Thomas Aquinas on Concrete Particulars

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Abstract. There are two competing models for how to understand Aquinas's hylomorphic theory of material substances: the Simple Model, according to which material substances are composed of prime matter and substantial form, and the Expanded Model, according to which material substances are composed of prime matter, substantial form, and all of their accidental forms. In this paper, I first explain the main differences between these two models and show how they situate Aquinas's theory of material substances in two different places within the contemporary debate on concrete particulars, highlighting several advantages that Aquinas's approach has over other varieties of substratum and bundle theory along the way. I then offer some reasons to think that the Expanded Model, as a theory of concrete particulars, is preferable. I argue that the Expanded Model avoids two major concerns for the Simple Model: the problem of extrinsicality, and the problem of too-many-possessors.

I. Introduction

A constituent ontology is any theory of concrete particular objects (hereafter, concrete particulars)[1] that says that forms or properties exist within the objects that possess them, and the objects that possess them do so by including those forms or properties among their metaphysical parts or constituents. In contrast, a relational ontology is any theory of concrete particulars that says that forms or properties exist outside of the objects that possess them, and the objects that possess them do so by being related via exemplification, instantiation, or inherence to something external to themselves.[2] There are two main varieties of constituent ontologies: bundle theory and substratum theory. Bundle theory says that concrete particulars are composed of nothing

[1] By "concrete particular object", I mean any individual thing capable of possessing properties. The term is meant to exclude abstract objects, universals, and events (see, for example, Michael J. Loux, *Metaphysics: A Contemporary Introduction*, Third Edition (New York: Routledge, 2006): ch. 3). One might want to call such things simply "physical objects," but, if there are immaterial substances, then these would be non-physical concrete particulars. And we can't just call them substances because, as we will soon see, there might be concrete particulars which are not substances, such as artifacts or accidental unities.

[2] For more on the distinction between constituent and relational ontologies, see Nicholas Wolterstorff, "Bergmann's Constituent Ontology," *Noûs* 4 (1970): 109–134 and "Divine Simplicity," *Philosophical Perspectives* 5 (1991): 531–552; Michael J. Loux, "Aristotle's Constituent Ontology," in *Oxford Studies in Metaphysics* 2, ed. Dean W. Zimmerman and Karen Bennett (Oxford: Oxford University Press, 2006): 207–250 and "What is Constituent Ontology?" in *Metaphysics: Aristotelian, Scholastic, Analytic*, ed. Lukáš Novák, Daniel D. Novotný, Prokop Sousedík, and David Svoboda (Frankfurt: Ontos Verlag, 2012): 43–57; Peter van Inwagen, "Relational vs. Constituent Ontologies," *Philosophical Perspectives* 25 (2011): 389–405; Eric T. Olson, "Properties as Parts of Ordinary Objects," in *Being, Freedom and Method: Themes from the Philosophy of Peter van Inwagen*, ed. John Keller (Oxford: Oxford University Press, 2017): 62–79; Eric Yang, "Defending Constituent Ontology," *Philosophical Studies* 175 (2018): 1207–1216.

more than their forms or properties. Substratum theory says that concrete particulars are composed of their forms or properties as well as an underlying substratum in which those forms or properties inhere.[3]

Thomas Aquinas is a constituent ontologist. According to Aquinas, material substances, one of the key varieties of concrete particulars in his ontology, are best understood as composed of form and matter, and form and matter are, in turn, best understood as metaphysical parts or constituents of material substances.[4] So where exactly does Aquinas's hylomorphic theory of material substances fall within the contemporary debate? Is Aquinas a bundle theorist or a substratum theorist? Is his a pure constituent ontology or are there elements of a relational ontology? As it turns out, there are two main models for understanding Aquinas's hylomorphic theory of material substances. The two models diverge on the placement and the mode of possession of accidental forms. According to what I will call the Simple Model, material substances are composed of prime matter and substantial form and they possess their accidental forms not by having them among their metaphysical parts or constituents but by serving as the substratum in which they inhere. According to what I will call the Expanded Model, material substances are composed of prime matter, substantial form, and all of their accidental forms, and

[3] For some helpful overviews of bundle theory and substratum theory (their main commitments, their main proponents, their similarities and differences, the major varieties of each, and the major problems for each), see Loux, *Metaphysics*, 82–117; Robert C. Koons and Timothy H. Pickavance, *Metaphysics: The Fundamentals* (Malden, MA: Wiley-Blackwell, 2015): 104–125; and Robert C. Koons and Timothy H. Pickavance, *The Atlas of Reality: A Comprehensive Guide to Metaphysics* (Malden, MA: Wiley-Blackwell, 2017): 175–200.

[4] Aquinas uses the language of composition, part, and whole to describe the relationship between form, matter, and material substances in several places. In his *De principiis naturae* (hereafter, *DPN*) for example, he explains that "matter and form are said to be intrinsic to a thing, in that they are parts constituting that thing," and that "matter and form are said to be related to one another...they are also said to be related to the composite as parts to a whole and as that which is simple to that which is composite" (*DPN*, chs. 3 and 4, respectively). "Metaphysical part," however, is not a term that Aquinas himself ever uses. By using this term, I mean only to distinguish form and matter from the material or physical parts of a material substance. Here I am borrowing from other scholars of Aquinas who do likewise (see, for example, Eleonore Stump, *Aquinas* (New York: Routledge, 2003): 35, 42; Christopher M. Brown, *Aquinas and the Ship of Theseus* (New York: Continuum, 2005): 53, 92–98; Robert Pasnau, *Metaphysical Themes 1274–1671* (Oxford: Oxford University Press, 2011): 7–11). All references to the works of Aquinas are to the Latin versions of those texts available at corpusthomisticum.org. All translations are my own.

they possess their accidental forms by having them among their metaphysical parts or constituents. The key difference between these two models is whether accidental forms are included among the metaphysical parts or constituents of material substances.

As I will explain below, according to the Simple Model, Aquinas's hylomorphic theory of material substances is a kind of substratum theory, inasmuch as prime matter serves as the ultimate substratum for all of a material substance's forms, though it also contains elements of a relational ontology. For, on this model, accidental forms are external to the material substances that possess them; material substances possess such forms by serving as the substratum in which they inhere. According to the Expanded Model, Aquinas's hylomorphic theory of material substances remains a kind of substratum theory, but also has similarities with some varieties of bundle theory and eschews any elements of a relational ontology. For, on this model, accidental forms are internal to the material substances that possess them; material substances possess all of their forms by including them among their metaphysical parts or constituents.

In this paper, I first explain the main differences between these two models and show how they situate Aquinas's hylomorphic theory of material substances in two different places within the contemporary debate on concrete particulars. Along the way I point to several advantages that Aquinas's approach has over other varieties of substratum and bundle theory. I then offer some reasons to think that the Expanded Model, as a theory of concrete particulars, is preferable. I argue that the Expanded Model avoids two major concerns for the Simple Model: the problem of extrinsicality, and the problem of too-many-possessors.

II. Two Competing Models

The Simple Model of Aquinas's ontology of material substances is built on a distinction between two sorts of composite wholes: material substances and "accidental unities" (sometimes

referred to as "accidental beings" or "accidental compounds"). The difference between these two sorts of composite wholes is as follows. Material substances are composed of prime matter and substantial form. Material substances include things such as elements, minerals, plants, non-human animals, and human beings. You and I are material substances. And so each of us is composed of prime matter and some particular substantial form (in our case, a rational soul). Accidental unities, on the other hand, are what we might call "second-order" wholes, composed of material substances (which, as we have just seen, are themselves composed of prime matter and substantial form) and accidental forms. When an accidental form comes to "inhere" in a material substance, that is, when a material substance comes to possess a certain non-essential attribute, this gives rise to an accidental unity. And for every accidental form possessed by a material substance, there exists an accidental unity that is composed of that particular accidental form and the material substance in which it inheres.[5] Accidental unities, then, include so-called "kooky objects,"[6] such as white-Socrates (the accidental unity composed of Socrates and his pallor) and seated-Socrates (the accidental unity composed of Socrates and his seated-ness), as well as single-substance artifacts, such as bronze statues (accidental unities composed of bronze and some particular shape) and thresholds (accidental unities composed of wood and some

[5] That Aquinas is committed to the existence of such entities is supported by several texts, among which is the following from Chapter 6 of his *De ente et essentia* (hereafter, *DEE*), "just as a substantial being results from form and matter when they are composed, so too an accidental being results from accident and subject when the accident comes to the subject." For a complete list of references in Aquinas's texts to "accidental beings" or "accidental unities," see Brown, *Aquinas and the Ship of Theseus*, 64, fn27.

