

Thomas Aquinas on the Metaphysical Structure of Artifacts

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I. Introduction

Though there continues to be much debate over how precisely to draw the distinction, it is now standard to interpret St. Thomas Aquinas as recognizing two main types of material objects: substances and artifacts.¹ And it is generally agreed upon that substances and artifacts can be distinguished from one another both by how they come to be and by the kind of form from which their existence and identity is derived. On what I will call the “standard model”, material substances are those material objects that come to be as a result of some substantial form inhering in prime matter, and artifacts are those material objects that come to be as a result of some accidental form inhering in one or more material substances.² According to this model, material substances are best understood as composed of prime matter and substantial form, and material artifacts are best understood as composed of one or more substances and a single accidental form.

In this paper, I first provide an overview of the basic elements of Aquinas’s theory of material artifacts and the main commitments of what I am calling the “standard model”. I then raise two concerns for that model. First, there are passages in which Aquinas seems to argue that accidental forms should be understood not as inhering in substances “from the outside”, as it

¹ See, for example, J. E. Brower, *Aquinas’s Ontology of the Material World*, 210-216; C. M. Brown, *Aquinas and the Ship of Theseus*, 98-103; C. M. Brown, “Artifacts, Substances, and Transubstantiation”; E. Feser, “Aquinas on the Human Soul”; E. Feser, *Scholastic Metaphysics*, 164-171; A. Marmodoro and B. Page, “Aquinas on Forms, Substances, and Artifacts”; D. Oderberg, *Real Essentialism*, 166-170; R. Pasnau, *Thomas Aquinas on Human Nature*, 80-82, 415; M. Rota, “Substance and Artifact in Thomas Aquinas”; E. Stump, *Aquinas*, Ch. 1; E. Stump, “Emergence, Causal Powers, and Aristotelianism in Metaphysics”; E. Stump, “Substances and Artifacts in Aquinas’s Metaphysics”.

² As we will see, one of the major points of debate is whether all things produced by human art or skill belong to the category of artifact or whether certain substances can also be produced in this way. Aquinas seems to admit this possibility.

were, but as entering into their composition as further components beyond their essential parts. Second, there are passages in which Aquinas seems to argue that it is impossible for any accidental form to be shared by, or to hold between, two or more substances. These observations, I think, give us good reason to doubt that the standard model adequately captures Aquinas's views on substances and artifacts. Accordingly, in section three of the paper, I offer an alternative model for understanding the metaphysical structure of substances and artifacts – one which, I think, more accurately reflects Aquinas's own commitments. Here I also highlight various complications for Aquinas's theory of material artifacts that this model introduces. In the final section of the paper, I consider what implications a shift to the alternative model might have for how we understand the identity and persistence conditions of such entities.

II. The Standard Model

There is no perfect match for the English term 'artifact' in Aquinas's Latin. But Aquinas does in several places refer to certain material objects as *artificialis* or *artificiatum*, signaling that they are produced not by nature but by art.³ Importantly, not all material objects produced by art are artifacts in the proper sense. Aquinas recognizes that some material substances (bread, for example, or the frogs and serpents produced by magicians in the book of Exodus) are or can be

³ See, for example, Thomas Aquinas, *In Met.*, B. VII, L. 2, N. 1277; Aquinas, *In DA*, B. II, L. 1, N. 218; Aquinas, *In DA*, B. II, L. 2, N. 237; Aquinas, *In Phys.*, B. I, L. 12, N. 109; Aquinas, *In Phys.*, B. II, L. 1, N. 142; Aquinas, *In Sent.* B. IV, D. 44, Q. 1, A. 1, QC. 2, Ad. 4.

produced by art.⁴ And there are plenty of material objects produced by nature which are nonetheless not substances but aggregates, such as rivers, mountains, and heaps of stones.⁵

There seem to be two essential features of artifacts, then. First, in contrast to material substances, artifacts are not themselves substances, but are built from, or composed of, material substances. As Aquinas puts it, artifacts are substances only “with respect to their matter”.⁶ Second, in contrast to naturally occurring aggregates, artifacts have an essential intentional or purposive element. Each artifact is created or fashioned by human skill or art for a particular purpose. Understood in this way, then, the category of artifact includes any material object produced by human art or skill for a particular purpose and which includes within its composition one or more material substances and some particular accidental form to which it owes its existence and its identity.

⁴ See, for example, Aquinas, *ST*, III, Q. 75, A. 6, Ad 1. For discussion of this point and how we should understand the substance/artifact distinction in light of it, see Rota, “Substance and Artifact”, Brown, “Artifacts, Substances, and Transubstantiation”, and Brower, *Aquinas’s Ontology of the Material World*, 210-216. Given that Aquinas seems to hold that there are certain substances which human beings can produce by art, it seems that we can go one of two ways. We can either, as Rota and Brower do, hold fixed the claim that artifacts are those material objects that are made by human beings and admit that some artifacts are also substances, or we can, as Brown does, and as I will proceed to do in this paper, hold fixed the claim that artifacts are those material objects that, unlike substances, depend for their existence and identity on one or more accidental forms, and admit that some material objects made by human beings are not artifacts. I actually do not think that it matters for my purposes which way we go. Readers sympathetic to the Rota and Brower proposal may simply read all of my references to artifacts as pertaining only to those artifacts which are not substances.

