthy,” of course, but this is an equivocal (or better, analogical) use of the word, and (more importantly for our concerns) medicine clearly does not possess health in a higher or more eminent way than does the animal. Likewise, St. Thomas indicates that the real existence of something is an equivocal cause of the mind's conforming to it. This amounts to another version of the example of the white forming the eye, for St. Thomas here says that what is truth in color vision preexists within the color in the visible object and its ability to effect that truth in the eye.

Still other examples of equivocal agents that seem to bear the form they give in a lower way are found in St. Thomas's commentary on Aristotle's discussion of the likeness between an agent and its effect in book 7 of the *Metaphysics*. He enumerates several examples of agents and generations that are “in no way univocal,” where the “generated thing's entire form does not itself precede in the generator, but only a certain part of it, or a certain part of a part.”²⁵ After again giving another version of the medicine example—here hot medicine is the equivocal

²⁴ *STh* I, q. 16, a. 1, ad 3.

²⁵ VII *Metaphys.*, lect. 8 (1446). See also Aristotle, *Metaphys.* 7.9.1034a22-33.

cause of the heat that is “a part of health, or is something leading to a part of health”²⁶—St. Thomas elaborates on how Aristotle modifies the example by introducing local motion into the causal sequence:

When heat is generated through a motion, the heat is in a certain mode in the motion itself as in an active power. For the very power of causing heat, which is in the motion, is something of the genus of heat. And this heat existing by power within the motion effects the heat in the body, yet not by a univocal generation but by an equivocal one, since the heat in the motion and in the hot body is not of a single account [*unius rationis*].²⁷

Aristotle and St. Thomas are here somewhat ambivalent on the exact relation between heat and health. Health either contains in its notion a certain mean body temperature, or this body temperature itself causes something integral to health. Perhaps it is to clarify the relationships of equivocal causality he is considering, then, that Aristotle replaces the example of hot medicine causing the salubrious heat in the sick man with a heat source of a different sort: motion—more specifically, Aristotle says earlier, “the doctor produces heat by friction [*tēi tripsei*]” (1032b26). Just as the man’s heating is an equivocal cause of his healing, so is the therapeutic massaging of his body an equivocal cause of the doctor’s heating of the man and therefore even of his healing.²⁸ Now, it is true that local motion’s natural priority over alteration renders more intelligible the notion that rubbing might be said to bear in a more eminent way the heat it brings about. Nevertheless, like the medicine, this rubbing motion does not obviously contain health itself in a more eminent way than does the animal. Thus, it is not clear that every agent St.

²⁶ VII *Metaphys.*, lect. 8 (1446).

²⁷ *Ibid.* (1448). Although Aristotle gives the illustration of the motion causing heat in turn causing health in 9.1034b27-30, he had already brought it up in 7.1032b1-b32. In several other places, Aristotle notes that it is in the nature of motion to heat and ignite bodies; see *De Caelo* 2.7.289a11-35; *Meteor.* 1.3.341a17-28; for St. Thomas’s reflections, see also I *Meteor.*, lect. 5 (33-35); II *De Caelo*, lect. 10 (387-88, 391).

²⁸ Here the modern kinetic theory of heat may render plausible the idea of vibratory motions as possessing heat in a higher, more eminent way; see note 69. Indeed, the Maxwellian notion of energy as a whole suggests that one form of energy may be an equivocal cause of another.

Thomas calls an equivocal cause must possess the form in a more eminent way.

As the *Metaphysics* passage continues, Aristotle offers several more examples of equivocal agents, and again they appear to be inferior to their effects. Comparing the generative power of an animal's seed to the aforementioned causality of the architect, St. Thomas glosses Aristotle by saying that

A seed works toward a generation just as do those things that come to be through an art. For just as the architect is not actually a house, nor does he have the form that is the house in act but in his capacity, so too the seed is not the animal in act, nor does it have the soul that is the animal's form in act but in its capacity alone. For in this way there is within the seed a formative power that is related to the matter of conception just as the form of the house in the mind of the architect is related to the stones and lumber—except that the form of the art is wholly external to the stones and lumber, whereas the power of the seed is intrinsic [to the matter of conception].²⁹

Just as the architect is an equivocal cause of the house, so is the seed an equivocal cause of an animal. Saint Thomas sheds some light on this possession “by capacity” (*potestate*) in words similar to the aforementioned passage in the *Sentences* commentary: The architect has the form of the house “not indeed according to the same mode of being [*modum essendi*]” as does the house itself, that is, “not according to a material existence [*esse materiale*], but according to the immaterial existence [*esse immateriale*] that it has in the mind of the artisan.” Thus, in a way “this generation is partly due to something univocal, with respect to the form, but partly due to something equivocal, with respect to the existence of the form in the subject.”³⁰ So the builder is related to his materials in the same way that the parent's seed is related to the matter disposed to become a new life. Yet, just as the mode of existence of the house-form in the builder's mind is distinct from that in the building materials underlying the finished house, so too the animal's seed possesses the form it will educe in a different mode than does the newly conceived animal.

²⁹ VII *Metaphys.*, lect. 8 (1451); see *Metaphys.* 7.9.1034a34-b3.

³⁰ VII *Metaphys.*, lect. 8 (1445); see *Metaphys.* 7.9.1034a22-24.

Nevertheless, St. Thomas points out a significant distinction between artificial and natural generations as regards univocal and equivocal causality:

However, although animal generation from seed is not from the seed as from a univocal [agent] (since the seed is not an animal), nevertheless that from which the seed is [generated] is in a certain way univocal with that which comes to be from the seed. For the seed comes to be from an animal. And in this there is a dissimilarity between natural generation and artificial generation, since it is not necessary that the form of the house in the mind of the artisan be due to a [different] house—although sometimes this happens, as when someone makes a new house according to the model of another. But it is always necessary that a seed be from an animal.³¹

An animal seed is always an instrument that an animal is using to generate another of its kind, and as such, not only is an animal from it, but it itself is from an animal: man generates seed, which generates man. Thus, a seed's agency is essentially intermediate. The house-builder, however, can invent the form of a house without any experience of another house—this is in fact what it is to have the art—so he is more of a first cause than is the seed. This reliance upon, and reduction to, a univocal agent would suggest that seed is an inferior sort of equivocal cause when compared to the artist, for the seed bears the form it educes in a more instrumental and less complete way than does the artist the form in his mind.³²

Now, because the seed and the medicine examples are instances of what are typically referred to as instrumental causes,³³ it is tempting at this point to jump to two conclusions. First, one might think that instrumental causality is a species of

³¹ VII *Metaphys.*, lect. 8 (1452).

³² It also suggests that the parent animal itself is an equivocal cause of the seed itself, although St. Thomas does not explicitly consider this. The relation of the animal to its seed seems quite similar to its relation to its hair, fur, and secretions in general, mentioned earlier. For just as the hair, sweat, tears, saliva, and various bodily fluids are naturally brought forth by the animal to protect, cool, cleanse, and feed itself, so too its seed is emitted during copulation to reproduce. The two ways the nutritive soul participates in immortality are at work here: self-nourishment/self-preservation and reproduction. See *De Anima* 2.4.415a20-b3.

³³ See, for instance, *STb* I, q. 118, a. 1.

equivocal causality, for some but not all of the latter are instances of the former. Second, one might therefore think that this distinction explains why St. Thomas sometimes says the equivocal agent has the form it gives in a *different* way and other times that it has it in a *more eminent* way, such that noninstrumental equivocal causes possess the form they give in a higher way, but instrumental equivocal causes possess it in a lower way. In order to show that this interpretation of St. Thomas, although taxonomically neat, is nevertheless not the whole story, we will need to consider more carefully what is meant by instrumental causality. By pointing out the ways in which equivocal agents are like and unlike instrumental agents, we will have greater precision in our understanding of the nature of equivocal causality and give greater clarity to St. Thomas's claim about the eminence of the preexisting form.

III. INSTRUMENTAL AND EQUIVOCAL CAUSALITY

A) *What Is Instrumental Causality?*

Saint Thomas employs the notion of instrumental causality in many contexts, usually with the basic description that “an instrument is what does not perform the action of the principal agent by its own proper power, but by the power of the principal agent.”³⁴ The most common examples he gives are a carpenter's tool, words, and the sacraments.³⁵ In each case, the instrumental cause is distinguished from both the principal cause and the ultimate effect; again, an instrument is essentially

³⁴ *STh* I-II, q. 112, a. 1, ad 1; see also *STh* I, q. 18, a. 3. As with equivocal causality, secondary literature devoted to instrumental causality is scarce, and I would suggest that Fr. Romanus Cessario's recent charge that theologians need to think more carefully about the metaphysics of sacramental causality (“Sacramental Causality: *Da Capo!*,” *Nova et Vetera* 11 [2013]: 307-16) is doomed if it does not begin with careful thought about instrumental causality. A few exceptional studies of instrumental causality are Sebastian Walshe, O. Praem., “The Notion of Instrumental Causality” (S.T.D. diss.; Rome: Pontifical Institute of St. Thomas, 2006); and J. Albertson, “Instrumental Causality in St. Thomas,” *The New Scholasticism* 28 (1954): 409-35.