[6] The phrase "kooky objects" comes from Gareth Matthews, "Accidental Unities," in *Language and Logos: Studies in Ancient Greek Philosophy*, ed. Malcolm Schofield and Martha Craven Nussbaum (Cambridge: Cambridge University Press, 1982): 223–240, and it refers to those accidental unities in Aristotle's ontology that are composed of material substances and accidental forms. For similar accounts of "kooky objects" in Aristotle's ontology, see, for example: Frank Lewis, "Accidental Sameness in Aristotle," *Philosophical Studies* 42 (1982): 1–36; S. Marc Cohen, "Kooky Objects Revisited: Aristotle's Ontology," *Metaphilosophy* 39 (2008): 3–19; S. Marc Cohen, "Accidental Beings in Aristotle's Ontology," in *Reason and Analysis in Ancient Greek Philosophy*, ed. Georgios Anagnostopoulos and Fred D. Miller, Jr. (Dordrecht: Springer, 2013): 231–242; Loux, "Aristotle's Constituent Ontology," 207–250 and Michael J. Loux, "Aristotle's Hylomorphism," in *Neo-Aristotelian Perspectives in Metaphysics*, ed. Lukáš Novák and Daniel D. Novotný (New York: Routledge, 2014): 138–163. For interpretations of Aristotle that reject the existence of kooky objects, see: Theodore Scaltas, *Substances and Universals in Aristotle's Metaphysics* (Ithaca, NY: Cornell University Press, 1994): 97–113, 150–154; Christopher Shields, *Order in Multiplicity: Homonymy in the Philosophy of Aristotle* (Oxford: Clarendon Press, 1999): 155–175.

particular location). Now, you and I are material substances. And so, once again, according to the Simple Model, each of us is composed of prime matter and substantial form. But each of us also has several non-essential attributes, such as our particular height, weight, and various qualities that we possess, as well as any and all of our particular thoughts and actions. And so each of us is also a part of several different accidental unities, one for every non-essential attribute that we possess. The key point to emphasize here is that, on the Simple Model, a material substance does not possess its non-essential attributes, its accidental forms, as metaphysical parts or constituents. On this model, accidental forms are external to the material substances that possess them. A material substance possesses each of its accidental forms via the inherence of something external to it, and it composes, together with each of those forms, various accidental unities.

One recent proponent of the Simple Model is Jeffrey Brower. In his 2014 book, *Aquinas's Ontology of the Material World,* Brower characterizes the difference between a material substance and an accidental unity in Aquinas's hylomorphic theory of material substances in the following way:

> Aquinas thinks that the corporeal world is completely analyzable in terms of two different types of hylomorphic compound – what he calls material substances and accidental unities, respectively. These two types of compound are distinguished both by their matter and by their form – that is to say, both by the type of being that serves as their substratum and by the type that inheres in their matter… Aquinas thinks of all material substances as composed of prime matter and substantial form, whereas he thinks of all accidental unities as composed of substances and accidental forms.[7]

[7] Jeffrey E. Brower, *Aquinas's Ontology of the Material World: Change, Hylomorphism, and Material Objects* (Oxford: Oxford University Press, 2014): 9. See also, Jeffrey E. Brower, "Matter, Form, and Individuation," in *The Oxford Handbook of Aquinas*, ed. Brian Davies and Eleonore Stump (Oxford: Oxford University Press, 2012): 85–103; Jeffrey E. Brower, "Aquinas on the Individuation of Substances," in *Oxford Studies in Medieval Philosophy* 5, ed. Robert Pasnau (Oxford: Oxford University Press, 2017): 127–128.

Other proponents of the Simple Model include Christopher Brown,[8] David Oderberg,[9] Robert Pasnau,[10] and Ross Inman.[11]

The Expanded Model of Aquinas's hylomorphic theory of material substances is built on a distinction between two sorts of metaphysical parts that material substances can be said to possess: essential parts and accidental parts. The difference between these two sorts of parts is as follows. Essential parts are those metaphysical parts of a material substance that comprise its essence or nature. The essential parts of a material substance include its matter (further specified in some way) and its substantial form.[12] Typically, when a substance loses one or more of its essential parts that substance ceases to exist.[13] Accidental parts, on the other hand, are those metaphysical parts of a material substance that lie outside of its essence. The accidental parts of a substance include all of its accidental forms. Material substances can, and frequently do, lose and gain such parts over time.[14] Now, you and I are material substances. And so, according to the

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[8] Brown, *Aquinas and the Ship of Theseus*, 53, 64.
[9] David S. Oderberg, *Real Essentialism* (New York: Routledge, 2007): 167–170.
[10] Robert Pasnau, "Form and Matter," in *The Cambridge History of Medieval Philosophy*, ed. Robert Pasnau (Cambridge: Cambridge University Press, 2010): 642; Pasnau, *Metaphysical Themes,* 101–102; Robert Pasnau, "Mind and Hylomorphism," in *The Oxford Handbook of Medieval Philosophy*, ed. John Marenbon (Oxford: Oxford University Press, 2012): 501.
[11] Ross Inman, "Neo-Aristotelian Plenitude," *Philosophical Studies* 168 (2014): 588–596.
[12] Aquinas often refers to the matter included in the essence or nature of a material substance as its "common matter" (see, for example, *DEE*, ch. 2 and ch. 6; *Summa theologiae* (hereafter, *ST*) I, q. 29, a. 2, ad3; *Quaestiones disputatae de potentia Dei* (hereafter, *QDPD*), q. 9, a. 1, ad6). Common matter is the general type of matter that all members of a particular kind possess. In the case of human beings, for example, Aquinas says that all human beings are composed of flesh and bones. I think—though this is controversial—that common matter is best understood as prime matter given certain determinable characteristics by the type of substantial form with which it is associated in a given thing. On my interpretation, common matter just is prime matter plus certain specifications given to it by its substantial form. And so, in what follows, I will refer to the matter included in the essence or nature of a material substance as prime matter. Readers wishing to substitute common matter are welcome to do so. Nothing of what I argue later hinges on my minority interpretation on this point.
[13] Though on some interpretations of Aquinas's account of the afterlife, human persons can and do survive the loss of their matter (see, Brower, *Aquinas's Ontology*, Chapter 13 for an excellent overview of the relevant debate).
[14] "Proper accidents," those accidents that "flow" necessarily from a substance's substantial form, and so belong to any member of the species, would, however, be an exception to this generalization. Aquinas's favorite example of a proper accident is "risibility," which is a proper accident of all human beings. For Aquinas's account of proper accidents, see, for example: *DEE*, ch. 6; *DPN*, ch. 2; *ST* I, q. 3, a. 6, resp.; *ST* I, q. 77, a. 1, ad5; *Quaestiones disputatae de anima (hereafter, QDA)*, q. 1, a. 12, ad7. Aquinas also recognizes a third category of accident, "inseparable, non-proper accidents," which are particular to certain individuals and so not possessed by every member of the species, but are also such that they cannot be lost by those individuals once possessed. Aquinas's favorite example of an inseparable, non-proper accident is biological sex, which he takes to be an inseparable,

Expanded Model, each of us has both essential parts (matter and substantial form), and accidental parts (an accidental form corresponding to each of our non-essential attributes). The key point to emphasize here is that, on the Expanded Model, a material substance's prime matter and substantial form do not exhaust its metaphysical parts. An individual material substance, or "*suppositum,*" includes among its metaphysical parts its substantial form, its prime matter *and* all of its accidental forms.[15]

One recent proponent of the Expanded Model is Eleonore Stump. In her 2003 book, *Aquinas*, she characterizes individual material substances, or "supposits," as follows:

> any thing which has a substantial form necessarily also has accidents, even though it is not necessary that it have one accident rather than another. So a substantial form is not the only metaphysical constituent of a thing; any thing will also have accidental forms as metaphysical constituents. In addition, for material substances, the matter that makes the substantial form of a material supposit a particular is also a constituent of the supposit. So any supposit has more metaphysical constituents than just a substantial form. Insofar as all these constituents compose the supposit, the supposit is not identical to any subset of them.[16]

non-proper accident of any human being. For Aquinas's account of inseparable, non-proper accidents, see, for example, *QDA* q. 1. a. 12, ad7 and *DEE,* ch. 6. Aquinas is clear in both cases that neither proper accidents nor inseparable, non-proper accidents are included in the essence of any material substance, despite the fact that they cannot be lost by their possessor. And so while in most cases it is characteristic of an accidental form that it can be lost or gained by the material substance that possesses it, these two counterexamples show that this is not what makes an accidental form an accidental form.