⁵ Aquinas speaks of heaps of stones, for example, as natural aggregates at *ST*, III, Q. 2, A. 1, Co.; *ST*, III, Q. 90, A. 3, Ad. 3; and *In Met.*, B. VII, L. 17, N. 1672-1674. There are also naturally occurring, non-substantial material objects which Aquinas calls “accidental unities” or “accidental beings”. An accidental unity is a composite material object composed of a single material substance and one or more of its accidents. Accidental unities include such things as “white-Socrates”. Though I will not consider them in any detail here, I think that such entities are best understood as having the same sort of metaphysical structure as single-substance artifacts, just without the intentional or purposive element. For more on accidental unities or accidental beings in the thought of Aquinas, see Brown, *Aquinas and the Ship of Theseus*, 102-103; Oderberg, *Real Essentialism*, 167-170; Brower, *Aquinas’s Ontology of the Material World*, 9-15. And for a pretty extensive list of references in the works of Aquinas to such entities, see Brown, *Aquinas and the Ship of Theseus*, 112 fn. 152.

⁶ See, for example, Aquinas, *In DA.*, B. II, L. 1, N. 218: “*Unde corpora artificialia non sunt in genere substantiae per suam formam, sed solum per suam materiam*”. See also: Aquinas, *In Met.*, B. V, L. 5, N. 818; Aquinas, *In Met.*, B. VIII, L. 3, N. 1719.

Aquinas cites several examples of artifacts throughout his works: man-made material objects such as statues⁷, axes⁸, saws⁹, shoes¹⁰, and houses¹¹, and also certain groups of things or people, such as cities¹² and armies¹³. From his examples, we can, I think, distinguish between two main types of artifacts: single-substance artifacts and multi-substance artifacts. Single-substance artifacts are those artifacts that involve just one material substance and just one accidental form. A bronze statue, for example, is a single-substance artifact produced by giving some particular shape to some particular portion of bronze. Multi-substance artifacts are those artifacts that involve two or more material substances united by a single accidental form. An axe, for example, is a multi-substance artifact produced by taking a piece of wood and a piece of iron and uniting them by some particular bond or relation. And a house is a multi-substance artifact produced by placing some bricks and timbers in a certain order, arrangement, configuration, or structure.

What I have presented thus far are the basic elements of Aquinas's theory of material artifacts. Now I want to discuss the main commitments of what I am calling the "standard model". According to the standard model for understanding the metaphysical structure of substances, material substances are understood as composed of prime matter and substantial form; each substance is a third thing composed of these two things. A lump of bronze, for

⁷ See, for example, Aquinas, *In Met.*, B. VII, L. 2, N. 1277; Aquinas, *DPN*, Ch. 1; Aquinas, *SCG*, III, Ch. 104, N. 8; Aquinas, *QQ*, XI, A.6, Ad. 3; Aquinas, *In Sent.*, B. IV, D. 44, Q. 1, A. 1, QC. 2, Ad 4; Aquinas, *In Sent.*, B. IV, D. 44, Q. 1, A. 1, QC. 3, Co.

⁸ See, for example, Aquinas, *In DA*, B. II, L. 1, N. 237-238.

⁹ See, for example, Aquinas, *In DA*, B. II, L. 1, N. 218.

¹⁰ See, for example, Aquinas, *In Met.*, B. V, L. 8, N. 870.

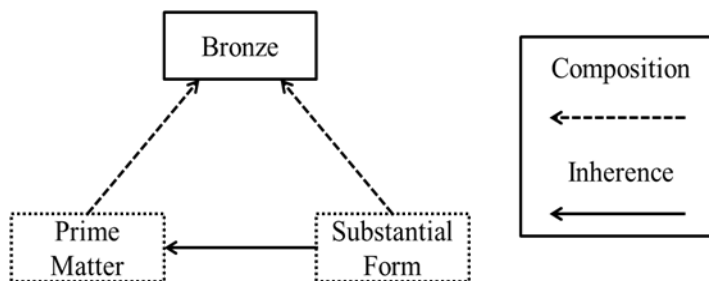
¹¹ See, for example, Aquinas, *ST*, I, Q. 76, A. 8, Co; Aquinas, *ST*, III, Q. 2, A. 1, Co.; Aquinas, *ST*, III, Q. 90, A. 3, Ad. 3; Aquinas, *SCG*, II, Ch. 72, N. 3; Aquinas, *SCG*, B. IV, Ch. 35, N. 7; Aquinas, *In DA*, B. II, L. 1, N. 218; Aquinas, *QDA*, Q. 10, Ad. 16; Aquinas, *QDSC*, A. 4, Ad. 4; Aquinas, *In Phys*, B. I, L. 3, N. 22; Aquinas, *In Phys*, B. I, L. 10, N. 78; Aquinas, *In Met.*, B. V, L. 3, N. 779; Aquinas, *In Met.*, B. XII, L. 3, N. 2447; Aquinas, *In Sent.*, B. II, D. 17, Q. 3, A. 1, Co.

¹² See, for example, Aquinas, *SCG*, B. IV, Ch. 35, N. 7; Aquinas, *In Met.*, B. V, L. 3, N. 779.