³⁵ For the carpentry examples, see below. For grace and speech, see *STh* III, q. 62, a. 1; and *STh* III, q. 62, a. 4, ad 1.

a medium, a “that through which.” This intermediacy is what makes it unclear how or whether the instrument bears the form the effect receives. Sometimes St. Thomas seems to go so far as to simply deny that it bears the form it conducts, such as when he says that

An instrumental cause acts . . . only through the motion with which it is moved by the principal agent. Whence the effect does not become like the instrument, but like the principal agent (such as the bench does not become like the saw, but like the art that is in the mind of the artisan).³⁶

On other occasions he speaks with greater nuance by saying that “an instrumental agent need not possess the form that it induces as disposing that very thing [*ut disponentem ipsum*], except only through the mode of intention, as is clear of the form of the bench in the saw.”³⁷ Thus, the instrument is a strange sort of agent cause, for the effect is not strictly speaking being assimilated to it but rather to the principal agent. Insofar as agent causes as such make things become like themselves, it seems that an instrumental agent is not perfectly an agent.³⁸

Yet in order for an instrument to be an agent in any sense—and indeed, in order for the instrument to be, not only spatially, but *causally* between the principal agent and the ultimate effect—there must be some way in which the instrument bears the form the patient receives. One cannot give what one does not have, and thus what one in no way has one can in no way give.

An initial way of seeing this comes from the universal experience of amateur fix-it men: there is a right tool for each job because of the congruence of the tool’s form or shape to what one wants to do, as anyone using a pipe wrench when a crescent wrench is called for learns, to his grief. Saint Thomas notes this by saying that

³⁶ *STh* III, q. 62, a. 1.

³⁷ *IV Sent.*, d. 5, q. 2, a. 2, qcla. 5.

³⁸ Cajetan even goes so far as to cite Alexander of Aphrodisias to the effect that instruments “are not efficient causes,” “not properly” (*In I STh*, q. 4, a. 2). Aristotle himself appears to associate instrumental causes more directly with final causality than with agent causality (*Phys.* 2.3.194b35-195a2; *Metaphys.* 5.2.1013a35-b3).

an instrument has two actions. The one is instrumental, according to which it operates not in its proper power, but in the power of the principal agent. But it has another proper action that belongs to it according to its own proper form. For example, it belongs to the saw to cut by reason of its own sharpness, but to make a bed insofar as it is the instrument of the art. Moreover, it does not complete the instrumental action except by exercising its proper action, for it makes the bench by cutting it.³⁹

An instrument, in virtue of its own proper character, both amplifies and makes determinate the agency of the principal agent; one might even say that the reason we must use instruments is because of the disproportion between the aims of our intellect and the fact that we have only hands for accomplishing those aims. Thus, an instrumental agent is not simply a second domino in a series, as though to be an instrument is the same thing as to be a moved mover that could simply be swapped for the first or the third domino. An instrument, properly speaking, is something *of* the principal agent, almost a part of it.⁴⁰ For instance, the carpenter *himself* cuts the wood *by means of* the saw—which saw, left to itself, and even if placed right next to the wood, could do nothing at all. Thus, the principal agent draws the instrument up into its own agency such that it can actually be an agent, but through the instrument’s own character the principal agent is an agent of *this specific* effect. Otherwise the principal agent would have no reason to use this tool, or any tool, at all;⁴¹ the tool must have something of the effect within itself.

³⁹ *STh* III, q. 62, a. 1, ad 2.

⁴⁰ This is perhaps why one of the few divisions St. Thomas makes of instrumental causes is into genuine parts (i.e., those continuous with the principal agent, like the hand) and quasi-parts (i.e., those touching but not continuous with the principal agent, like saws). See *STh* III, q. 62, a. 5; and *ScG* IV, c. 41.

⁴¹ See *STh* I-II, q. 83, a. 1, ad 2. This is not to say that a principal agent must always employ an instrumental cause. To call one agent “principal” and the other “instrumental” is to say that the effect is more properly attributed to the former; as a result, a principal agent often can bring about the effect without the use of the instrument, either by means of a different one or even by itself (as when we admiringly say someone did something “with his bare hands” when one usually uses a wrench, or a bottle opener).

But there is a deeper way of seeing that the instrument bears the form of the effect, albeit in an appropriately intermediate manner. Saint Thomas will say that, whereas

the power of the principal agent possesses an existence enduring and complete in nature [*permanens et completum esse in natura*], the power of the instrumental agent possesses an existence going across from the one into the other, and an incomplete existence [*esse transiens ex uno in aliud, et incompletum*], just as motion too is the imperfect act [going] from the agent into the patient.⁴²

Thus, just as while something is being moved into a new place, it does not have the actuality the agent is in the process of giving it, so too an instrument while being employed does not possess the form it communicates. Nevertheless, it is not true that the body being moved in no sense has the place it is entering, and nor is it meaningless to ask *where* the moving body is; likewise, one cannot say the instrument in no sense has the form, for the latter passes through the former—otherwise this would really be action at a distance.⁴³ And while the instrument as such participates in this higher agent causality in a transitory way (for it lasts only as long as the principal agent is using it) the instrument is transferring, and therefore bearing “through the mode of a flowing intention [*intentionis fluentis*],”⁴⁴ the form which is more static in the mind of the agent and which he intends to put into the patient. Nor is this principle limited to the instruments of intelligent artists. In the case of the aforementioned colored object, the visual medium instrumentally (and yet while remaining transparent) bears the color to the eye.

⁴² *STh* III, q. 62, a. 4.

⁴³ On St. Thomas’s rejection of action at a distance and its connection to instrumental causality, see my “The Impossibility of Action at a Distance,” in *Wisdom’s Apprentice: Thomistic Essays in Honor of Lawrence Dewan, O.P.*, ed. Peter Kwasniewski (Washington, D.C.: The Catholic University of America Press, 2007), 173-200.

⁴⁴ *IV Sent.*, d. 1, q. 1, a. 4, sol. 4.

B) Instrumental Causality in Comparison to Equivocal Causality

Having now reviewed what instrumental causality is, we turn to whether it makes sense to think of it as a species of equivocal causality. Besides the fact that some of the aforementioned equivocal causes are also instrumental causes (medicine of health, seed of animal), equivocal and instrumental causes do, after all, hold in common the mark of bringing about an effect without possessing the form in the way that the effect does.

Nevertheless, not only does St. Thomas never assert that instrumental causality is a species of equivocal causality, but he explicitly separates them. Thus, in the *Sentences* commentary he says:

The agent is twofold: one principal and another instrumental. A principal agent, however, when it makes a thing like itself, must possess the form that it induces through its action (in univocal agents), or some more noble one (in non-univocal agents). But an instrumental agent need not possess the form that it induces as disposing that very thing, except only through the mode of intention, as is clear of the form of the bench in the saw.⁴⁵

Thus, an equivocal agent has more in common with a univocal one than with an instrumental one, for the former two are principal agents, and the instrumental cause is in a class all its own.

Further, we may consider the aforementioned example of the white wall affecting the medium and the eye. As we saw, St. Thomas considers the white to be an equivocal cause of the white species in the air, which in turn impresses itself upon the eye. Yet the species in the air does not itself seem to be an equivocal cause of the species in the eye, for in both cases the white-wall-oriented form seems to be present in the same way, namely, such that it “intends” the white wall. It is true that only in the eye is the form possessed in a knowing organ, forming the foundation for an act of vision; nevertheless, at the level of

⁴⁵ IV *Sent.*, d. 5, q. 2, a. 2, qcla. 5. See also IV *Sent.*, d. 1, q. 1, a. 4; *De Malo*, q. 4, a. 3; and *STh* III, q. 62, a. 3, for similar divisions between instrumental causes, on the one hand, and both univocal and equivocal ones, on the other.

the impression of this form—that is, immaterial existence in a transparent body—the eye and the air receive the form in fundamentally the same way.⁴⁶ In short, it seems that the transparent medium conducting the white to the eye is a univocal cause. And yet, clearly the transparent medium is an instrumental cause: it is causally between the white wall and the eye, communicating the white to the eye in a “flowing” manner, such that it accomplishes something that exceeds its proper powers. At least one instrumental cause is not an equivocal cause.⁴⁷

Although instrumental causality is not a species of equivocal causality, the likeness between them is enough to draw the more modest conclusion that the same agent cause might be called instrumental from one perspective and equivocal from another. They might be one in subject but different in account. If one attends only to the sheer otherness between an agent’s mode of possessing the form it gives and the effect itself, one would call the seed, for example, an equivocal cause of animal life; yet if one attends also to that agent’s intermediacy in causality, and especially the incomplete character of its possession of the form it transmits, one would call the seed an instrumental cause of animal life. Right away, then, one might conclude that this is why St. Thomas speaks of equivocal agents in the two aforementioned ways, that is, as possessing the form in a different way and in a more eminent way. The former is looser so as to include the equivocal agents that happen also to be instrumental agents, whereas the latter gets more to the essence of equivocal agency. But even here caution is needed.

⁴⁶ This is why, Aristotle and St. Thomas say, both the air and the lens and eye jelly must be transparent. Before the act of vision is completed or expressed in virtue of the sensitive soul, the white species is present in the eye in the same way as in the air. See II *De Anima*, lect. 14 (418); and *De Sensu*, lect. 4 (48-54), based on *De Sensu et Sensato* 2.438a10-16.