[15] Following common usage of his time, Aquinas uses the term "*suppositum*" to refer to an individual substance. It refers to a particular individual within a given species. So, for example, Socrates is a *suppositum*. You and I are *supposita*. See, for example, *ST* I, q. 3, a. 3, resp. and *ST* III, q. 2, a. 2, resp.

[16] Stump, *Aquinas,* 50; see also Stump, *Aquinas*, 44–45, 56, and 112–113.

Other proponents of the Expanded Model include Christopher Hughes,[17] Richard Cross,[18] J.L.A. West,[19] Michael Gorman,[20] and John Wippel.[21]

There are, then, two competing models for how to understand Aquinas's hylomorphic theory of material substances. The primary disagreement between these two models concerns the placement and mode of possession of accidental forms.[22] According to the Simple Model, accidental forms are not included among the metaphysical parts or constituents of the material substances that possess them. Material substances possess their accidental forms by being related

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[17] Christopher Hughes, *Aquinas on Being Goodness and God* (New York: Routledge, 2015): 68.
[18] Richard Cross, "Aquinas on Nature, Hypostasis, and the Metaphysics of the Incarnation," *The Thomist* 60 (1996): 175–176.
[19] J.L.A. West, "The Real Distinction Between Supposit and Nature," in *Wisdom's Apprentice: Thomistic Essays in Honor of Lawrence Dewan, O.P.*, ed. Peter Kwasniewski (Washington, D.C.: Catholic University of America Press, 2007): 92, 97.
[20] Michael Gorman, "Uses of the Person-Nature Distinction in Aquinas's Christology," *Recherches de Théologie et Philosophie Médiévales* 67 (2000), 59, 66; Michael Gorman, *Aquinas on the Metaphysics of the Hypostatic Union* (Cambridge: Cambridge University Press, 2017): 31–33.
[21] John F. Wippel, *The Metaphysical Thought of Thomas Aquinas* (Washington, D.C.: Catholic University of America Press, 2000): 241, 243, 244, 245–246, 247, 248. At pages 101–102 of his *Metaphysical Themes*, Pasnau also briefly traces a distinction in the works of some medieval philosophers between "thin metaphysical substances" (composites of prime matter and substantial form) and "thick concrete substances" (composites of prime matter, substantial form, and various accidental forms), which seems to correspond to my distinction here between essences and material substances.
[22] This is a point worth emphasizing. I am understanding the primary disagreement between the two models to be one concerning the *location* of certain entities (accidental forms) within Aquinas's ontology of material substances, not one concerning whether certain entities exist. There is even room here for a proponent of the Expanded Model to recognize the existence of accidental unities (and there might be pressure to do so, given that accidental unities include some commonly recognized items such as single-substance artifacts). On the Expanded Model, however, accidental unities will have to be understood very differently. If we hold fixed the claim made by proponents of the Simple Model that accidental unities include among their metaphysical parts prime matter, substantial form, and a single accidental form, then a proponent of the Expanded Model can recognize the existence of such entities *within* the larger composite that is the material substance. For example, on the Expanded Model, white-Socrates may be understood as a hylomorphic compound that includes Socrates's prime matter, Socrates's substantial form, and Socrates's pallor, but which excludes all of Socrates's other accidents. And seated-Socrates may be understood as a hylomorphic compound that includes Socrates's prime matter, Socrates's substantial form, and Socrates's seatedness, but which excludes all of Socrates's other accidents. In this way, on the Expanded Model, accidental unities would turn out to be parts of material substances, not the other way around. Each accidental unity within a particular material substance would include some particular subset of that substance's metaphysical parts, and each would also overlap with every other inasmuch as each would include among its own parts the same prime matter and substantial form. On this understanding of accidental unities, it would be misleading to speak of accidental unities as separate hylomorphic compounds distinct from the material substances to which they are related. On this model, to refer to any accidental unity within a material substance is just to refer to some subset of the metaphysical parts of that material substance for purposes of explanation within a particular context. For more on how to make room for accidental unities within an Expanded Model, see my "Accidental Forms as Metaphysical Parts of Material Substances in Aquinas's Ontology," in *Oxford Studies in Medieval Philosophy* 7, ed. Robert Pasnau (2019): 67-114. And for more on how to make sense of material artifacts within an Expanded Model, see my "Thomas Aquinas on the Metaphysical Structure of Artifacts," *Vivarium* 61 (2023): 141-166.

via inherence to something outside of themselves. According to the Expanded Model, accidental forms are included among the metaphysical parts or constituents of the material substances that possess them. As a result, material substances possess their accidental forms via parthood or constituency.

Now, which of these two models is a more accurate reading of Aquinas is not something that I will discuss here. I have discussed the various arguments that can be given for or against each interpretation elsewhere.[23] Instead, in what follows, I explore how the two models situate Aquinas's hylomorphic theory of material substances in two different places within the contemporary debate on concrete particulars. I then argue that as a theory of concrete particulars, the Expanded Model is preferable, independent of its status as an interpretation of the texts of Aquinas.[24]

III. Bundles or Substrata?

Bundle theory says that concrete particulars are composed of nothing more than their properties. Some versions of bundle theory are built on realist conceptions of properties, according to which properties are universals; others are built on trope nominalist conceptions of properties, according to which properties are particulars.[25] There are roughly two main varieties

[23] See my "Accidental Forms as Metaphysical Parts of Material Substances in Aquinas's Ontology" and "Thomas Aquinas on the Metaphysical Structure of Artifacts." One key part or component of material substances missing from both of these models is the substance's *esse* or "act of existence." For Aquinas, all created substances are best understood as composed of both essence and existence (see, for example, *DEE*, ch. 4; *Expositio super librum Boethii De Trinitate* (hereafter, *In BT*), q. 5, a. 4, ad4; *ST* I, q. 50, a. 2, ad3; *ST* I, q. 75, a. 5, ad4; *Summa contra Gentiles* (hereafter, *SCG*) II, 52, 1; *SCG* II, 52, 2; *SCG* II, 53, 2; *SCG* II, 54, 8; *SCG* II, 54, 9; *QDA*, a. 6, resp.; *Quaestiones disputatae de spiritualibus creaturis* (hereafter, *QDSC*), q. 1, a. 1, ad8; *Quaestiones quodlibetales* (hereafter, *QQ*) 9, q. 4, a. 1, resp.; *Scriptum super libros Sententiarum* (hereafter, *In Sent.*) I, d. 8, q. 5, a. 2, resp.). The full story of the metaphysical composition of material substances, then, would include their acts of existence, but I have set aside this complication here to better compare Aquinas's hylomorphic theory of material substances with contemporary theories of concrete particulars, for which there is no corresponding part, aspect, or entity.

[24] This paper uses the terms "Simple Model" and "Expanded Model" to refer primarily to competing theories of material substances and secondarily to competing interpretations of Aquinas (for example, the term "Simple Model" taken in the second sense refers to the view that Aquinas is a proponent of the theory of substances that is referred to by "Simple Model" taken in the first sense). This convenient equivocation is harmless, since context will make it clear which of the two senses is intended.