¹³ See, for example, Aquinas, *SCG*, B. IV, Ch. 35, N. 7; Aquinas, *ST*, III, Q. 90, A. 3, Ad. 3; Aquinas, *In Phys*, B. I, L. 10, N. 78; Aquinas, *In Met.*, B. V, L. 3, N. 779.

example, is best understood as composed of prime matter and the substantial form of bronze-ness:

Figure 1:

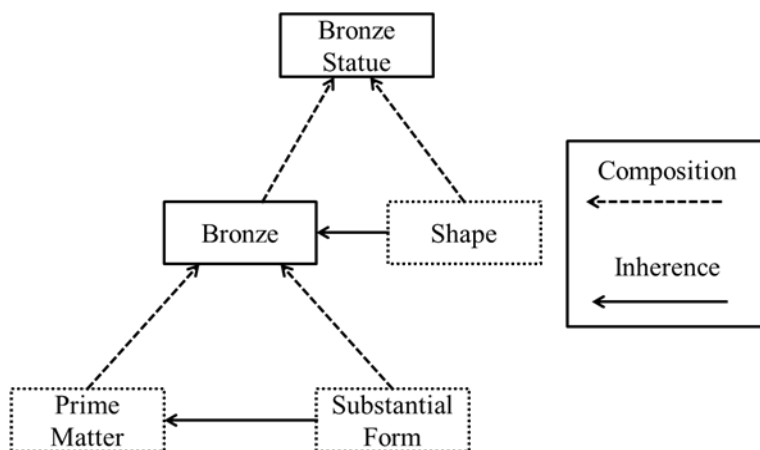


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Artifacts, on the other hand, are understood as composed of one or more material substances and a single accidental form. Each single-substance artifact, for example, is best understood as composed of a single material substance (which is itself composed of prime matter and substantial form) and a single accidental form. A bronze statue, for example, is composed of a lump of bronze and a particular shape:

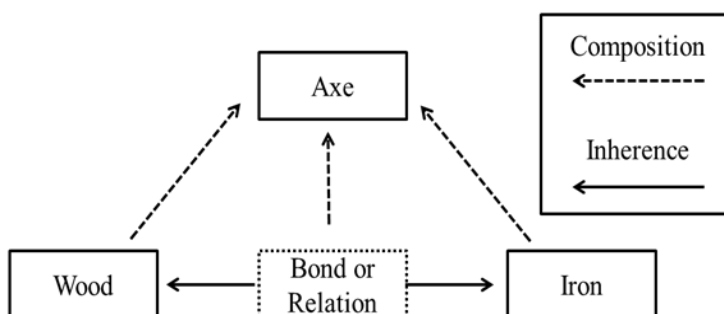
¹⁴ This figure and those that follow are all based on figures provided by Jeff Brower in his *Aquinas's Ontology of the Material World* (see especially the diagram on 12). Only the first two map onto actual figures found in that text, and so only the first two are elements of the standard model that Brower himself would accept. Those that follow are my own adaptations which go beyond Brower's views.

Figure 2:



And each multi-substance artifact is best understood as composed of two or more substances together with the accidental form by which they are united. An axe, for example, is composed of wood, iron, and a certain bond or relation which holds between the two:

Figure 3



In what follows, when I refer to the “standard model” for understanding the metaphysical structure of substances and artifacts, this is the model that I have in mind.

III. Two Problems for the Standard Model

The standard model has a lot going for it. It is simple, straightforward, and aligns well with those texts in which Aquinas describes the substance or substances of which an artifact is

composed as its “matter” and the accident which inheres in that matter as its form.¹⁵ Nevertheless, I think that there are good reasons to doubt that the standard model properly captures Aquinas’s own commitments. In what follows, I will argue that the standard model not only over-simplifies his account, it also relies on certain assumptions that Aquinas himself appears to reject. In particular, I will focus on two key problems for the standard model which I think are sufficient to motivate the search for an alternative.

A. Accidental Forms Among the Parts of Material Substances

The standard model understands artifacts to be composed of one or more material substances and a single accidental form. A single-substance artifact, for example, is best understood as composed of a single material substance and a single accidental form. On this model, accidental forms are understood as inhering in material substances “from the outside”, as it were. An accidental form is not in any way a part or component of the material substance in which it inheres. Rather, it is something added to it, which modifies or alters that substance in a particular way, but which also comes to compose with that substance some third thing beyond both.¹⁶ However, there are several passages across Aquinas’s texts that suggest that this misunderstands what he takes to be the relationship between a material substance and its accidental forms. Consider, for example, the following passage from the *Summa theologiae*:

in things composed of matter and form, the *suppositum* and its nature or essence must be distinguished, since the essence or nature includes in itself only that which falls under the definition of the species, just as humanity includes in itself that which falls under the definition of human being. For this human being is a human being, and this refers to his humanity, namely, that by which the human being is a human being. But the individual matter, with all of the individuating accidents, does not fall under the definition of the species, for this flesh and these bones, or this whiteness, or this blackness, or other things

¹⁵ See, for example, Aquinas, *DPN*, Ch. 1.

¹⁶ See, for example, Brown, *Aquinas and the Ship of Theseus*, 102-103; Oderberg, *Real Essentialism*, 167-170; and Brower, *Aquinas’s Ontology of the Material World*, 9-15. These three authors will sometimes refer to such entities as accidental unities, not artifacts, though from their examples it is clear that single-substance artifacts would be subject to the same analysis.

of this sort do not fall under the definition of a human being. Hence this flesh and these bones and the accidents individuating this matter are not included in humanity. Nevertheless, they are included in that which is a human being. Hence, that which is a human being possesses in itself something that humanity does not. And for this reason a human being and his humanity are not totally the same, but humanity refers to a formal part of the human being, since the defining principles are formally related to the individuating matter.¹⁷

Let me unpack this passage a bit so that you can see why I think it shows what I think it shows.