⁴⁷ A simpler instance would be where the species-bearing air acts upon another transparent medium (say, water) and communicates the species to it (though it would be refracted); clearly this is univocal instrumental causality. Others are imaginable, especially in the realm of human art, such as machines that make other machines, or vehicles designed to transport other vehicles.

On this interpretation of the two ways of speaking, if it be taken absolutely, any equivocal cause that does not bear the form in an unambiguously more eminent way would have to be an instrumental cause. But again the aforementioned examples check this generalization. We may consider yet again the example of the white object equivocally causing the white in the medium and the eye. Here, as St. Thomas notes, the form materially determining the body engenders a like form spiritually determining the transparent air and eye, an equivocal cause that bears the form in a mode inferior to the mode in which it is received—and yet the white wall is not an instrumental cause of the formation of the transparent medium, but its principal cause. Likewise, the real existence of an enmattered form, we saw, is an equivocal cause of the truth of one's knowledge of it, and for the same reason the form exists in a higher mode (that is, intellectually) in the mind, and yet the real being is not naturally conceived as an instrumental cause of the knowing but as a principal cause.

Again, a more restrained conclusion seems in order. Some instrumental causes are equivocal and some equivocal causes are instrumental, and it is more appropriate to say that the instrumental equivocal cause bears the form it gives in a different (because inferior) way than to say that it bears it in a more eminent way—but this is not to affirm that *only* instrumental equivocal agents bear the forms they give in this lower way. It would be safer to say that the difference between the two ways St. Thomas speaks should not be divided so sharply. Perhaps all equivocal agents possess the forms they induce in a more eminent way *in some measure*—though what is meant by such “greater eminence” may differ widely, to the point that it would often be less confusing simply to describe this mode of possession as just “different.” I will support this view shortly, but in order to do so we must discuss another sort of agent causality that is closely related to equivocal causality, namely, universal causality.

IV. UNIVERSAL AND EQUIVOCAL CAUSALITY

A) *What Is Universal Causality?*

Like equivocal causality, with which it is easily confused, universal causality is sorely neglected in Thomistic discussions of causality.⁴⁸ This may be partly for the same reasons, as again the sun is St. Thomas's typical non-divine example; likewise, when Aristotle famously but cryptically says that "the sun and a man generate a man,"⁴⁹ he seems to have in mind the sun functioning as a universal cause. Saint Thomas introduces this sort of causality even more frequently than he does equivocal causality, and its fecundity in sacred theology is vast and underappreciated.⁵⁰ Indeed, a deeper understanding of it appears to hold the key for resolving several unnecessarily perennial disputes in theology and philosophy.⁵¹ The following is only an initial foray into this subtle and difficult matter.

⁴⁸ Some of the few exceptions I have encountered are Ronald P. McArthur, "Universal in *praedicando*, Universal in *causando*," *Laval théologique et philosophique* 18 (1962): 59-95; and Oliva Blanchette, *Philosophy of Being: A Reconstructive Essay in Metaphysics* (Washington, D.C.: The Catholic University of America Press, 2003), 479-84, although this latter deals with it exclusively in terms of divine universal causality. Rarely is universal causality considered precisely as such. For instance, Dodds's excellent treatment of God's transcendent action (*Unlocking Divine Action*) is implicitly about universal causality, but the expression is not used.

⁴⁹ *Phys.* 2.2.194b14.

⁵⁰ Universal causality turns up in every part of the *Summa*, often at crucial junctions. In the *Prima pars* St. Thomas argues that God, and even God's will, is the universal cause of all that is (*STh* I, q. 19, aa. 6, 7, and 11; q. 45, a. 5; q. 49, a. 3). In the *Tertia pars* he argues that the incarnate Son of God, and specifically his passion, is the universal cause of salvation (*STh* III, q. 4, a. 4, ad 1; q. 7, a. 11; q. 52, a. 1, ad 2). Likewise, in the *Secunda secundae* he explains that just as the general virtue of legal justice is a universal cause of the acts of the other moral virtues, so too the theological virtue of charity is the universal cause of all virtuous acts (*STh* II-II, q. 58, a. 6). In the *Prima secundae* he even speaks of the vice of arrogance as a quasi-universal cause of the other vices (*STh* I-II, q. 162, a. 2).

⁵¹ I have in mind the reconciliation of predestination and free-will, the relation between chance and per se causality, and the proper understanding of the common good, among others.

Because most of the places where St. Thomas speaks of universal causality center on God, who is really only the paradigm and most perfect instance of universal causality, relying upon them exclusively can lead to overstating the basic nature of this causality. Hence, the generality in the second book of Aristotle's *Physics*, in the enumeration of the kinds and modes of causes, is a helpful starting point. Noting an ambiguity in what Aristotle says about prior and posterior modes of causality (*Phys.* 2.3.195a30), St. Thomas presents two ways of understanding Aristotle:

One should notice, however, that "the universal and the proper" or "the prior and the posterior" cause can be taken either according to a commonness of predication (following the examples posited here of the physician and the artisan), or according to a commonness [*communitatem*] of causality (as when we say the sun is a universal cause of heating, but fire a proper cause).⁵²

The first usage of the expressions "proper" or "particular cause" and "universal cause" designates the universality of the predicate describing the cause; apparently this is the sense that Aristotle chiefly has in mind, since his examples are the agent named as "physician" and as "artist," respectively. Nevertheless, St. Thomas takes the opportunity to mention *another* mode of causality that equally deserves these names, where the differences are not just according to our manner of contemplating the causes but in their manner of being a cause.⁵³ As he continues, St. Thomas explains the difference between causing universally and causing particularly:

For it is manifest that every power extends to certain things according as they have in common one account of the object [*communicant in una ratione obiecti*]. Also, inasmuch as a power extends to more things, so far is it necessary that that account be more common [*communiorem*], and if a power is proportioned to the object according to the latter's account, it follows that a higher cause acts according to a form more universal and less contracted

⁵² II *Phys.*, lect. 6 (189); he makes this distinction also in *STh* I-II, q. 45, a. 5.

⁵³ Hence the two uses of "universal cause" are sometimes distinguished under the names *universale in praedicando* and *universale in causando*. For the sake of simplicity, however, in the rest of this article I will refer to the universal *in causando* simply as a universal cause.

[*magis universalem et minus contractam*]. And one must consider the order of things in this way, because inasmuch as some things are higher among beings, so far do they have less contracted forms, and forms more dominant over matter, which restricts [*coarctat*] the power of a form.⁵⁴

In short, since a cause must be proportioned to its effect, the very same effect can simultaneously have more than one cause just as the effect can be considered in a more or less universal manner. This entails, of course, that a more universal cause brings about a greater number, and even a multitude of kinds, of effects than does a particular cause. Whence, St. Thomas continues the connection with universal predications by adding that since alteration is the genus of heating, and the sun and the heavenly bodies are universal causes of heating, then “if fire is the primary thing that heats things [*primum calefaciens*], then the heavens are not merely the primary thing that heats things, but the primary thing that alters them [*primum alterans*].”⁵⁵

This should not be understood to mean that the universal cause causes only part, or one aspect, of the effect, while the particular cause causes the remainder. This would be to misunderstand how universal predicates themselves name real things, for “man” and “animal” name the same reality (namely, Socrates) but in different ways, according to how determinate our thoughts are about Socrates. Further, this view would destroy the unity of the effect, implying that the effect is an accidental whole, since *as a whole* it would have no *per se*

⁵⁴ II *Phys.*, lect. 6 (189). Because of this *communitas*, St. Thomas occasionally uses the name *causa communis* or *communior* (*STh* I, q. 44, a. 2), or even *causa generalis* (*STh* I-II, q. 46, a. 1), to name universal causes. It is noteworthy that, should someone assert that universal causality is unintelligible as a distinct mode of causality, we do still speak this way when we call the leader of an army a “general.” Obviously this is a generality not of predication but of power. The same goes for the longstanding convention of calling the political heads of medicine, law, and a religious order the “surgeon general,” “attorney general,” and “superior general,” respectively. There is nothing military intended in calling these figures “generals” but rather something pertaining to scope and leadership over other surgeons, attorneys, and superiors. Likewise, general anesthetic is not anesthetic considered as a genus, but something that anesthetizes generally, i.e., the whole body.

⁵⁵ *Ibid.*

cause.⁵⁶ Rather, both causes bring about the entire effect, the particular cause in a more limited way and the universal cause in a more encompassing way, for the particular cause brings about only *this* instance of the effect (this man Socrates) and therefore not the effect in virtue of *what it is* (Socrates as man), which is due to the universal cause.⁵⁷ As St. Thomas says,

In the degree that a cause is higher, to that degree it is more common and more thoroughly an agent [*communior et efficacior*], and in the degree that it is more thoroughly an agent, to that degree it more profoundly enters into the effect [*profundius ingreditur in effectum*], and from a more remote potency this very cause leads the effect into act. . . . Thus, if we consider the individual agents, every particular agent is immediate to its own effect; if, however, we consider the power by which the action comes to be, thus the power of the higher cause will be more immediate to the effect than the power of the lower. For the lower power is not conjoined to the effect except through the power of the higher; whence it is said in the book *de Causis* (prop. 1) that the power of the first cause acts on the thing caused in a prior way [*prius*], and more vigorously [*vehementius*] enters into it.⁵⁸

As in the case of the principal and instrumental cause, a universal cause acts *through* a particular cause, rather than *alongside* of and *competing* with it. Thus, according to ancient cosmology, the sun does not merely heat bodies when there is no fire at hand to do so, as though acting as a backup fire; nor does it simply supply one degree of heat while the fire provides another, until the wood reaches ignition temperature. Rather, as a universal cause, the sun gives the fire itself, and all other agents of alteration, their efficacy as causes, and so it is at work even in the fire. For the fire bears within itself the power of the sun, and so the act of heating is even more fundamentally that

⁵⁶ See ScG III, c. 70, on the whole being caused by both the particular and the universal cause, not part by each. On all of the aforementioned difficulties, see McArthur, "Universal in *praedicando*, Universal in *causando*."