[25] Some proponents of universal bundle theory include: Bertrand Russell, *An Inquiry into Meaning and Truth* (New York: W. W. Norton & Co, Inc., 1940); James van Cleve, "Three Versions of the Bundle Theory," *Philosophical*

of bundle theory in the contemporary literature, one a straightforward constituent ontology, the other a constituent ontology with elements of a relational ontology. According to what we might call standard bundle theory, concrete particulars are related to each of their properties in the very same way: each property of a concrete particular is included among its metaphysical parts or constituents. This is what makes it a straightforward constituent ontology. According to nuclear bundle theory, some of an object's properties are privileged over the others.[26] Select properties form the core or nucleus of the object. These are the essential properties of the object, those properties that it cannot lose without ceasing to exist. The other properties remain on the periphery of that core or nucleus, coming and going over the course of the object's career. On some versions of nuclear bundle theory, objects just are their nuclei: a material object just is the set of its nuclear properties.[27] On these versions of nuclear bundle theory, bundle theory contains elements of a relational ontology, in that objects are related by means of exemplification, instantiation, or inherence to their other, non-nuclear properties.

Substratum theory says that concrete particulars are more than just their properties. In addition to their properties, there is also as an underlying substratum in which those properties

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Studies 47 (1985): 95–107; Albert Casullo, "A Fourth Version of the Bundle Theory," *Philosophical Studies* 54 (1988): 125–139; John O'Leary-Hawthorne and J.A. Cover, "A World of Universals," *Philosophical Studies* 91 (1998): 205–219; L. A. Paul, "Logical Parts," *Noûs* 36 (2002): 578–596 and "A One Category Ontology," in *Being, Freedom, and Method: Themes from the Philosophy of Peter van Inwagen*, ed. John A. Keller (Oxford: Oxford University Press, 2017): 32–61; Markku Keinanen and Tuomas E. Tahko, "Bundle Theory with Kinds," *The Philosophical Quarterly* 69 (2019): 838–857. Some proponents of trope bundle theory include: Donald C. Williams, "On the Elements of Being: I," *The Review of Metaphysics* 7 (1953): 3–18 and "On the Elements of Being: II," *The Review of Metaphysics* 7 (1953): 171–192; Keith Campbell, *Abstract Particulars* (Oxford: Blackwell, 1990); Peter M. Simons, "Particulars in Particular Clothing: Three Trope Theories of Substance," *Philosophy and Phenomenological Research* 54 (1994): 553–575, "Farewell to Substance: A Differentiated Leave-Taking," *Ratio* 11 (1998): 235–252, and "Identity Through Time and Trope Bundles," *Topoi* 19 (2000): 147–155; Arda Denkel, *Object and Property* (Cambridge: Cambridge University Press, 1996); Anna-Sofia Maurin, *If Tropes* (Dordrecht: Kluwer Academic Publishers, 2002); Douglas Ehring, *Tropes: Properties, Objects, and Mental Causation* (Oxford: Oxford University Press, 2011); Markku Keinanen, "Tropes—The Basic Constituents of Powerful Particulars?" *Dialectica* 65 (2011): 419–450; Stephen Barker and Mark Jago, "Material Objects and Essential Bundle Theory," *Philosophical Studies* 175 (2018): 2969–2986.

[26] See, for example, Simons, "Particulars in Particular Clothing"; Paul, "Logical Parts"; Keinanen, "Tropes"; Barker and Jago, "Material Objects."

[27] See, for example, Barker and Jago, "Material Objects."

inhere. Some versions of substratum theory are built on a realist conception of universals (either Platonic or Aristotelian); others are trope nominalist. Most contemporary substratum theorists posit the existence of a "bare particular" to serve as the substratum for a material object's properties.[28] Bare particulars are bare in that they are intrinsically featureless, having no properties or features of their own, and they are particular in that they are intrinsically numerically distinct from one another.[29] But bare particulars are not the only option here. The substrata in which properties are said to inhere according to substratum theory could also be "kinds" or portions of stuff.[30]

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[28] Some proponents of bare particularism include: William P. Alston, "Particulars—Bare and Qualified," *Philosophy and Phenomenological Research* 15 (1954): 253–258; Edwin B. Allaire, "Bare Particulars," *Philosophical Studies* 14 (1963): 1–8; Gustav Bergmann, *Realism: A Critique of Brentano and Meinong* (Madison: University of Wisconsin Press, 1967); C.B. Martin, "Substance Substantiated," *Australasian Journal of Philosophy* 58 (1980): 3–10 and *The Mind in Nature* (Oxford: Oxford University Press, 2007): 43–44, 194–198; D.M. Armstrong, *A World of States of Affairs* (Cambridge: Cambridge University Press, 1997): 95–112 and *Sketch for a Systematic Metaphysics* (Oxford: Oxford University Press, 2010): 54–60; J. P. Moreland, "Theories of individuation: A Reconsideration of Bare Particulars," *Pacific Philosophical Quarterly* 79 (1998): 251–263 and *Universals* (Montreal: McGill-Queen's University Press, 2001); Timothy Pickavance, "In Defense of 'Partially Clad' Bare Particulars," *Australasian Journal of Philosophy* 87 (2009): 155–158 and "Bare Particulars and Exemplification," *American Philosophical Quarterly* 51 (2014): 95–108; John Heil, *From an Ontological Point of View* (Oxford: Oxford University Press, 2003): 169–178 and *The Universe As We Find It* (Oxford: Oxford University Press, 2012): 12–16; Theodore Sider, "Bare Particulars," *Philosophical Perspectives* 20 (2006): 387–397; Nathan Wildman, "Load Bare-ing Particulars," *Philosophical Studies* 172 (2015): 1419–1434; Niall Connolly, "Yes: Bare Particulars!" *Philosophical Studies* 172 (2015): 1355–1370; Katarina Perovic, "Bare Particulars Laid Bare," *Acta Analytica* 32 (2017): 277–295; Michele Paulini Paoletti, "Bare Particulars, Modes, and the Varieties of Dependence," *Erkenntnis* 88 (2023): 1593–1620.

[29] One of the most common objections to bare particularism is that it is incoherent to suggest that there could exist something that possesses no properties or features of its own. How could a bare particular be entirely bare? Wouldn't it have to possess at least the features of being bare, and of serving as the substratum for the properties of a material substance, and of being an existing thing? I think it is important to note that what bare particularists are claiming here is that a bare particular possesses no *intrinsic* properties or features of its own. To say that a bare particular is bare is not to say that it possesses the property of being bare but that it fails to possess any intrinsic properties. And to say that a bare particular serves as the substratum for the properties within a material substance is just to say that certain properties bear a relation to it. And to say that a bare particular exists is just to say that it is a metaphysical part or constituent of an existing material substance. The first is not an intrinsic property but the complete lack of intrinsic properties. And the second and the third are not intrinsic but extrinsic properties. Now, to be clear, I don't mean to suggest that there isn't something to this objection. I mean only to suggest that there are responses available to the bare particularist. For a discussion of the coherence of bare particularism, with references, see Andrew M. Bailey, "No Bare Particulars," *Philosophical Studies* 158 (2012): 31–41.

[30] For versions of substratum theory according to which substrata are kinds or kind instances, see Loux, *Metaphysics,* 107–117; E.J. Lowe, *The Four-Category Ontology: A Metaphysical Foundation for Natural Science* (Oxford: Oxford University Press, 2006): 15–19, 25–28; Ross D. Inman, *Substance and the Fundamentality of the Familiar: A Neo-Aristotelian Mereology* (New York: Routledge, 2018): 20–47. For critiques of kind theory, see Armstrong, *A World of States of Affairs*, 65–68 and Alexander Bird, "Are Any Kinds Ontologically Fundamental?" in *Contemporary Aristotelian Metaphysics* ed., Tuomas E. Tahko (Cambridge, UK: Cambridge University Press, 2012): 94–104.