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*. ‘Humanity’ here refers to a human being’s essence or nature. That a human being possesses a human essence or nature is what makes that human being a human being. Importantly, as Aquinas explains elsewhere, the essence or nature of any material substance is itself a composite entity: it includes, as parts of it, both form and matter.¹⁸ The form that is included in the essence of a material substance is its substantial form. In the case of human beings, for example, a human essence or nature includes the person’s rational soul. Aquinas calls the matter that is included in the essence of a material substance its “common matter.”¹⁹ 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. But no two human beings are composed of the very same flesh and

¹⁷ “*in rebus compositis ex materia et forma, necesse est quod differant natura vel essentia et suppositum. Quia essentia vel natura comprehendit in se illa tantum quae cadunt in definitione speciei, sicut humanitas comprehendit in se ea quae cadunt in definitione hominis, his enim homo est homo, et hoc significat humanitas, hoc scilicet quo homo est homo. Sed materia individualis, cum accidentibus omnibus individuantes ipsam, non cadit in definitione speciei, non enim cadunt in definitione hominis haec carnes et haec ossa, aut albedo vel nigredo, vel aliquid huiusmodi. Unde haec carnes et haec ossa, et accidentia designantia hanc materiam, non concluduntur in humanitate. Et tamen in eo quod est homo, includuntur, unde id quod est homo, habet in se aliquid quod non habet humanitas. Et propter hoc non est totaliter idem homo et humanitas, sed humanitas significatur ut pars formalis hominis; quia principia definiuntia habent se formaliter, respectu materiae individuantis*” (Aquinas, *ST*, I, Q. 3, A. 3, Co.).

¹⁸ See, for example, Aquinas, *DEE*, Ch. 2 and Ch. 6; Aquinas, *ST*, I, Q. 29, A. 2, Ad. 3; Aquinas, *QDPD*, Q. 9, A. 1, Ad. 6.

¹⁹ See, for example, Aquinas, *DEE*, Ch. 2 and Ch. 6; Aquinas, *ST*, I, Q. 29, A. 2, Ad. 3; Aquinas, *QDPD*, Q. 9, A. 1, Ad. 6.

the very same bones. To account for this, early on in his *De ente et essentia*, Aquinas makes a distinction that will carry on through the rest of his works between two sorts of matter found within a material substance: undesignated and designated.²⁰ Undesignated or common matter is, as we have just seen, included in the essence of a material substance. Common matter is the matter which, together with a thing's substantial form, places that thing in its kind. And for human beings this is flesh and bones. Designated matter, on the other hand, is the matter which makes a thing the particular thing that it is, distinct from other members of its kind. In the case of human beings, each human being is composed not only of flesh and bones but of *this* flesh and *these* bones. And to speak of this flesh and these bones, the particular matter of which an individual human being is composed, is to speak of his or her designated matter.

Now, what is it, precisely, that designates matter, that sets one hunk of matter apart from other hunks of the same type? As Aquinas explains, prime matter, the most basic material component of any material substance, includes within itself no designations whatsoever, since it is nothing else but pure potency.²¹ And, as we have seen, common matter, which does contain more "specific content" than prime matter, still only includes those general designations that make it the case that an individual material substance possesses a certain type of matter. What is it, then, that designated matter possesses which common matter lacks? In several places, Aquinas explains that the common matter that an individual possesses becomes designated by means of the quantitative dimensions that the individual material substance occupies, and these quantitative dimensions, Aquinas tells us, are accidents falling under the category of quantity.²² Designated matter is best understood, then, as common matter designated or particularized by

²⁰ Aquinas, *DEE*, Ch. 2.

²¹ For descriptions of prime matter as "pure potency," see, for example: Aquinas, *SCG*, I, Ch. 17, N. 7; Aquinas, *ST*, I, Q. 115, A. 1, Ad. 2.

²² The clearest explication of this point is in Aquinas's commentary on Boethius's *De Trinitate* (Aquinas, *In BT*, Q. 4, A. 2 and A. 4), but he also makes note of this fact in his *DEE*, Ch. 2.

certain quantitative dimensions, or accidents in the category of quantity (and, in turn, 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).

What, then, is the relationship between an individual material substance, or *suppositum*, its essence or nature, its designated matter, and the quantitative dimensions by which its matter is designated? In the passage cited above, Aquinas tells us that the relationship between the essence of a thing and the thing itself, the *suppositum*, is a mereological one: the essence of a thing is one of its parts. What other parts does an individual material substance have beyond its essence? Aquinas says here that the other parts of an individual substance include its “individual matter” and its “individuating accidents.” We now know that what Aquinas is referring to here is the designated matter of an individual material substance and the quantitative dimensions by which that matter is designated. It seems, then, that for Aquinas, an individual material substance includes among its parts at least some of its accidents. It must include at least the quantities that designate its matter, since the form and matter that comprise its essence are not enough to compose any particular individual. But notice that, in this passage, Aquinas also says that the parts of an individual substance beyond its essence include various other non-essential attributes, such as its color and “other things of this sort.” This passage, then, would seem to support the interpretation that, for Aquinas, an individual substance includes among its parts not only its prime matter and its substantial form, as the standard model would have it, but also the accidents that help to individuate it from others of the same kind, as well as various qualities and “other things of this sort” (which is to say, at least some of its other accidental forms).