⁵⁷ Saint Thomas sometimes states this principle, perhaps too succinctly, by saying that the particular cause brings about *fieri*, whereas the universal brings about *esse*; for example, *STh* I, q. 104, a. 1.

⁵⁸ *De Pot.*, q. 3, a. 7. See also *STh* I, q. 79, a. 4.

of the sun than it is of the fire. Nothing about the effect simply escapes the reach of the universal cause.⁵⁹

B) Universal Causality in Comparison to Equivocal Causality

Is universal causality the same thing as equivocal causality? It is tempting to say yes. Besides the fact that St. Thomas calls the sun both kinds of cause, at times he uses the language of universal causality to describe an equivocal cause, for instance, when he says that “equivocal generations are prior to univocal generations in this, that equivocal causes hold their influence over the whole species [*habent influentiam supra totam speciem*], but univocal causes do not, but only over one individual.”⁶⁰ On one occasion he almost appears to equate them:

Although in predications it is necessary that equivocals be reduced to univocals, nevertheless in actions the non-univocal agent of necessity precedes the univocal agent. For a non-univocal agent is a universal cause of the whole species, just as the sun is the cause of the generation of all men. But a univocal agent is not a universal agent cause of the whole species (otherwise it would be the cause of its very self, since it is contained under the species); rather, it is a particular cause, relative to this individual, which it establishes in a participation of the species. Therefore a universal cause of the whole species is not a univocal agent. However, the universal cause is prior to the particular cause.⁶¹

Saint Thomas appears to be saying that every nonunivocal (i.e., equivocal) cause is universal, and every universal cause must be equivocal (for no univocal cause can be a universal cause). Thus, the evidence that, in St. Thomas’s mind, equivocal and universal causes (and therefore also univocal and particular causes) are

⁵⁹ See *STh* I, q. 46, a. 1, ad 6; q. 103, a. 7.

⁶⁰ *In Boet. de Trin.*, q. 1, a. 4, ad 4; see also *De Verit.*, q. 1, a. 4, ad 4; and *VIII Phys.*, lect. 10 (1053).

⁶¹ *STh* I, q. 13, a. 5, ad 1. Elsewhere St. Thomas makes a similar argument, especially as regards the divine causality of the very existence of a form; see *STh* I, q. 104, a. 1. There is, however, no mention of equivocal causality in this passage.

the same thing is not thin.⁶² In the following, however, I will try to show otherwise, both as to the truth of the matter and as to the mind of St. Thomas.

First, we may consider the obvious fact that the names do not seem to mean the same thing. Not only do the basic adjectives in the names in no way connote the same notions—“equivocal” does not mean the same thing as “universal” any more than “univocal” means the same thing as “particular”—but even in St. Thomas’s abovementioned explanation the meanings do not neatly align. An equivocal cause is one that has the form of the effect in a different and/or more eminent mode than the effect, whereas a universal cause is one that intimately causes all the individuals of a certain genus or species. It is clear, then, that even if every equivocal cause were universal, and every universal cause equivocal, the names at least indicate really distinct *rationes*, distinct ways of considering a given cause.

One can make the distinction sharper still, for although all equivocal causes must be agent causes, not all universal causes are agent causes. Saint Thomas explicitly speaks of universal *final* causes as well. For instance, he points out that a common good must not be universal in the way a predicate or a concept is, but precisely as a cause:

Works are indeed in particulars, but those particulars can be referred to the common good—not, in fact, a good common with the commonness of a genus or a species, but with the commonness of a final cause [*non quidem communitate generis vel speciei, sed communitate causae finalis*], according to which the common good is called the common end.⁶³

In fact, a moment’s reflection makes it clear that any sound understanding of the common good entails universality precisely as a cause, a final cause, for otherwise a common good is nothing other than the very concept of a particular good, a

⁶² Likewise, in the few discussions of equivocal or universal causality I have encountered in the secondary literature, authors consistently seem to use the designations interchangeably.

⁶³ *STh* I-II, q. 90, a. 2, ad 2; on universal agent vs. universal final causes, see also *STh* I-II, q. 2, a. 5, obj. 3 and ad 3.

universal consideration of many particular goods.⁶⁴ The common good, however, is not simply what particular goods all have in common, but a distinct and higher good, which is therefore that for the sake of which these particular and private goods themselves are sought. Whether the common good one has in mind is that of a family, a city, or the kingdom of God, it is also the good of the members and is more fundamental to their desire than the corresponding private goods. Likewise, it is not a stretch to say that prime matter, the ultimate underlying of all coming to be, is a (indeed, *the*) universal material cause. For every other matter—whether elements of a compound substance, or organs of an animal, or any material part of a whole—has its potency to be in some qualified way (*esse tale*) through its underlying matter’s potency to be without qualification (*esse simpliciter*), and this potency is present in all coming to be.⁶⁵ Similarly, there seem to be several instances of universal formal causality. An exemplar is an external form that causes all other forms imitating it, its images;⁶⁶ again, the form of the universe, which is its order, is a universal cause of all of the forms of its parts, which seems to be what St. Thomas means when he speaks of a particular failing in the universe being unnatural relative to particular natures but natural relative to “universal nature”;⁶⁷ in addition, even substantial form seems to be a universal formal cause of proper accidents.⁶⁸ Universal causality seems broader than equivocal causality.

⁶⁴ See Charles De Koninck, “The Primacy of the Common Good,” in *The Writings of Charles De Koninck*, vol. 2, ed. and trans. Ralph McInerny (Notre Dame, Ind.: University of Notre Dame Press, 2009), 96-97.

⁶⁵ One might even say that letters are universal material causes of all speech, even while granting that syllables and words are particular material causes of the same.

⁶⁶ This would be especially true of the divine ideas; see *STh* I, q. 6, a. 4; and q. 15, a. 3.

⁶⁷ See *STh* I, q. 22, a. 2, ad 2; q. 92, a. 1, ad 1; q. 99, a. 2, ad 1.

⁶⁸ A substantial form’s emanation of its properties is often described by way of an analogy with agent causality. Nevertheless, since the substance and accident are one in subject, this is only *like* agent causality. There is at least as much likeness between formal causality and the way that the form by which a thing is without qualification originates the form by which a thing is qualifiedly.

Perhaps one might grant this and still propose that *among agent causes* a universal and an equivocal cause are the same reality, though each designation expresses a different aspect of that causality. This still seems to make too strong an association, though, and the difference between their accounts points toward another proposal: the idea of an equivocal cause seems to *say less* than the idea of a universal cause, and this suggests that universal (agent) causality is a mode, determination, and perhaps even a *species* of equivocal causality. That is, every universal agent is an equivocal agent, but the converse is not so. Again, what makes this suggestion most convincing are the examples enumerated above in part II.

Certainly some of these examples can intelligibly be described as universal agent causes as well. For instance, like the sun and God, the architect (or any artist, for that matter), because he acts in virtue of the art, is a cause of an entire genus of houses, unlike an underling who is a particular cause because he works only at the artist's direction, and perhaps only on one house, or even part of one house. The same might be said for an object of knowledge: the object, insofar as it is a real being, seems to be a universal cause of the truth or awareness of it in all who can know it. Analogously, the white of this wall is a universal cause of our knowledge of it through its multiplying its species in the air and eyes by emanating in all directions. Again, an animal seems to be a universal cause of all its seed, for it alone can generate offspring like itself, and it always does so through its seed.

Nevertheless, many of the other examples are clearly particular causes. This hot medicine is a cause only of this man becoming healthy; it is not a panacea, even for this one man, as he could be healed by other means or from other diseases. Likewise, friction does not seem to be the universal cause of all heat, much less of all health.⁶⁹ And it is clearest of all that an

⁶⁹ This is true even in the contemporary account of heat where not all heat is caused by, or consists of, chaotic motion, as there is also radiant heat attributable to light, as victims of sunburn will attest; St. Thomas himself notes this as well in *In II De Caelo*, lect. 10, n. 393. At any rate, the kinetic theory has a tendency to reduce this example to *univocal* causality since the common interpretation of it is that heat is *nothing more*

animal's seed is not a universal cause, as it causes only one offspring.⁷⁰ Thus, these examples fall short of the encompassing causality that a universal agent possesses. Indeed, part of the reason that they cannot be universal causes is that they are also instances of instrumental causality. For the transcendence of a universal cause clearly implies principal causality.