Bare particulars serve several purposes in a theory of concrete particulars. The primary reason to posit the existence of bare particulars is as a principle of individuation, as a way of individuating objects and setting them apart from one another. Another reason to posit the existence of bare particulars is as a principle of persistence, as a way of explaining what makes one object the very same object over time despite changes in its properties. A third reason for positing the existence of bare particulars is as a principle of unity, as a way of explaining how various properties are brought together to compose individual objects. A final reason for positing the existence of bare particulars is to serve as the subject of those properties. Plausibly, properties are dependent entities, ways or modes of particular substances, and so not (naturally) capable of independent existence.[31] Positing the existence of bare particulars gives us a foundation or ground for the existence of those properties.

Similar to bundle theory, there are roughly two main varieties of "bare particularism" in the contemporary literature, one a constituent ontology, the other a sort of relational ontology. According to "thin particularism," a material object just is a certain bare particular and so possesses each of its properties by being related via exemplification, instantiation, or inherence to something outside of itself. According to "thick particularism," a material object is composed of a certain bare particular and all of the properties that inhere in that bare particular, and so possesses each of its properties by including it among its metaphysical parts or constituents.[32]

Aquinas is a constituent ontologist. So is he a bundle theorist or a substratum theorist? Is his a pure constituent ontology or are there elements of a relational ontology? It is important to point out at the start that Aquinas consistently rejects the existence of anything universal existing

[31] For discussions of properties as "ways" or "modes" of objects, see, for example: Armstrong, *A World of States of Affairs*, 30–31, 96–99; Heil, *Ontological Point of View*, 126–128, *The Universe As We Find It*, 106–108, and "Accidents, Modes, Tropes, and Universals," *American Philosophical Quarterly* 51 (2014): 333–344; Lowe, *Four-Category Ontology,* 13–15.
[32] Armstrong, *A World of States of Affairs*, 124.

outside of the mind. In Aquinas's ontology, forms or properties are not numerically identical across instances as they are on contemporary Platonic and Aristotelian realist conceptions. According to Aquinas, any substantial or accidental forms existing out there in the world are particular. And so if Aquinas is any kind of bundle theorist or substratum theorist, then he will be of the trope nominalist sort.[33] But which is it? As I will argue below, I think that Aquinas's hylomorphic theory of material substances is indeed a kind of substratum theory, inasmuch as prime matter serves as the ultimate substratum for all of a material substance's forms. But beyond that, there is room for disagreement concerning precisely what kind of substratum theory it is. And this is so because Aquinas's hylomorphic theory of material substances appears to contain elements of both constituent and relational ontologies and both substratum and bundle theories. As a result, I think that where exactly Aquinas's theory falls on the spectrum of views will depend on our model and how we interpret the relevant passages. According to the Simple Model, Aquinas's hylomorphic theory of material substances is indeed a kind of substratum theory, though it also contains elements of a relational ontology. According to the Expanded Model, Aquinas's hylomorphic theory of material substances remains a kind of substratum theory, but also shares certain similarities with certain varieties of bundle theory and eschews any elements of a relational ontology.

Like contemporary substratum theories, Aquinas's hylomorphic theory of material substances says that there is indeed something more to a material object than its properties: there

[33] For evidence of Aquinas's rejection of extramental universal properties, see, for example, In *libros posteriorum Analyticorum expositio* (hereafter, *In PA*) b. 2, l. 20; *QDSC*, q. 1, a. 9, resp.; and *DEE*, ch. 3. On the other hand, with the exception of certain accidents falling under the category of quantity (to be discussed later), Aquinas also rejects the claim that forms are intrinsically individuated, are particular by their very nature. Aquinas holds that the forms of material substances are individuated or made particular by the subjects in which they inhere. And so his hylomorphic theory of material substances does not easily square with contemporary trope nominalism either. In truth, he is somewhere in the middle. For more on Aquinas's *via media* with respect to forms, properties, and natures, see Jeffrey E. Brower, "Aquinas on the Problem of Universals," *Philosophy and Phenomological Research* 92 (2016): 715–735.

is a substratum in which the properties or forms of that material object inhere.[34] In fact, on the Simple Model, there are actually two substrata that are said to underlie the properties of any material object, corresponding to the two sorts of hylomorphic compounds discussed above. In an accidental unity, that which underlies the accidental form is a material substance. In a material substance, that which underlies the substantial form is prime matter. As mentioned above, most contemporary substratum theorists posit the existence of a "bare particular" to serve as the substratum for a material object's properties. However, on the Simple Model, neither the material substance that serves as the substratum for its accidental forms, nor the prime matter that serves as the substratum for substantial form, is a bare particular. Material substances, as we have seen, are themselves composite, composed of substantial form and prime matter. And, according to Aquinas, while prime matter is indeed "bare" (he often characterizes it as "pure potency"), it is not a particular.[35] On Brower's interpretation, the ultimate substratum of a substance's properties, prime matter, is best understood not as a bare particular, but as a kind of "gunky stuff" – something that is both infinitely divisible and non-particulate.[36]

According to the Simple Model, Aquinas holds that a material substance is composed of both its ultimate substratum, prime matter, and one of its forms or properties, its substantial form.

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[34] For ease of explanation and to highlight the comparison between Aquinas's views and those found within contemporary debates, in what follows, I will often refer to the forms of material substances (both their accidental forms and their substantial forms) as "properties" of those substances. In the contemporary sense, to speak of a property of a thing is just to speak of some feature or aspect of that thing, anything that can be said of or about that thing. In that sense, I think that all forms can be called properties. But, for Aquinas, not all forms are *mere* properties. Most notably, the rational soul, the substantial form of a human being, is able to exist and act on its own apart from the matter in which it inheres (see especially, *ST* I, q. 75, a. 2, resp.), and that doesn't seem like the sort of thing that any mere property could do. All the same, the rational soul does play the role of essential property within a human being. That just doesn't fully capture all that it does or is.

[35] Once again, to describe prime matter as "bare" is just to say that it fails to possess any intrinsic features of its own. For Aquinas, prime matter always exists as the prime matter of some material substance or other (it is never found without some substantial form inhering in it; see, for example, *ST* I, q. 7, a. 2, ad3), and, within any material substance, prime matter can be said to be modified by certain accidental features found within that substance (such as its quantity and its location), but even within a material substance, considered in itself, prime matter possesses none of those features. Those features are possessed by the material substance of which it is a part. Prime matter is pure potency. Actualized in any way, it is no longer prime matter, but common or designated matter.

[36] Brower, *Aquinas's Ontology*, 33–35, 113–129.

Because a material substance is not identified with its ultimate substratum, Aquinas's theory cannot be classified as a kind of thin particularism. And because the only property or form of which a material substance is said to be composed on this model is its substantial form, Aquinas's theory cannot be classified as a kind of thick particularism either. Indeed, if each accidental unity contains one and only one of a substance's accidental forms, then not even accidental unities are thick enough for thick particularism. As a result, on the Simple Model, Aquinas's version of substratum theory lies somewhere in between thin and thick particularism. Each hylomorphic compound, be it a material substance or an accidental unity, is composed of its substratum, as well as one, but no more than one, of its forms or properties.[37]

As Brower explains, the fact that, on the Simple Model, Aquinas's hylomorphic theory of material substances falls somewhere in between thin and thick particularism gives Aquinas's theory some distinct advantages over each of the others.[38] According to thin particularism, a material object is identified with a certain bare particular, and, as a result, it possesses all of its properties non-essentially. In other words, the same material object could, in principle, undergo a change in every one of its properties while remaining what it is.[39] On the Simple Model, however, a material substance is identified with a composite of substantial form and prime matter, and, as a result, it possesses at least one of its forms or properties (namely its substantial

[37] It may be open to a proponent of the Simple Model to posit the existence of complex or multi-accident accidental unities, accidental unities which include within their composition more than one of the substance's accidental forms (such as white-seated-Socrates, the accidental unity composed of Socrates, his pallor, and his seatedness). He or she could even posit the existence of what we might call a comprehensive accidental unity, an accidental unity which includes within its composition a material substance and *all* of its accidental forms. As it turns out, every proponent of the Simple Model of which I am aware stipulates that an accidental unity includes within its composition one and only one of the material substance's accidental forms. And they might have good reasons for doing so. But the option to expand accidental unities to include multiple accidental forms, and so recognize the existence of what we are calling thick particulars, is at least in principle available to them. See my "Accidental Forms as Metaphysical Parts," p. 80 for more on this point.