And this is not an isolated remark. In his *Commentary on Aristotle's Metaphysics*, Aquinas makes the very same point:

Humanity is not altogether the same as a human being, since humanity signifies only the essential principles of a human being and excludes all of the accidents. For humanity is that by which a human being is a human being, and so includes none of the things that are accidental to a human being. Hence, all of the accidents possessed by a human being are excluded from the definition of humanity. Now, it is this particular human being himself that is a human being, that possesses the essential principles, and is that in which accidents can inhere. And so, even though the definition of a human being does not include any of the accidents that a human being possesses, nevertheless ‘human being’ does not refer to something separate from those accidents. And therefore ‘human being’ refers to the whole, and ‘humanity’ refers to a part.²³

Here again we have the claim that a human being, an individual material substance, includes among its parts more than its essence. Here Aquinas explains that ‘humanity’ is only one part of the greater whole that is an individual human being. What else does this greater whole include? While Aquinas does not explicitly say that the individual material substance that is a human being includes the accidents that it possesses among its parts, he does say that a human being’s humanity (her essence or nature) is only one part of her, and that the term ‘human being’ does not refer to something separate from those accidents. We might reasonably infer, then, that in this passage Aquinas means for these accidents to be included among the additional parts to which he is referring. What is most interesting about this particular passage is that it describes accidents as both inhering in a material substance and as being included in the whole that is that material substance. This would seem to count against the standard model’s assumption that accidents must inhere in material substances “from the outside”.

Finally, that Aquinas holds that there is a mereological difference between the nature or essence of a thing and the *suppositum* is perhaps most clearly illustrated in his account of the incarnation. So, for instance, in his treatment of the incarnation in the *Tertia pars*, he states

²³ “*Humanitas autem pro tanto non est omnino idem cum homine, quia importat tantum principia essentialia hominis, et exclusionem omnium accidentium. Est enim humanitas, qua homo est homo: nullum autem accidentium hominis est, quo homo sit homo, unde omnia accidentia hominis excluduntur a significatione humanitatis. Hoc autem ipsum quod est homo, est quod habet principia essentialia, et cui possunt accidentia inesse. Unde, licet in significatione hominis non includantur accidentia eius, non tamen homo significat aliquid separatum ab accidentibus; et ideo homo significat ut totum, humanitas significat ut pars*” (Aquinas, *In Met.*, B. 7, L. 5, N. 1379).

‘Nature’ refers to the essence of the species, which the definition signifies. And if nothing else were found joined to that which pertains to the notion of the species, then it would not be necessary to distinguish the nature from the *suppositum* of the nature, which is the individual subsisting in that nature, since, in this case, every individual subsisting in some nature would be altogether identical to its nature. Now, in certain subsisting things something can in fact be found which does not pertain to the notion of the species, namely accidents and the individuating principles, as is most clear in those things that are composed of matter and form. And therefore, in such cases the nature and the suppositum are different things, not as if they were altogether separate from one another, but since the *suppositum* includes the nature of the species and certain other things over and above the notion of the species, ‘suppositum’ refers to the whole, which possesses the nature as a formal part and is perfective of it.²⁴

Once again, in this passage, Aquinas explains that the essence or nature of a material substance does not exhaust its composition. He explains here that any individual material substance will also include among its parts its “individuating principles,” which we now know include its designated matter and the quantitative dimensions by which that matter is designated, as well as its accidents. As in the two previous passages, Aquinas places no restriction here on the sorts of accidents that he wishes to include. The most straightforward way of reading these sorts of passages, then, I submit, is to see them as outlining a view according to which accidental forms are to be included among the parts of the individual material substances which possess them.

The first thing that the standard model appears to get wrong, then, is that it takes single-substance artifacts to be composed of some particular material substance plus some

²⁴ “*Natura enim significat essentiam speciei, quam significat definitio. Et si quidem his quae ad rationem speciei pertinent nihil aliud adiunctum inveniri posset, nulla necessitas esset distinguendi naturam a supposito naturae, quod est individuum subsistens in natura illa, quia unumquodque individuum subsistens in natura aliqua esset omnino idem cum sua natura. Contingit autem in quibusdam rebus subsistentibus inveniri aliquid quod non pertinet ad rationem speciei, scilicet accidentia et principia individuantia, sicut maxime apparet in his quae sunt ex materia et forma composita. Et ideo in talibus etiam secundum rem differt natura et suppositum, non quasi omnino aliqua separata, sed quia in supposito includitur ipsa natura speciei, et superadduntur quaedam alia quae sunt praeter rationem speciei. Unde suppositum significatur ut totum, habens naturam sicut partem formalem et perfectivam sui*” (Aquinas, *ST*, III, Q. 2, A. 2, Co.). For other passages in Aquinas’s corpus that make similar points, see, for example: Aquinas, *QDPD*, Q. 9, A. 1, Co.; Aquinas, *QDPD*, Q. 7, A. 4, Co.; Aquinas, *QDUVI*, A. 1, Co.; Aquinas, *QDUVI*, A. 3, Co.; Aquinas, *QDUVI*, A. 3, Ad. 14; Aquinas, *QQ*, II, Q. 2, A. 2, Co.; Aquinas, *QQ*, II, Q. 2, A. 2, Ad. S.C.; Aquinas, *CT*, B. 1, Ch. 10; Aquinas, *CT*, B. 1, Ch. 154; Aquinas, *In DA*, B. 3, L. 8, 706; Aquinas, *DEE*, Ch. 2; Aquinas, *In Met.*, B. 7, L. 11, 1521-1522; Aquinas, *In Met.*, B. 7, L. 12, 1535-1536; Aquinas, *In Met.*, B. 8, L. 3, 1710; Aquinas, *QDA*, Q. 1, A. 17, Ad. 10; Aquinas, *SCG*, I, Ch. 21, N. 2; Aquinas, *SCG*, IV, Ch. 81, N. 10; Aquinas, *In Sent.*, B. I, D. 23, Q. 1, A. 1.

accidental form attached to it. As I have tried to show here, on Aquinas's view, accidental forms are not attached to material substances from the outside. They enter into the composition of their substances. And so, for this reason, I think that we have reason to doubt that the standard model properly captures Aquinas's views on substances and artifacts.