If this account is correct, then, when St. Thomas says (in *STh* I, q. 13, a. 5) that "a nonunivocal agent is a universal cause of the whole species," he should not be interpreted as asserting that *all* nonunivocal agents are universal causes, but only that some (and perhaps the highest ones) are. The procedure of the argument suggests this, for it is replying to the objection that, as with equivocation in speech, all equivocal causes presuppose univocal causes. To undermine this assumption, St. Thomas needs only to show that this is not necessary, but in fact he goes further and shows that all univocal causes in fact presuppose equivocal causes, namely, universal equivocal causes. His point is that equivocal causes are prior to univocal causes precisely because there must be a universal cause of the effect's species prior to the effect as an individual, and such a cause would have to be equivocal (otherwise it would itself have the form of the effect univocally and therefore be the cause of itself). Thus, it is neither necessary nor relevant to St. Thomas's argument that his superficially unqualified claim be taken universally. This reading also fits the fact that it is precisely *instrumental* equivocal causes that seem least of all like universal causes, for instrumental causes least clearly bear the form of the effect in a more eminent mode, which a universal cause must do because of its scope over, and intimacy with, the effect.

Moreover, although not every equivocal cause is univocal, it is indisputable that every universal cause is equivocal, for the

than chaotic molecular motion, rather than its effect; thus, on the modern theory the rubbing of my hands is nothing more than directed molecular collisions resulting in more molecular collisions, which only *appear* to be the distinct reality called "heat."

⁷⁰ Indeed, the *parent* appears to be a better candidate for this universal causality of the (potentially many) offspring. Though of course the parent is a univocal cause of its children, so to call even the parent the universal agent would require some qualifications. But see note 71 below.

argument St. Thomas makes—to cause an entire genus requires not being a member of that genus—is decisive.⁷¹ This means, in turn, that another field of examples of equivocal causality opens up. For example, besides the theological examples mentioned above,⁷² St. Thomas speaks of the ruler of a city, the general of an army, and even the intellect of the inner senses as being universal causes.⁷³ Likewise, the common sense power, by which we sense our act of sensing and discern one sense power from another, he says is “common” in the mode of a universal cause, for it is a cause of sensation as such.⁷⁴ Likewise, prudence is a universal cause of each of the moral virtues.⁷⁵ At any rate, armed with the notion of universal causality as a kind of equivocal cause, we can now revisit the matter of the “more eminent” way in which the equivocal agent bears the form it gives.

V. GRADATIONS OF EMINENCE

A) *Preliminaries to a Survey*

To illuminate the idea of the more eminent mode with which the effect pre-exists in the equivocal agent, we will proceed through a sort of *manuductio*, or “leading by the hand,”⁷⁶

⁷¹ The only exception I can see to this might be Adam in relation to the human race. If man generating man is the paradigm example of univocal causality, surely Adam is a univocal but universal cause; St. Thomas discusses this most clearly in considering Adam’s sin and its transmission to the race (*STh* I-II, q. 81, a. 1). Yet perhaps there is something of equivocal causality even here, as Adam is not merely a man, but (as his name in Hebrew indicates) Man, and he is not merely a father who happens to be first in the order of generation, but a father who bears all his offspring in his person in a way that no other father after has or can.

⁷² See note 50 above.

⁷³ See *STh* I-II, q. 1, a. 2, ad 3; q. 6, a. 8; and q. 18, a. 7, respectively.

⁷⁴ See *STh* I, q. 1, a. 3, ad 2; and q. 57, a. 2; q. 78, a. 4, ad 2.

⁷⁵ See *STh* I, q. 55, a. 3, ad 3; see also I-II, q. 60, a. 1. Saint Thomas draws several other examples of universal causality from Pseudo Dionysius in his commentary on the *Divine Names* (c. 4, lect. 4; and c. 5, lect. 1 and 2).

⁷⁶ On *manuductio*, see Marie I. George, “Mind Forming and *Manuductio* in Aquinas,” *The Thomist* 57 (1993): 201-13.

reviewing some of the examples encountered above, in combination with a series of oppositions and negations, in order to manifest the range of degrees of eminence. We will begin by excluding a possible misunderstanding about what this greater eminence might consist in, namely, a mere greater intensity.

Saint Thomas's paradigm case of the opposite of an equivocal cause is fire heating a piece of wood. They are univocally called "hot": one does not mean different things when one calls a fire and a heated piece of wood "hot." The fire is of course much *hotter* than the wood, but this very use of the comparative indicates that the word is being used univocally: whatever is *hotter* than another is *as hot* as that other, only more so. As straightforward as this difference in degree is, it is not what St. Thomas intends when he says that the equivocal agent has the form of the effect in a different or more eminent mode. When he distinguishes three kinds of likeness between agent and patient, he adds that some things

are called *like* that share in a form according to the same account, and not according to the same mode, but rather according to more and less (for example, the less white is said to be *like* the more white). And this is an imperfect likeness. . . . [H]owever, some things are called *like* that share in the same form, but not according to the same account, as is evident in non-univocal agents.⁷⁷

Like the duller and the brighter white, the heat of the wood and that of the fire differ only in degree (*modus*), not in account (*ratio*). However, with an equivocal agent, though both agent and patient might be called "hot," there is not even a likeness of account; the sun is not merely much *hotter* than the wood or the fire (as we might say now), but it is called "hot" in a different way altogether. One might say that the sun is so much hotter than the wood that one no longer means the same thing by the word when one calls it "hot."⁷⁸

⁷⁷ *STh* I, q. 4, a. 3.

⁷⁸ Hence we see better why St. Thomas describes an equivocal cause as possessing the form in a different account *and* mode (see note 9). He goes on in this same passage to say that, although the equivocal agent is never one in species with its effects, often they are one in genus (for both the sun and wood are bodies). Even this, however, is not

With that simple solution ruled out, we can turn now to the more difficult task of articulating how a form can exist more eminently. We first note that the form as possessed by the agent differs from the form as possessed by the patient in a nonrandom way: the difference derives from the natures of the possessors. Saint Thomas often distinguishes agent causes in virtue of this difference:

The agent cause is twofold: One agent is proportioned to the thing susceptible to its effect—whence it induces in the effect a form of the same species and account, as in all univocal agents. . . . But another agent is not proportioned to the one receiving its effect—whence the effect does not attain the species of the agent, but only a certain likeness of it, as much as it can, as in all equivocal agents.⁷⁹

Thus, the axiom that whatever is received is received according to the mode of the receiver is the reason why not all agents are univocal. In a way, it is the *patient's* “fault” that the agent is equivocal rather than univocal, since the patient receives “as much as it can” (*quantum potest*), but it cannot receive all that is there in the agent.⁸⁰ So too, if there is a gradation among the fundamental capacities of patients, there will also be a gradation in the greater eminence in modes in equivocal agents. With this principle in hand we can look again at our examples.

B) Universal Equivocal Causes as Clear Cases of Greater Eminence

Among equivocal causes, universal causes seem to be the ones that would most manifestly possess the form they induce in a more eminent way. Because they generate a thing not merely

necessary for a cause to be an equivocal cause, for God does not share a genus with anything; he is still, however, one with his creatures “according to a sort of analogy, just as existence itself is common to all things” (*STh* I, q. 4, a. 3). For similar language, see *STh* I, q. 6, a. 2; and *ScG* III, c. 24.

⁷⁹ *II Sent.*, d. 1, q. 2, a. 2. See also *II Phys.*, lect. 11 (242).

⁸⁰ Hence, elsewhere St. Thomas defines equivocal causality as happening wherever the patient is “not perfectly assimilated to the agent” because it is not equal in power to it (*De Pot.*, q. 7, a. 1, ad 8).

as an individual but as an individual of this species or genus, they must bear a multitude of different particular forms in a way that somehow overcomes their opposition and mutual exclusion. We may consider the sun example again. Heat is not the only effect that once was attributed to the sun: Fire itself, the desiccation of bodies, the allegedly spontaneous generation of vermin in putrefying matter, and even of man himself in human generation are all effects of the sun, according to the medievals. In fact, St. Thomas says that the sun is the cause of all motions, changes, qualities, and substantial forms of generable substances.⁸¹ To possess such a panoply of diverse forms more eminently is somehow to possess them without their mutual diversity; it is to possess them in a more unified way.

Saint Thomas puts this very problem to himself in the aforementioned fourth question of the *Summa*, in the first two objections to the claim that God possesses within himself all the perfections of creatures. The objections read:

It seems that the perfections of all things are not in God, for God is simple, as was shown [q. 3, a. 7], but the perfections of things are many and diverse. Therefore all the perfections of things are not in God. Further, opposites cannot be in the same thing. But the perfections of things are opposites; for each species is perfected through its own specific difference, but the differences by which a genus is divided and the species are constituted are opposed. Therefore because opposites cannot be simultaneously in the same thing, it seems that not all the perfections of things are in God.⁸²

How can manifold distinct, and therefore contradictory and perhaps even contrary, perfections preexist in God, or indeed in any universal equivocal agent? Saint Thomas's reply draws on Pseudo-Dionysius:

⁸¹ For the sun as an equivocal agent cause of fire, see *De Pot.*, q. 7, a. 1, ad 8; of dryness, see *ScG I*, c. 31; of "certain animals" in putrefying matter, see *Comp. Theol. I*, c. 43 and *ScG IV*, c. 10; of man, see *Comp. Theol. I*, c. 198; *De Malo*, q. 4, a. 3.; and *VIII Phys.*, lect. 10 (1053); and of all motion, generation, life, and substances, including their manifold qualities, see *II Phys.*, lect. 4 (175); *STh I*, q. 4, a. 2, ad 1; *ScG III*, c. 24 (passim); and *In Div. Nom.*, c. 4, lect. 3 (312).