[38] Brower, *Aquinas's Ontology,* 136–139.

[39] Brower, *Aquinas's Ontology*, 136. This is not to say that, according to thin particularism, a material object could survive without any properties at all. A thin particular might necessarily have some property or other at every moment of its existence, even if there is no one property that it must constantly possess.

form) essentially. In other words, while a material substance could, in principle, undergo a change in each of its non-constituent properties while remaining what it is, it could not survive the loss of its substantial form, its one and only constituent form or property. And this does seem like a distinct advantage of the model. If we were to identify my cat, Nico, with the bare particular that underlies its size, shape, behavior, and all of its species-specific qualities, then it would be at least metaphysically possible for Nico to survive the loss of its size, shape, behavior, and all of its species-specific qualities and to gain entirely new ones. According to thin particularism, Nico, now a cat, could in principle become a horse. According to Aquinas's substratum theory, however, Nico is a composite of substantial form and prime matter, its substantial form being something like the form of "felinity." And, so, while Nico can survive the loss of his size, shape and behavior, he cannot survive the loss of his felinity. According to Aquinas's substratum theory, Nico, now a cat, could never become a horse. And that seems exactly right.

According to thick particularism, a material object is identified with the set of all of its properties together with the bare particular in which those properties inhere, and, as a result, it possesses all of its properties essentially. In other words, no material object can survive a change in any of its properties.[40] On the Simple Model, however, a material substance is identified with a composite of substantial form and prime matter, and, as a result, it possesses at least some of its forms or properties (namely its accidental forms) non-essentially. In other words, while a material substance cannot survive a change in its substantial form, it can, at least in principle, survive a change in every one of its other forms or properties.[41] And this also seems like a distinct advantage of the model. If we were to identify my cat Nico with the set of his properties,

[40] Brower, *Aquinas's Ontology*, 136–137.
[41] Once again setting aside the complication of proper and inseparable, non-proper accidents.

including his size, shape, behavior, etc., along with a certain bare particular, then Nico would not be able to survive the loss of his size, shape or behavior. According to thick particularism, Nico, now six pounds, eight ounces, could never weigh any more or less than that. According to Aquinas's substratum theory, however, Nico is a composite of substantial form and prime matter and so does not include, as further metaphysical constituents, his size, shape and behavior. And, so, while Nico cannot survive the loss of his felinity, he can survive a change in his current size and shape. According to Aquinas's substratum theory, Nico, now six pounds, eight ounces, could become much heavier. And that also seems exactly right.

On the Expanded Model outlined above, Aquinas's hylomorphic theory of material substances remains a kind of substratum theory, in that it says that there is more to a material substance than just its forms or properties, but it also shares certain features with certain versions of bundle theory. Like trope nominalist varieties of bundle theory, Aquinas's hylomorphic theory of material substances says that each of a material substance's forms or properties is a particular rather than a universal. And, on the Expanded model, it also says that each of those forms or properties is one of its metaphysical parts or constituents. As a result, on the Expanded Model, Aquinas's view also shares with the bundle theory a rather straightforward account of property possession: to exemplify, instantiate, possess, or to be characterized by, a certain form or property is to have that form or property as a proper part.

With that said, on the Expanded Model, Aquinas's hylomorphic theory of material substances is still a version of substratum theory, in that it says, contra bundle theory, that a material substance is not exhausted by its forms or properties. According to the Expanded Model, in addition to its various non-essential properties, every material substance has at least one further metaphysical part, a composite essence, which serves as the substratum in which its

accidental forms or properties are said to inhere. And so, in this way, on the Expanded Model, a material substance is a bit more like a thick particular, in that it is composed of each of its forms or properties as well as an underlying substratum. Though, once again, even the ultimate substratum of a material object on Aquinas's view, its prime matter, is not a bare particular, as is often the case for thick particularism.

If, on the Expanded Model, Aquinas's hylomorphic theory of material substances can be said to have similarities with certain kinds of bundle theory, then it is perhaps most like the nuclear bundle theory articulated and defended by Peter Simons. Simons characterizes his nuclear bundle theory as follows:

> Rather than a bare something as bearer or tie for the bundle of tropes, and rather than take the whole bundle, neglecting the distinction between essential and accidental tropes, consider a two-stage approach. In the first stage, we have a collection of tropes which must all co-occur as individuals. These form an essential kernel or nucleus of the substance…Such a nucleus forms the individual essence or individual nature of a substance, but will usually not be a complete substance, since there are further, non-essential properties that the substance has…The other tropes it has, and which may be replaced without the nucleus ceasing to exist, may be considered as dependent on the nucleus as a whole as bearer…The nucleus is thus itself a tight bundle that serves as the substratum to the looser bundle of accidental tropes, and accounts for their all being together.[42]

Like Simons's nuclear bundle theory, on the Expanded Model, Aquinas's hylomorphic theory of material substances features a sort of internal hierarchy within material substances, according to which various accidental properties or accidents inhere in the material substance's essence or nature, which is itself composite. And, as in Simons's nuclear bundle theory, on the Expanded Model, this internal hierarchy grounds the difference between those metaphysical parts that the

[42] Simons, "Particulars in Particular Clothing," 567–568. Simons himself makes the connection between his view and Aquinas's right after this passage, "If we had a separate substrate for the nucleus instead of accepting a bundle theory, we would arrive at a theory rather like that of Aristotle or Thomas, where matter is the substratum, the substantial form corresponds to the nucleus, and serves as the bearer for further, non-substantial tropes" (Simons, "Particulars in Particular Clothing," 568).

material substance can lose over time while remaining in existence and those that it cannot.[43] However, unlike Simons's nuclear essences, Aquinas's essences are not composed entirely of properties. Rather, they are composed of substantial form (its essential form or property) and prime matter, the featureless ultimate substratum of all material objects.

On the Expanded Model, then, Aquinas's hylomorphic theory of material substances shares certain features with both substratum theory and bundle theory. But there may also be some reasons to prefer Aquinas's theory over contemporary varieties of each of those sorts of views. One advantage that Aquinas's hylomorphic theory of material substances has over both thick particularism and any version of bundle theory that identifies material objects with sets of properties is that Aquinas is not similarly committed to the claim that material objects are *identical* to the set of their metaphysical parts. Aquinas rejects the thesis that composition is identity, the claim that a composite whole is nothing more than the sum of its parts and depends for its identity on the continued possession of exactly those parts.[44] And so in saying that material substances are composed of certain metaphysical constituents, he is not thereby committed to the claim that a material substance is identical to those metaphysical constituents and cannot survive any change in their membership. On the Expanded Model, a material substance is composed of various accidental properties, along with a composite essence in which those properties inhere, but it can also survive a change in some of those properties over time, namely those that fall outside of its essence. For thick particularism, and for certain versions of

[43] Though, once again, on the Expanded Model's account of the afterlife, human persons can and do survive the loss of their prime matter. And so we might say that the internal hierarchy grounds the difference between those *forms* that the material object can lose over time while remaining in existence and those that it cannot. Here too, however, some special story will have to be told about proper and inseparable, non-proper accidents.

[44] For evidence of Aquinas's rejection of the claim that a composite whole is nothing more than the sum of its parts, see, for example, *In duodecim libros Metaphysicorum Aristotelis expositio* (hereafter, *In Met.*). *In Met.*, b. 7, l. 17, 1674; and *DEE*, ch. 2. For a brief discussion of this feature of Aquinas's ontology, see Stump, *Aquinas*, 50–51 and Brower, *Aquinas's Ontology*, 62. And for evidence that Aquinas rejects the claim that a composite whole depends for its identity on the continued possession of the very same parts, see *ST* I, q. 119, a. 1, ad5.

bundle theory, however, a material object is taken to be identical to the set of its metaphysical constituents, and so cannot admit of any sort of change in its properties.