B. No Shared Accidents

The standard model understands artifacts to be composed of one or more material substances and a single accidental form. A multi-substance artifact, for example, is best understood as composed of two or more material substances together with the accidental form by which they are united. We have already seen one good reason to question the assumption that accidental forms should be understood as "attached" to substances "from the outside", but there is an additional concern for the standard model's account of multi-substance artifacts in particular. On the standard model, multi-substance artifacts are produced by bringing together two or more substances under a single accidental form. The idea here seems to be that the accidental form unites these two substances either by "standing between" them or by inhering in both simultaneously "from above". But there are several passages across Aquinas's texts that suggest that he rejects both possibilities.

First, there are several passages across Aquinas's texts that suggest that he consistently rejects the possibility that any accidental form could belong to, or inhere in, two or more substances at the same time. In several places, and across several works, Aquinas remarks that "the same accident cannot exist in several subjects", and that "one accident cannot belong to two subjects".²⁵ The reason why this issue comes up for Aquinas is that there are certain views which

²⁵ In the Latin: "*idem accidens non potest esse in pluribus subiectis*" or "*unum accidens non potest esse in diversis subiectis*". See, for example, Aquinas, *ST*, I-II, Q. 56, A. 2, S.C.; Aquinas, *ST*, II-II, Q. 4, A. 6, Arg. 3; Aquinas, *QDSC*, A. 9, Arg. 11, Ad. 11; Aquinas, *In Sent.*, B. I, D. 27, Q. 1, A. 1, Ad. 2; Aquinas, *In Sent.*, B. II, D. 27, Q. 1, A. 6, Arg. 1; Aquinas, *In Sent.*, B. II, D. 40, Q. 1, A. 4, Ad 1; Aquinas, *In Sent.*, B. II, D. 42, Q. 1, A. 1, Arg. 5; Aquinas, *In Sent.*, B. IV, D. 4, Q. 1, A. 3, QC. 2, S.C. 1.

Aquinas holds that might be seen as committing him to the claim that an accidental form can indeed belong to, or inhere in, two or more substances at the same time. And, in every case, he makes a point of denying that anything that he has said commits him to such a view. For example, in his discussion of the virtue of faith in the *Summa*, Aquinas explains that while Christians share a common faith in terms of the object of their belief, there is no one single virtue of faith that all Christians possess, for that would mean that a single habit, an accident, could be possessed by multiple subjects simultaneously.²⁶ And in the relevant passage from his *Commentary on the Sentences*, Aquinas explains that while an action and its corresponding passion are really just one motion, that one motion cannot be said to reside in both the agent and the patient, for that would mean that a single accident could be possessed by two subjects simultaneously. Rather, that motion resides solely in the patient.²⁷

The main reason that Aquinas gives for rejecting the possibility that any accidental form could belong to, or inhere in, two or more substances at the same time is that accidental forms are individuated, are made distinct from others of the same kind, by their subjects. According to Aquinas, an accident cannot be made into the particular individual that it is, it cannot be made into one thing at all, by two distinct subjects. As Aquinas explains in the *Summa*, “as accidents have their existence in a subject, so they have unity or plurality from their subject”²⁸. And as he puts it in his *Commentary on the Sentences*, “an accident cannot be one unless its subject is

²⁶ Aquinas, *ST*, II-II, Q. 4, A. 6.

²⁷ Aquinas, *In Sent.*, B. II, D. 40, Q. 1, A. 4, Ad 1. This also lines up with what he says about the nature of motion in his *Commentary on Aristotle's Physics* (See Aquinas, *In Phys.*, B. III, L. 5), but it is only in the *Sentences* commentary that he uses as a premise in his argument the principle that one accident cannot exist in several subjects.

²⁸ “*Accidentia autem, sicut esse habent in subiecto, ita ex subiecto suscipiunt unitatem et multitudinem*” (Aquinas, *ST*, I, Q. 39, A. 3, Co.).

one”²⁹. For that reason, it is impossible that any accidental form could belong to, or inhere in, two or more substances at the same time.³⁰

There are also several passages across Aquinas’s texts that suggest that he consistently rejects the possibility that any single accident could unite two substances by “standing between them”. Consider, for example, the case of accidents falling under the category of relation. On some theories of relations, relations are polyadic properties which stand between two or more objects, simultaneously connecting both of them to one another - like a child holding both of her parents’ hands as they all walk down the road. Aquinas is familiar with such theories. In his discussion of the Trinity in the *Summa*, for example, he considers an objection which states that the paternity of the Father and the filiation of the Son could be understood as a single bi-directional relation, similar to the way that, as Aristotle says, “It is the same way from Athens to Thebes, as from Thebes to Athens”. But Aquinas is clear in his rejection of such a proposal. As he explains in his reply,

²⁹ “*unum accidens non nisi unus subjecti*” (Aquinas, *In Sent.*, B. IV, D. 14, Q. 1, A. 3, QC. 1, Co.). See also: Aquinas, *QDSC*, A. 3, Arg. 19. The only place I know of where Aquinas seems to grant the possibility of an accident existing in two or more subjects is at *ST*, Q. 39, A. 3, Co., where he says: “In creatures, one form is not found in several *supposita* except in the case of a unity of order, as in the form of an ordered multitude. Hence, the names signifying such a form, if they are substantives, are predicated of many in the singular, but not if they are adjectives. For we say that many men are a college, or an army, or a people; but we say that many men are collegians” [*In creaturis autem non invenitur una forma in pluribus suppositis nisi unitate ordinis, ut forma multitudinis ordinatae. Unde nomina significantia talem formam, si sint substantiva, praedicantur de pluribus in singulari, non autem si sint adiectiva. Dicimus enim quod multi homines sunt collegium vel exercitus aut populus, dicimus tamen quod plures homines sunt collegiate*]. But this is a curious passage, for at least a few reasons, most notably because the line that I just cited, that accidents “have unity or plurality from their subject”, comes immediately before it. So not only everywhere else but also in this very same article Aquinas says things that contradict it.