⁸² *STh I*, q. 4, a. 2, obj. 1 and 2.

“God exists not in a certain mode, but simply and without being enclosed thereby [*simpliciter et incircumscripse*] he holds in advance within himself the whole of existence uniformly [*uniformiter*]. . . . To the first, therefore, it should be said that “Just as the sun,” as Dionysius says in *Div. Nom.* v, “while remaining one and shining uniformly, possesses in advance within its very self uniformly [*in seipso uniformiter praeaccipit*] the substances of sensible things, and their many and diverse qualities, so much more so is it necessary that within the cause of all things there preexist, according to a natural union, all things.” And thus things that are diverse and in themselves opposed to each other preexist in God as one, without injury to his simplicity.⁸³

Saint Thomas uses similar language a little later in the *Summa*: In a universal cause, the effect is “unequal to the power of the agent cause,” so it “receives the likeness of the agent not according to the same account, but deficiently, such that what is in the effects dividedly and in a manifold way [*divisim et multipliciter*] is in the cause simply and in the same mode [*simpliciter et eodem modo*].”⁸⁴ A universal agent in some way—and God, the most universal of universal agents most unqualifiedly—unites and thereby possesses all the forms that it generates, although these forms, in their natural existence within their proper matter, are mutually opposed. In the single form of the universal agent they take on a mode of existence that suppresses their mutual exclusivity, because it supplies for their deficiency, and allows them to coexist in a noncompeting, and therefore simpler, way.

Of course this is all well and good in ancient cosmology. If it no longer appears that the sun is quite as elevated a cause as the ancients and medievals thought, then are there any clear instances of universal causes that bear in a unified way the manifold forms they bring about, other than God himself? Is there any evidence of this unification of opposites in the nonobsolete examples treated above? The answer is difficult, just as it is no longer easy to identify nondivine universal causes.

⁸³ *STh* I, q. 4, a. 2, corp. and ad 1.

⁸⁴ *STh* I, q. 13, a. 5; see also q. 57, a. 1. In the commentary on the *Divine Names* St. Thomas describes these as “united not through the mode of intermingling [*modum confusionis*], as stones are united within a wall, but through the mode of a certain unification [*modum unitiois cuiusdam*]” (*In Div. Nom.*, c. 5, lect. 1 [646]).

Nevertheless, I propose that we come close to such a clear case in the case of the architect.

The architect generates a house in virtue of the house-form within him. How is this so? The house-form in virtue of which he designs and builds is not merely the image or blueprint in his imagination. Anyone can have an image, even a detailed image, of something he wants to have, but only an artist has something in virtue of which such a house could be actually brought into being. The relevant house-form is not in the architect's imagination but in his practical intellect. Indeed, Aristotle in one place even says that "the form of the house in the intellect *is* the art."⁸⁵ But the intellect is formed not by particulars but by universals, and the practical intellect by universals as realizable in action or artifice. Thus, the architect creates the house in virtue of the universal house as present in his art. By the very universality of this understanding he can see what is the best form for the given matter and given plot of land, the skills of his underlings, and even the spending limit of the homeowner. This, then, is also why the art allows him to make not just *this* house, or even only *identical* houses, but perhaps a myriad of houses and buildings of different shapes and sizes, all depending on the possibilities contained within the scope of his art and the conditions under which it is to be employed.

The architect's equivocal causality is a sort of universal causality, where we can see that the art itself is, or contains in a unified and simple way, the multitude of different possible houses he might build. A given architect, then, although he is not a universal cause of "house" as such, is a universal cause of the houses *he* might build. Thus, while it is true that we do not usually name this cause by the effect (except denominatively, by calling him a *house-builder*), we do often name the effect by its cause: We often name the edifice after its architect, calling it a "Frank Lloyd Wright," or a photograph an "Ansel Adams," or a painting a "Caravaggio."⁸⁶ The artist's name itself comes to

⁸⁵ *Metaphys.* 7.9.1034a25.

⁸⁶ We could add that Stradivarius names a violin and a Rodin names a sculpture. Notice this way of speaking seems particularly true when the art in question is fine art,

name a quasi-species. Likewise, then, the artist continues to create a multitude of different houses because each by itself manifests his virtue in only a circumscribed and incomplete way, whereas he possesses the perfections of these otherwise mutually exclusive creations in a unified, and therefore more eminent, way.⁸⁷

A somewhat different, but perhaps even more straightforward, way of detecting a more eminent way of possession can be gathered from the instance of the white wall, which is, in a different way, also a quasi-universal cause. It is undeniable that the medium and the eye bear the sensible species in an immaterial mode, and therefore in a mode higher than the mode in which the wall bears it. Nevertheless, it is also obvious that the wall is white in a more complete way than is the medium or the eye. Saint Thomas states this simply by saying that “the form existing perfectly in the matter makes it be such in act (namely, fire or colored), but if it does not make something be such, then it is imperfectly in it (such as the form of the color in the air as in a thing carrying it).”⁸⁸ One might say that the wall is white according to its proper account, while the medium and the eye are white only according to a derivative account of what white is, even though the mode of existence of the white in the medium is generically higher than that in the wall. The impressed species of white is essentially a participation in the white of the wall, just as the individual white of

or has some share in fine art. Thus, for instance, we do not speak of the nourishing actions of a physician, a therapist, or a spiritual director as pertaining to arts where the agent is conforming the patient to himself in this way, such that each patient is a particular product or manifestation of the possibilities of the artist’s art. We certainly do not name the healed patient by the physician. This is probably both because the patients in question are human beings, not artifacts, and because the action of these artists is not a making so much as a helping the patient to help himself.

⁸⁷ It is perhaps helpful to recall that, as a knower, the artist possesses *immaterially* the forms he generates; this allows the same intellect to possess several otherwise opposed forms, and in a unified way. As Aristotle frequently says, the knowledge of opposites is one (*Topics* 1.10.104a15; *De Anima* 3.6.430b20-25). Thus, the very nature of knowing must involve an overcoming of opposition, especially insofar as the opposites are deprived in some way.

⁸⁸ ScG II, c. 50.

the wall is a sort of universal cause of its own emanation in all directions, such that it can be received by many sets of eyes, and perhaps even in different ways. Thus it is not unintelligible to say the white of the wall is white in a higher way.

C) Instrumental Agents as Bearing an Element of Greater Eminence

In spite of the inferiority of instrumental equivocal agents, even they might contain a trace of greater eminence. In the case of medicine, its role in conducting, rather than holding on to, the health it brings about suggests both imperfection *and* perfection when compared to the form as it exists in the successfully healed patient: imperfection insofar as the health is not in the medicine in any lasting or proportionate way, but perfection insofar as the health in some way in the medicine is apt to be communicated to the patient, whereas the health as received by the patient is not. That is, medicine as such has the power to mediate health, whereas a healthy animal does not.⁸⁹ Something similar is true, at least on Aristotle's account, of the animal's seed. It has no animal soul of its own, yet precisely because it can bring such a soul into act in the appropriate matter, it must possess in a vestigial and transient way the power of an adult animal soul. The seed is fecund whereas the embryo, at least while it is an embryo, is sterile.⁹⁰ This point seems in fact to be valid for all instrumental agents. We may consider again the carpenter's use of a saw, or the teacher's use

⁸⁹ A sign of which is that we do not cure the sick by simply surrounding them with the healthy, since health, unfortunately, is not contagious. Interestingly, illness seems not to require a medicine-like instrument (except perhaps the air). It is more like a univocal cause in this way: illness begets illness.

⁹⁰ Of course, one must speak with some reservation about Aristotle's seed example, since it now looks like the sperm is not the only agent cause of conception. Embryology has shown that the sperm swims to the ovum, but the ovum seems to grab the sperm that comes in contact with it, in virtue of an adhesive coating on its surface. The sperm does not so much *penetrate* the ovum as it moves from side to side so that the ovum's "stickiness" can better attach it to the ovum, so as to allow for conception. Now, however, we seem to have *two* equivocal instrumental agents to consider, each of which acts upon the other. See note 22 above.

of the spoken word. Freshly cut wood is itself useless for cutting more wood, and even students who have learned well are not necessarily ready to teach and certainly not without themselves using more words as *their own* instruments.

This in no way modifies our earlier claim that only equivocal causes that are, or in some way participate in the character of, universal causes most manifestly possess the forms they educe in a higher way. It is only to suggest that the gradations and modes of “greater eminence” might be manifold, since the very fact that an instrument is lifted up into the principal agent’s causality is a reason to say that, in some modest sense, even here the instrumental agent possesses the form it mediates in a higher way.

VI. EQUIVOCAL CAUSALITY IN MODERN SCIENCE

In this final section, I will tentatively speculate on how this distinction between univocal and equivocal causes might be helpful in interpreting both the data and the theories offered by the natural science of our day. Unfortunately, because these examples will be wide ranging, my explanation of each will be brief. My purpose is to provoke, not to prove. Many disciples of St. Thomas have prematurely abandoned ship in relinquishing natural philosophy to mathematical physics, apparently thinking the philosophy was going down with the cosmology. The recognition that some causes operate equivocally can be an important step both toward a Thomist’s return to the natural sciences and toward his making sense of, and perhaps even offering an alternative account of, what the science is itself looking at. I will begin with some fairly particular examples and then build to some of the more central theories of contemporary science.