Due to the elements that it shares with other varieties of substratum theory, the Expanded Model might also have some advantages over other versions of the bundle theory. First, if the right way to think of properties or forms is as *ways* or *modes*, rather than as independently-existing entities, then Aquinas's account features underlying substrata of which they can be ways or modes.[45] Substantial forms can be understood as specific ways or modes of its underlying matter, particular ways in which that prime matter is actualized. Similarly, accidental forms can be understood as particular ways or modes of the material substance's essence or nature, particular ways or modes of existing as a member of this or that kind. Second, if particular properties or forms require an underlying subject in order to be individuated from other instances of the same sort of property or form, then Aquinas's account gives us an underlying subject that can serve as their individuator. Accidental forms can be individuated from other instances of the same sort of property by the particular composites of substantial form and prime matter in which they inhere, and substantial forms can be individuated from other instances of the same sort by the particular portion of prime matter in which they inhere.[46]

[45] For contemporary discussions of properties as "ways" or "modes" of objects, see, once again, Armstrong, *A World of States of Affairs*, 30–31, 96–99; Heil, *Ontological Point of View*, 126–128, *The Universe As We Find It*, 106–108, and "Accidents, Modes, Tropes, and Universals"; Lowe, *Four-Category Ontology*, 13–15. In the same way that, for Aquinas, not all forms are mere properties, we should also say that, for Aquinas, not all forms are mere modes. Substantial and accidental forms modify or actualize their subjects in certain ways, and so in that sense can be called ways or modes of that which they modify or actualize. But Aquinas also holds that both accidental and substantial forms, unlike mere modes or ways, can be held in existence apart from their subjects (in addition to the special case of the rational soul, Aquinas also thinks that this is possible for accidental forms, as demonstrated in the case of the Eucharist (see, especially, *ST* III, q. 77).

[46] If, as Brower suggests, prime matter comes in discrete hunks or portions, then the individuation of substantial forms by the matter in which they inhere is rather straightforward. But I actually think the story here is a bit more complicated. I discuss the individuation of substantial forms and material substances in more detail in my "Thomas Aquinas on the Metaphysical Structure of Artifacts," but, in brief, I think that, for Aquinas, the individuation of substantial forms is a sort of collaborative effort, a function of prime matter and certain accidental forms falling under the category of quantity. These quantitative accidents, which I think are best understood as the particular time and place in which the substantial form first comes to be, are themselves intrinsically individuated. So the real story, I think, is that substantial forms are individuated by the prime matter in which they inhere together with certain accidental forms falling under the category of quantity. Aquinas refers to this combination of prime matter and

Property individuation is tricky for bundle theory. According to bundle theory, the only way to distinguish one material object from another is with reference to its constituent properties. The constituent properties themselves, then, cannot be distinguished from other instances of the same property by reference to the material objects of which they are constituents. For, then the account of individuation would be circular. And so properties must be individuated either by some other component within the object (a substratum) or they must be self-individuated. The substratum components of Aquinas's theory help it to provide a solution to this problem for bundle theory. But what about those versions of bundle theory according to which tropes are self-individuated and capable of independent existence? Once we make tropes into self-individuated, independently-existing entities, it now becomes necessary to explain the apparent *unity* of a material object's features. What is it that bundles or binds these disparate tropes together to compose the objects of our experience? On the account that I have offered here, the underlying essence or nature of a material substance can explain the unity of material substances. The various accidental properties of a material substance are bundled or bound by the essence or nature that serves as their substratum. And the unity of prime matter and substantial form within that essence or nature is explained by the correlative natures of those entities: prime matter is the potency to substantial form's act.

To sum up, Aquinas's hylomorphic theory of material substances has within it the resources to address several of the key issues that arise for other contemporary theories of concrete particulars: it provides a plausible analysis of accidental and substantial change, it explains the unity and individuation of material objects and their properties, and it grounds the

quantitative accidents as "designated matter". The clearest support for this interpretation is found in Aquinas's commentary on Boethius's *De Trinitate* (*In BT*, q. 4, a. 2 and a. 4), though there are also suggestive remarks in his *DEE*, ch. 2. See also Christopher M. Brown, *Eternal Life and Human Happiness in Heaven: Philosophical Problems, Thomistic Solutions* (Washington, D.C.: CUA Press, 2021): 239.

existence and identity of particular forms in their substrata. In the next section, I will move on to explore two ways in which the Expanded Model, as a theory of concrete particulars, turns out to be preferable to the Simple Model.

IV. The Contemporary Case for Expansion

IV.A. Extrinsicality

With respect to substantial forms, the Simple Model of Aquinas's hylomorphic theory of material substances is a constituent ontology: substantial forms exist within the material substances that possess them, and the material substances that possess them do so by including their substantial forms among their metaphysical parts or constituents. This is also the case with respect to accidental forms and accidental unities: accidental forms exist within the accidental unities that possess them, and the accidental unities that possess them do so by including their accidental forms among their metaphysical parts or constituents. But with respect to accidental forms and material substances, the Simple Model is actually closer to a relational ontology: accidental forms exist outside of the material substances that possess them, and the material substances that possess them do so by being related via inherence to something outside of themselves. Now, most relational ontologies are built on a Platonic conception of properties, that is, a theory of properties according to which properties are transcendent universals, existing outside of space and time. And most relational ontologies offer the very same account for all of an object's properties. The Simple Model's account of accidental forms and material substances, on the other hand, is built on a theory of forms as tropes, that is, as immanent particulars, existing in time and space, and located exactly where their possessors are. The Simple Model also rejects the claim that material substances are related to all of their forms as to something outside of themselves. This is only the case for material substances with respect to the accidental

forms. But for the case of material substances and their accidental forms, the Simple Model is indeed a kind of relational ontology.

One concern for relational ontologies is called the problem of extrinsicality.[47] Recall that, according to relational ontologies, properties exist outside of the objects that possess them, and the objects that possess them do so by being related in some way to something outside of themselves. What follows from this is that objects possess each of their properties extrinsically: an object is a certain way or has a certain character not by virtue of itself or anything within itself, but by virtue of how something else is and how the object is related to that thing. For pure relational ontologies, this means that objects possess no intrinsic features whatsoever: there is no way that an object is in itself, on its own, separate from its relations to other things. On the Simple Model, material substances are not completely lacking in intrinsic features. Material substances possess their substantial forms intrinsically, and so any material substance is of a certain essential kind and has a certain essential nature, intrinsically. For example, on the Simple Model, a human being is intrinsically human by virtue of possessing a distinctively human substantial form as one of its metaphysical parts or constituents. However, on the Simple Model, it is still the case that material substances possess no intrinsic accidental features. Accidental features, on this model, are all extrinsic. So, for example, on the Simple Model, while it is true that a human being is intrinsically human by virtue of possessing a distinctively human substantial form as one of its metaphysical parts or constituents, a human being is only extrinsically a certain size, shape, and color. This is especially problematic as an interpretation of Aquinas, because Aquinas holds that material substances are at least in part individuated by their accidents.[48] And so it will follow on the Simple Model that for individual human beings, the fact

[47] See, for example, Koons and Pickavance, *Metaphysics*, 108–109 and Koons and Pickavance, *Atlas of Reality*, 178–179.
[48] See footnote 46 above.

that they are particular human beings and that they are the particular human beings that they are is an extrinsic fact about them. They are particulars, and the particulars that they are, not in themselves, or on their own, or separate from their relations to other things, but by virtue of things outside of themselves and their relations to those things. To put it another way, on the Simple Model, human beings turn out to be not only intrinsically very similar to one another, but intrinsically identical. There is no intrinsic difference between one human being and another. Now, for some of the accidental features of material substances, it makes perfect sense to say that these are extrinsic features (such as, for example, my being a professor, or a brother, or a husband). But what about my size and shape and color? What about my particular habits of character? What about my particular thoughts and actions? What about my particularity or individuality (a feature accidental to me in the sense of being outside of my essence as human, though inseparable to me as the particular human being that I am)? That these apparently intrinsic features all turn out to be extrinsic is, at the very least, a surprising result of the model. And if we are inclined to think that these or other accidental features simply must be intrinsic or that there simply must be some intrinsic accidental features of individual material substances, then we have a serious concern for the Simple Model.[49]