³⁰ Notice that what Aquinas seems to be denying here is not just the possibility of universal properties, properties which are numerically identical across several instances. What he seems to be denying here is the possibility of shared or collective properties, properties which are jointly possessed by several subjects simultaneously. For it is not just that an accident is made the particular accident that it is by its subject. What these passages suggest is that, for Aquinas, an accident is made singular by the singularity of its subject. A plurality of subjects could only ever produce a plurality of accidents. Moreover, it is impossible for a plurality of material substances to somehow be made one subject prior to the advent of the relevant accidental form. And this is so because it is the accident itself that is supposed to be making that plurality singular. I thank an anonymous referee for pushing me to discuss this issue further.

...the road from one end to the other and conversely is the same road. Nevertheless, the relations between the two places are distinct. Hence, one cannot conclude that the relation of the father to the son is the same as that of the son to the father; but one could reach this conclusion with respect to something absolute, if there were such between them.³¹

So how, then, do relations work for Aquinas? As has been well documented by Jeffrey Brower and others³², according to Aquinas, accidents in the category of relation do not stand between, or belong to, two or more substances. Like most of the philosophers of his time, Aquinas holds that all accidents, relations included, are monadic: each resides within a particular substance and, setting aside the miraculous case of the Eucharist, each resides within that same substance for the entirety of its existence.³³ However, relations are a very special kind of monadic property. To say that something possesses a relational accident implies a certain directionality present within the substance in which it resides. By virtue of possessing certain intrinsic features, which are themselves accidents, substances can also come to be related to various other things, and thus come to possess certain relational features or relational accidents.³⁴ And by virtue of possessing such relational accidents, a substance is directed to, or pointed toward, some other substance outside of itself, even though those relations inhere in no other substance beyond their subject.

The second thing that the standard model appears to get wrong, then, is that it takes multi-substance artifacts to be composed of two or more material substances together with some

³¹ “*via est eadem ab uno termino ad alterum, et e converso; sed tamen respectus sunt diversi. Unde ex hoc non potest concludi quod eadem sit relatio patris ad filium, et e converso, sed posset hoc concludi de aliquo absoluto, si esset medium inter ea*” (Aquinas, *ST*, I, Q. 28, A. 4, Ad. 5).

³² See J. E. Brower, “Aristotelian vs. Contemporary Perspectives on Relations”; J. E. Brower, “Medieval Theories of Relations”; Sydney Penner, “Why Do Medieval Philosophers Reject Polyadic Accidents?”.

³³ See, for example, Aquinas, *ST*, III, Q. 77, A. 1, Co.

³⁴ More precisely, only “real relations” entail the existence of distinct relational accidents within the substances which possess them. There are certain relative features that a substance may be said to possess which do not entail the existence of any further accident in that substance. So, for example, being the object of Bobby’s thought at a particular moment does not entail the existence of any relation in Suzie with respect to Bobby, but it does entail the existence of some relation in Bobby by which he is related to Suzie. Similarly, a creature’s dependence on God does not entail the existence of any relational accident in God, but it does entail the existence of some relation in the creature by which it is related to God. (see, for example, Aquinas, *ST*, I, Q. 45, A. 3).

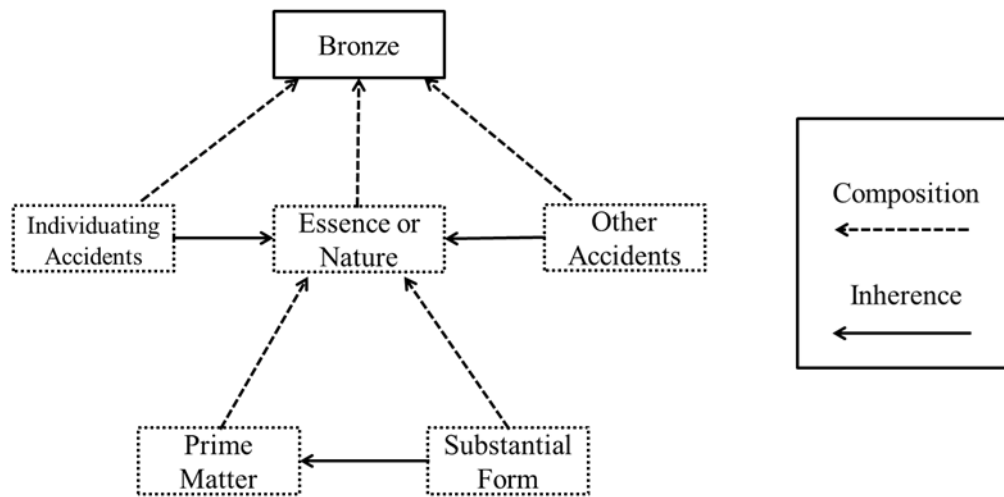
accidental form which stands between them or inheres simultaneously in each of them. As I have tried to show here, on Aquinas's view, there can be no relation or accidental form of any kind that stands between, or belongs to, two or more substances. And so, for this reason as well, I think we have good reason to doubt that the standard model properly captures Aquinas's views on substances and artifacts.