A) Latent Heat

In a modification of Aristotle’s example of heat causing health, one might point out that heat also causes a body to change its state. Since the eighteenth century, it has been

noticed that as one heats up a body, the body continually increases in temperature, and at a determinate rate peculiar to a given substance, called the substance's "specific heat capacity." This constant rate of temperature increase per heat input, however, breaks down at two particular temperatures; suddenly, although heat is still "going into" the substance, the temperature stops rising. After a few minutes, however, the substance visibly starts to change its state: either the solid melts or the liquid boils. The undetected but significant quantity of heat that brings about this state change without a temperature change is called that substance's "latent heat." Thus, while heat first and ordinarily causes a substance to get hotter, in certain circumstances, depending on the particular nature of the substance, heat causes it to take on a different form.⁹¹ As long as one grants that temperature change and state change are really different realities, regardless of whatever underlying realities they might share, one must grant that the heat source is an equivocal cause of state-change.

B) White Light

Since Isaac Newton's work in optics it has been clear that the color white, whether considered as the surface property of an opaque body or as a property of light, is composed of all the other colors. If an opaque body is white and illuminated, and an orange ball is held near it (but is not itself directly illuminated), the ball appears the color it is, orange. If, on the other hand, only the ball is directly illuminated, and the white body held near it (but not itself illuminated), the white body will appear not white, but orange. Something similar happens whatever the ball's color. Thus, a white body appears to have the power to reveal or activate all the other colors in bodies that we ordinarily see they have when they themselves are directly

⁹¹ Whether this is a substantial or an accidental change is irrelevant to my point. Aristotle's view is not as simple as one sometimes hears. He seems to have considered the vaporization of water as a substantial change (the water becoming air), though he thinks of freezing as an accidental change. See *Meteor.* 1.3.340a34; 1.11.347b15; 4.3.380b30-32.

illuminated.⁹² The white body, then, is like the sun itself: it makes orange things appear orange, blue things blue, white things white, etc. The other colors, however, can reveal only their own color in other bodies, and then only to the extent that that color is there to be revealed in the first place; the illuminated orange body does relatively little to illuminate a blue body.

One way of expressing the contemporary account of this phenomenon is to say that white light (or the white of the body) is really nothing more than all possible colors superimposed on each other, so this is in fact an instance of univocal agency: it is the orange actually present in the white object that makes the orange ball appear orange. This way of interpreting the phenomenon, however, is encumbered with having to assert, finally, that white does not really exist; it *looks* like it exists, but it does not (except perhaps in our sensorium). Only the other colors are there in reality.⁹³ If it is clear that this would be to deny the obvious—that white is a real color, perhaps even the purest of colors—then we cannot take this reductionist approach, and we have a case of equivocal causality: white has it in its nature to illuminate the orange as orange, that is, to make the ball actually able to shine forth the color orange.

This example is particularly striking because one can detect in it something of the effect's more eminent existence in the cause. A multitude of distinct and even opposed colors can be illuminated by the white, even at the same time in different objects. Thus, the white surface must bear these otherwise opposed colors, but in a higher mode—which mode is, or is a property of, *what it is to be white*. Whiteness, then, is the synthesis and harmonizing of all colors, the perfection of color

⁹² Whether the color is actually in the orange body when it is not being illuminated (by direct light or by reflection) is irrelevant to my basic point, although one would have to make further distinctions on each view. For a fuller discussion, see Christopher A. Decaen, "The Viability of Aristotelian-Thomistic Color Realism," *The Thomist* 65 (2001): 179-222.

⁹³ Ironically, one finds in many articulations of the nature of color and light, from Newton to the present, that conceding this inch, that white is not real, leads inexorably to granting the mile that *no* color or sensible quality is real.

as such; conversely, each color is a finite participation in what it is to be white, received according to the mode of the receiving surface.⁹⁴

This modality is reflected in the color of light when in transit as well. In the medium a color is present as a light wave which has its own proper wavelength.⁹⁵ When several waves are passing through the same part of the medium they overlap in noneliminative, but algebraically additive ways; they together compose a single, albeit complicated, wave form. This composite wave is what is actually in the medium, not two partial and mutually exclusive wavelengths. In the case of white light, this is true most of all. Although it does not have its own wavelength or even a unique wave shape, the white light exists in the medium as a harmony or blend of waves that reach the orange body, at which it is absorbed and then its residue (namely, orange light) is reflected away to illuminate another body.

C) *Electricity and Magnetism*

As the study of electricity began to take off in the late eighteenth and early nineteenth centuries, it was discovered that if a compass were placed underneath a wire pointing north-south carrying an electric current, the needle would turn out of its own north-south alignment to a determined angle deviation inversely related to the distance between the wire and the compass. Were the compass held over the wire, the deviation would be in the opposite direction, and if placed alongside it, no deviation at all would occur. Although up to that time only other magnets (or induced magnets, like iron) had ever been found to affect magnets, the current appeared to be radiating

⁹⁴ Aristotle and, even more clearly, St. Thomas seem to have had this insight when they recognized that the color white is the “measure of all colors, since each color is so much the nobler to the degree that it approaches more toward whiteness” (*In Div. Nom.*, c. 4, lect. 3 [310]). Saint Thomas even speaks of light as a universal cause of all colors; see *STh* I, q. 14, a. 6; q. 115, a. 1.

⁹⁵ Here we in fact see modern science’s version of the “flowing intention” St. Thomas describes in terms of instrumental causality. See above, note 44.

magnetic action in a rotating circle perpendicular to the wire. The very air around the current seemed magnetic. In addition, it was soon discovered that if a piece of iron was placed near a current (or, to magnify the effect, if the current-carrying wire was wrapped around the iron) it became magnetic. In short, it seems that an electric current is an equivocal cause of magnetism in the region around it.

About the same time, scientists discovered that when a conducting wire is brought near to a magnet, a small current is produced in that wire; likewise, when they are separated, another current is produced, but in the opposite direction. Thus, moving magnets act like equivocal causes of current. Further, one can combine these phenomena in electrical induction. If the current-carrying wire is wrapped around the iron block and is brought near a second conductive wire, a stronger current is produced than if the iron were not there. The first current seems to cause magnetism, which in turn causes a transitory current in the second wire—a series of alternating equivocal causes.

These phenomena and the theory that interprets them are collectively known as “electromagnetism.” The presently accepted theory that offers a mathematically complete account of them was offered in the late nineteenth century by James Clerk Maxwell. It proposes that a single irreducible field of energy is, in one way, the cause of the current, in another way, the cause of the magnetism, and in another way mediates both of them. Although superficially this suggests that the causality is univocal—the phenomena are all manifestations of one electromagnetic field—a more coherent account would be to say that the field itself is an equivocal cause of both phenomena, and that the magnet, for example, is an equivocal cause of the state of the field. Albert Einstein’s interpretation of the phenomenon lends itself to this approach:

[W]e cannot be content . . . [to say] that the magnet acts directly on the iron through the intermediate space, but we are constrained to say . . . that the magnet *calls into being* something physically real in the space around it, that something being what we call a “magnetic field.” In its turn *this magnetic field* operates on the piece of iron, so that the latter strives to move toward the

magnet. . . . [W]ith [this account's] aid electromagnetic phenomena can be theoretically represented much more satisfactorily than without it.⁹⁶

As long as we grant the sensibly apparent fact that electric current is not simply the same thing as magnetism, and that neither simply is the electromagnetic field, we still have a single field causing two things that are not the field but conditions in it (and distinct ones at that). As in the account of white light above, so long as one does not explain the current and the magnetism to the point of explaining them away, the electromagnetic field's causality of electricity and magnetism is not univocal.⁹⁷

D) The Gravitational Field of General Relativity

In the general theory of relativity, we have another instance of mutual equivocal causality. Here massive bodies by their very nature are said to “curve” the space (and time) around them, thereby influencing the otherwise inertial motions of nearby bodies in what we identify as gravity, or gravitational orbits. Thus, a body falls toward the earth because the space-time field around the earth is more “warped” than that on the opposite side of the body, in such a way that the distance between the body and the earth shrinks and bends; this is called “falling.” A massive body seems to act upon the massless space-time around it, curving it, and the curved space-time then acts upon another massive body, bringing them together. Again, this looks like another case of dual equivocal causality, where one agent is the instrument of the other.⁹⁸ Thus Einstein says,

⁹⁶ Albert Einstein, *Relativity: The Special and General Theory*, 15th edition (New York: Bonanza, 1961), 63 (emphasis added).

⁹⁷ Because it is now clear that light is itself an electromagnetic phenomenon—the only one sensible to the eye—it seems that the equivocal causality suggested above in an interesting way presupposes this one; it is not clear to me, however, that it reduces entirely to this one.

⁹⁸ According to Newton's third law about equal and opposite reactions, each massive body acts on the other, causing mutual gravitation. This does not alter our description, though it does duplicate it. Interestingly, it does not appear that the third law applies to a mass's agency on the gravitational field when it curves it.