Notice that this is not a problem faced by the Expanded Model. For, on that model, material substances possess each of their properties or forms, both their substantial forms and their accidental forms, as metaphysical parts or constituents. As a result, on the Expanded Model,

[49] The extrinsicality of accidental features on the Simple Model is somewhat mitigated by its commitment to an understanding of accidental forms as immanent particulars or tropes. On the Simple Model, accidental forms are not *far* outside of the material substances that possess them. Accidental forms do not transcend the physical world in the way that they would on a Platonic theory of forms. They are located precisely when and where the material substances that possess them are. However, it is still true on this model that accidental forms are external to the material substances that possess them. Material substances do not possess those accidental forms as metaphysical parts or constituents and so are related to them via inherence as something outside of themselves. It is as if material substances are "clothed" in their accidental forms; the accidental forms rest "on top" of them without ever entering into their composition. And that something is clothed is an extrinsic feature of that thing, not an intrinsic feature. And so I think the problem persists. I thank an anonymous reviewer for bringing this point to my attention.

material substances possess each of their properties or forms intrinsically. A human being is a certain color, size, and shape, is a certain kind of person, and is a particular instance of the kind human being, by virtue of something within itself. And that is a count in favor of the Expanded Model.

IV.B. Too-Many-Possessors

The Simple Model counts as a version of substratum theory in that it says that there is more to material objects than their properties: there is, in addition to those properties, a "substratum" in which those properties are said to inhere. In fact, the Simple Model offers a two-tiered substratum theory: for material substances, the substantial form inheres in prime matter, which serves as its substratum; for accidental unities, the accidental form inheres in the material substance, which serves as its substratum. Now, most substratum theories are built on a bare particularist conception of substrata, that is, a theory of substrata according to which they are intrinsically featureless, brutely particular entities. The Simple Model rejects this understanding of substrata. Neither prime matter, the substratum for substantial forms, nor material substances, the substrata for accidental forms, are bare particulars. But its commitment to there being more to material objects than their properties, paired with its inherence account of property possession, places it within the larger contours of a substratum theory.

One concern for substratum theories is called the "crowding" objection or the problem of too-many-possessors.[50] On substratum theories, every property of a concrete particular bears a relation to two different things: the concrete particular of which it is a metaphysical part or constituent, and the substratum in which it inheres. Now, if inherence and constituency are both ways of possessing, and thus being characterized by, a property, then for every property possessed by some concrete particular, there are actually two things that possess, and are thus

[50] See, for example, Bailey, "No Bare Particulars."

characterized by, that property: the concrete particular, and its substratum. For example, for every apple that possesses the property of being red, there are actually two red things there: the apple and its substratum. And for every human being that possesses the property of being human, there are actually two humans there: the human being and its substratum. But that seems like too many red things, too many humans.

Now, substratum theorists can get around this worry by denying that inherence is a way of possessing, and thus being characterized by, a property. For in that case, only the concrete particular, and not its substratum will possess and thus be characterized by the relevant property. But, for the Simple Model, this response is unavailable. For recall that, according to the Simple Model, there are, and must be, two ways to possess accidental properties or forms. Along the lines of a constituent ontology, an accidental unity possesses its accidental form by constituency, by having that accidental form as one of its metaphysical parts. And along the lines of a relational ontology, a material substance possesses its accidental form by inherence, by serving as the substratum in which that accidental form inheres. To deny that inherence is a way of possessing and thus being characterized by a property or form would be to deny that material substances possess, and are thus characterized by, their accidental forms. It would be to say that, strictly speaking, material substances possess no accidental features or properties whatsoever: not intrinsically, not extrinsically, not in any way. Material substances would bear certain relations to other things which possess various accidental features, but they would possess none of those features themselves. And that seems like the wrong result. So it looks like proponents of the Simple Model should say that, for any accidental form or property possessed by a material substance, there are indeed two things that possess that property: the material substance in which

the accidental form inheres and the accidental unity of which it is a metaphysical part or constituent. And so it looks like the Simple Model faces a too-many-possessors problem.[51]

Notice, once again, that this is not a problem faced by the Expanded Model. For, on the Expanded Model, there is just one way to possess, and thus be characterized by, a property: by constituency. A material substance possesses both its substantial form and its accidental forms by having them among its metaphysical parts or constituents. Substantial forms inhere in prime matter, and accidental forms inhere in essences or natures, on this model, but inherence is not a mode of property possession. Inherence is merely a mode of placement, a way of specifying the internal structure of material substances. Unlike the Simple Model, the Expanded Model can account for all required instances of property possession in terms of constituency. And so the fact that the Expanded Model also avoids the too-many-possessors problem faced by the Simple Model is another count in its favor.[52]

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[51] And, indeed, the problem gets even worse for Brower's account. For, his solution to the problem of temporary intrinsics requires not only that accidental unities possess the accidental forms of which they are composed, but also that they possess those accidental forms in the strict or primary sense, leaving only a secondary or derivative sense in which those forms are possessed by the material substances in which they inhere. For more on this aspect of the problem for Brower's account, see Andrew M. Bailey, "The Priority Principle," *Journal of the American Philosophical Association* 1 (2015): 163–174. I discuss some ways in which Brower might try to avoid or resolve this issue in my "Hylomorphism and the Priority Principle," *Metaphysica* 18 (2017): 207-230.

[52] If, following the proposal outlined in footnote 22 above, a proponent of the Expanded Model were to recognize the existence of accidental unities, then there is a risk that this will reintroduce the problem of too-many-possessors. For in that case, for every accidental form possessed by a material substance, there will once again be two hylomorphic compounds (an accidental unity and the material substance) that possesses that form. Moreover, on the Expanded Model with accidental unities, both of these hylomorphic compounds will possess the relevant accidental form in the very same way (via parthood or constituency). (Thanks to an anonymous reviewer for raising this objection). I think that there are at least a few strategies available to a proponent of the Expanded Model with accidental unities for getting around this worry. He or she could push the line I suggested earlier that, on the Expanded Model's understanding of accidental unities, it is misleading to speak of accidental unities as separate hylomorphic compounds distinct from the material substances to which they are related. For, on this model, to refer to any accidental unity within a material substance is just to refer to some subset of the metaphysical parts of that material substance for purposes of explanation within a particular context. Or he or she could argue that because of their derivative status, accidental unities are not the right sorts of things to be able to possess any of the properties of which they are composed. Or he or she could make use of some kind of maximality principle, according to which no proper part of an object that possesses a property itself possesses that same property. But the proponent of the Expanded Model with accidental unities has to be careful not to rely on any strategy that is also available to a proponent of the Simple Model. For, in that case, its ability to avoid or address the relevant concern would no longer be a unique advantage of the Expanded Model. I discuss some of these and other strategies for dealing with the problem of too-many-possessors, as well as their various advantages and disadvantages, in more detail in my "Hylomorphism and the Priority Principle."

V. Conclusion

There are, then, two competing models for how to understand Aquinas's hylomorphic theory of material substances: the Simple Model, according to which Aquinas's theory is a kind of substratum theory, though it also contains elements of a relational ontology, and the Expanded Model, according to which Aquinas's theory remains a kind of substratum theory, but also has similarities with certain varieties of bundle theory and eschews any elements of a relational ontology. Here I have argued that the Expanded Model is the preferable model, due to the fact that it successfully avoids two major worries for the Simple Model as a theory of concrete particulars: the problem of extrinsicality and the too-many-possessors problem. No doubt there is much more to say on behalf of, and with respect to, the Expanded Model (how it squares with other elements of Aquinas's metaphysics, how it accounts for the inner complexity of accidental unities, artifacts, and the human soul, etc.), but what I hope to have shown here is that as a theory of concrete particulars, it improves upon those theories currently on offer in the contemporary debate in several ways. In any case, Aquinas's hylomorphic theory of material substances, understood along the lines of either the Simple Model or the Expanded Model, remains a serious contender.[53]

[53] Many thanks to Youssef Aguisoul and an anonymous referee for helpful comments on earlier versions of this paper.