The action of the earth on the stone takes place indirectly. The earth produces in its surroundings a gravitational field, which acts on the stone and produces its motion of fall. . . . The body (e.g., the earth) produces a field in its immediate neighborhood directly.⁹⁹

Like the animal generating a seed through which he generates another like himself, the instrumental equivocal agent appears to mediate a univocal cause and its effect (namely, two bodies being “weighty” toward each other).

But unlike in the seed example, it is difficult to determine which is more the instrument of which. In the case of the seed, although it is true that the parent animal is itself the effect of a prior seed, it is clear that the parent is the principal agent and the seed is instrumental, even if the alternation of animal-seed-animal-seed continues into infinity.¹⁰⁰ However, it seems on the face of it reasonable to say that the massive bodies are prior to the field between them—the “space” between them seems to be a medium of their mutual action. Yet the nature of general relativity seems to give primacy to the field. In fact, in some presentations of the theory, massive bodies are treated as merely concentrated parts of the field. But even if this is hyperbole—again, it is contrary to the whole endeavor of natural science to explain away matter—it is clear that the theory assigns a kind of priority to the gravitational field.

It is no small irony, then, that this example brings us back to the heavenly bodies, or at least what they were said to be made from: the celestial substance, sometimes called “aether.” On both electromagnetic and general relativistic theories, space is not empty. Space is, or is filled with, a field (or fields) of agency. And this quasi-substance seems to be in more than one way an equivocal cause of much of what is going on in “ordinary” matter.¹⁰¹

⁹⁹ Einstein, *Relativity*, 64.

¹⁰⁰ To say otherwise would be to propose a sort of Dawkins-esque “selfish seed” that uses the animal to perpetuate itself, which is implausible to anyone attending to the natures of things.

¹⁰¹ On relativity and electromagnetism in connection with the notion of the aether, see Christopher A. Decaen, “Aristotle’s Aether and Contemporary Science,” *The Thomist* 68 (2004), 398-420.

E) Evolutionary Mutations and Spontaneous Generations

Those who take the time to think about what is implied in the theory of evolution—and especially Aristotelians and Thomists—often run up against the fact that it postulates new species being generated from old.¹⁰² No matter how gradualistic the particular version of Darwinism one considers, as long as one grants that the parent and the offspring really are of different species—and, admittedly, some interpretations of evolution deny this—one must say that at one point a dinosaur, for example, gave birth to what was essentially a bird. Thus, unless we consider the bird as just a monster, a deformed dinosaur and not really a new species, we are asserting the existence of equivocal generation.

We must then also look for an equivocal agent. It is difficult to offer this title to the parent dinosaur in any adequate way, if for no other reason than that this sort of generation seems to happen by chance, and the parent archaeopteryx by its nature desires to produce another archaeopteryx, so from its perspective the bird would be a monster. Therefore we must trace it back to a higher cause. The contemporary understanding for this agency is that it is immediately, or at least fundamentally, a result of genetic mutation, which mutation (again, ironically) often traces back to the sun. That is, high energy solar rays continuously bombarding organisms lead to genetic mutations which, when circumstances are right, manifest themselves at the conception and birth of a new species. Whether this account is sufficient is debatable, for both physicists and philosophers, but resolving immediately to the divine creative agency is even more so; it seems possible that within the order of creation there could be one or more

¹⁰² See, for example, Mortimer J. Adler, *The Problem of Species* (New York: Sheed and Ward, 1940); and idem, "Solution to the Problem of Species," *The Thomist* 3 (1941): 279-379; see also Etienne Gilson, *From Aristotle to Darwin and Back Again: A Journey in Final Causality, Species, and Evolution* (San Francisco: Ignatius, 2009; originally published in 1971); and W. Norris Clarke, S.J., *The One and the Many: A Contemporary Thomistic Metaphysics* (Notre Dame, Ind.: University of Notre Dame Press, 2001), 194-96, 245-60.

equivocal agents whose per se operation brings about new species from the potency of matter.¹⁰³ Yet whether one speaks of a material agent or an immaterial one, as long as the agent cause of the first bird cannot itself be a bird, we are talking about an equivocal cause.

A similar case derives from the borderlands of evolution, at the origin of life itself. Again we have a sort of irony in that, after the biologists chided Aristotle for positing an occasional spontaneous generation in decaying matter (which in the nineteenth century was shown to be due to a passing fly depositing its eggs), the beginning of evolution appears to require just this sort of thing. Somehow somewhere life “emerged” from the nonliving. Precisely how the proverbial primordial soup gave birth to the first single-celled organism is one of the grails of modern biology, but give birth it did, according to the theory. And again, as long as one does not make the preposterous claim that *not only* is there no essential difference between a blue whale and a beetle, but further that there is no essential difference between the living and the nonliving, there is no way around positing one or more equivocal agents to explain what is going on here.

F) Sensation Itself?

No doubt I am neglecting many other possible candidates within contemporary science, from the different forms of energy conversion in thermodynamics, to the various versions of emergentism in biology, to the observation-triggered collapse

¹⁰³ For an extended presentation of this Thomistic interpretation of evolution, see Charles De Koninck’s “The Cosmos,” “The Problem of Indeterminism,” and “Reflections on the Problem of Indeterminism,” in *The Writings of Charles De Koninck*, vol. 1, ed. and trans. Ralph McInerney (Notre Dame, Ind.: University of Notre Dame Press, 2008), 235-442, but especially 274, 285-87. See also Lawrence Dewan, O.P., *Form and Being: Studies in Thomistic Metaphysics* (Washington, D.C.: The Catholic University of America Press, 2006), 120-27, 129-30. While he appears to have reservations about parts of De Koninck’s approach (as do I), Fr. Dewan ends his essay by saying that he has never encountered “any public discussion of this doctrine of De Koninck’s,” and he is certainly correct when he says “it merits discussion” (127).

of a probability wave in quantum theory. However, I will briefly conclude dialectically with only one more, one that I think would be incontrovertible to the modern scientist. The common interpretation of sensation of what Aristotle and St. Thomas call “proper sensibles” (colors, smells, temperature, sounds, and flavors) is that they exist only in our perception, in our mind; what exists “out there” in bodies are purely quantitative attributes of bodies, whether shapes, frequencies, densities, or velocities, which somehow act upon similar attributes of our eyes, ears, hands, etc., and somehow yield the experiences of color, sound, warmth, etc. It is that “somehow” to which I want to call attention. If what is not colored acts upon my eye and/or brain and causes me to experience color, how is this not equivocal causality?¹⁰⁴

CONCLUSION

Readers who are unfamiliar with, and those who are overly familiar with, the science of the examples I have proposed may have doubts about whether it is correct to call them equivocal causes, and I do not wish to overstate the (admittedly cursory) case I have offered. Perhaps some of them will not bear closer scrutiny. Nevertheless, I suggest that those who look into these matters with fresh eyes will become more convinced at least of the plausibility of the proposals. Some of those more immersed in contemporary science may be skeptical about this novel approach to the modern theories in part because of their habituation to the reductionist approach in the sciences, where what I am calling equivocal causality is often treated as just hidden univocal causality. If an x seems to cause a y , the explanation is often that this is only because x is secretly just another y , or both are really just z 's. The problem with this approach is that absolute reductionism, although it begins in wonder, often ends in surrealism: the phenomenon to be explained ends up being an illusion, leaving one with only the

¹⁰⁴ On this point, see Erwin Schrödinger, *What is Life?* (Cambridge: Cambridge University Press, 1967), 167-68.

explanation and nothing to explain.¹⁰⁵ However, no sober approach to natural science will sacrifice the sensible object one wishes to understand on the altar of an enticingly elegant theory, both because such a sacrifice is logically incoherent and because we are more sure that the sensible object exists than that the theoretical entities that replace it do, and science must always rely upon what is more known to us. Thus, I contend that any theory in natural science which takes the reality of the effect as given will, in positing a cause, often find itself dealing with equivocal causes.

The number and variety of these examples of equivocal causality—both those St. Thomas explicitly mentions and those I suggest based on science unavailable to the Angelic Doctor—show that the notion of equivocal causality in general is not narrow in its applicability. Indeed, the more one tries to find examples, the more they seem to be ubiquitous; one almost concludes that finding *univocal* causes is more of a challenge. Although it seems to come in a wide range of forms, and the equivocality in question seems to admit of manifold degrees, some of them quite obscure, St. Thomas's teaching on equivocal causality is intelligible in itself, and examples of it appear to be at work at all levels of reality—even without Aristotle's sun.¹⁰⁶

¹⁰⁵ This problem seems to be one of the driving forces behind recent ideas of "emergence" in contemporary science and philosophy of science. For an early presentation of the idea of emergence and tempered reductionism in the context of interpreting quantum theory, see David Bohm, *Causality and Chance in Modern Physics* (New York: Harper and Row, 1957), especially 50-67.

¹⁰⁶ This essay is an expanded version of a lecture I gave at the West Coast meeting of the Society for Aristotelian-Thomistic Studies, June 19-20, 2014 at Thomas Aquinas College. I would like to thank those who attended the talk for their probing questions, and the insights they offered. I would particularly like to thank Fr. Sebastian Walshe and Marie I. George for their invaluable comments on the initial talk and the draft of this essay, respectively.