IV. An Alternative Model

I have argued that passages like those cited above lend support to the claim that, for Aquinas, material substances are composed not solely of prime matter and substantial form, but of prime matter (further specified by its substantial form as common matter), substantial form, and all of their accidental forms. So, for example, a lump of bronze should be understood as composed of prime matter (specified in certain ways by its substantial form as common matter), substantial form, its individuating accidents which set it apart from members of the same kind, and all of its other accidents. However, it would be wrong to think of all of these "parts" of the lump of bronze as related to the whole in the very same way. The passages cited above seem to suggest that the prime matter (made common matter by further specifications from its substantial form) and the substantial form of which a substance is composed comprise something like the "essential core" of that substance. Aquinas calls this its essence or nature.³⁵ A substance's individuating accidents, as well as its other accidents, all of which are non-essential, are then added to (or in the case of proper accidents, "flow" from) this essence or nature to comprise the individual material substance in question. So our lump of bronze, then, might look something like this:

³⁵ To flag a potential source of confusion here: Aquinas does occasionally refer to the compound of prime matter and substantial form, considered apart from any accidents, as itself a substance of a certain sort. But, as he explains elsewhere, the sense in which prime matter and substantial form can be called a substance is only as comprising the essence or nature of some individual substance or *suppositum*. Following Aristotle, Aquinas recognizes that there is an extended sense in which the essence or nature of a thing can be called a substance (see, for example, Aquinas, *ST*, I, Q. 29, A. 2, Co. and Aquinas, *ST*, III, Q. 2, A. 6, Ad. 3).

Figure 4



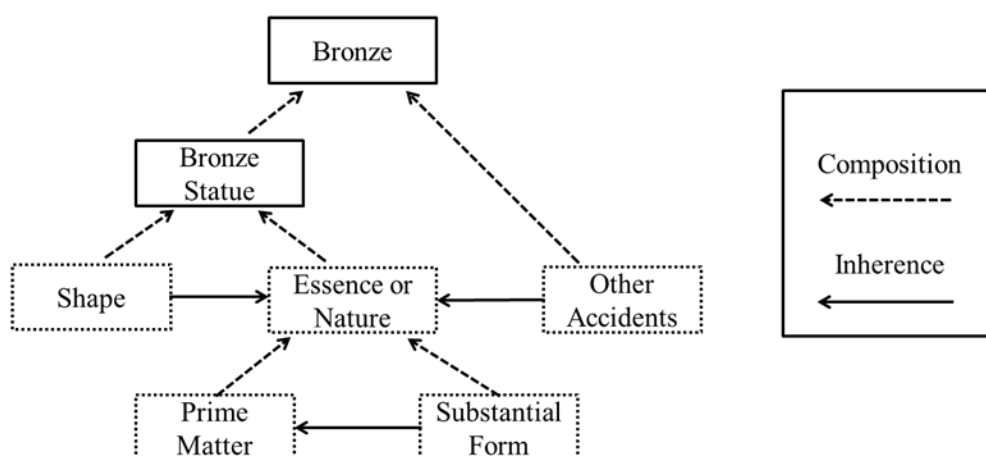
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If that is the right way to think about material substances, how are we to understand the composition of single-substance artifacts? Well, if we hold fixed the claim above that single-substance artifacts are those material objects that involve a single material substance and a single accidental form, then I think that we can still make room for such entities in Aquinas's ontology. But we would have to flip the mereological relations involved. Here is what I mean. On this model, material substances cannot be understood as parts of single-substance artifacts. Rather, single-substance artifacts must be understood as parts of material substances. For example, the lump of bronze cannot be understood as a part of the statue. Rather, the statue must

³⁶ While I think that this diagram comes close to capturing Aquinas's views, there are some limitations. First, the reader will notice that prime matter, rather than common matter, is listed as the key material component of the clay's nature or essence. As I explained earlier, I think 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. And so, on my interpretation, common matter just is prime matter plus certain specifications given to it by its substantial form. The second limitation of the diagram is that it fails to include the *esse* or *actus essendi* of a material substance. I have left this out to simplify the diagram, but I am in full agreement that this belongs among the components of a material substance. The *esse* or *actus essendi* could, then, be represented as an additional component of the individual substance complementing its essence or nature. Third, the diagram does not distinguish between necessary, inseparable, separable accidents. Once again, necessary or proper accidents are those accidents that "flow" from a substance's substantial form or its essence, inseparable accidents are those that are determined by the particular matter of which a substance is composed, and separable accidents are those that have as their source things outside of the substance. To properly distinguish between these three kinds of accidents, the diagram might somehow also indicate the source of each of its accidents.

be understood as a part, or some subset of the parts, of the bronze. The bronze statue might, then, be understood as a hylomorphic compound that includes prime matter, the substantial form of bronze, and a particular shape, but excludes the various other accidental forms possessed by the bronze that are irrelevant to its being that particular statue. So, something like this:

Figure 5



Now, no doubt it is peculiar to think of the bronze statue as a part, or as some subset of the parts, of the bronze, but I think it helps to see things like bronze statues as aspects or components of the substances of which they are parts. So, for example, in some contexts it might be useful to speak of the bronze *qua statue*, bracketing off its other attributes for certain explanatory purposes. And the bronze statue would be the material object to which we are referring when we do this. We may also speak of the bronze statue as coming into and going out of existence as the substance of which it is a part gains and loses the accidental form on which that statue depends for its existence and identity. After its demise, we can say that the bronze statue no longer exists, and what we mean by that is that the bronze can no longer be considered under that aspect or as possessing the relevant components.³⁷

³⁷ And I think that we should say the same thing about accidental unities. Recall that, on the standard model, an accidental unity, such as “white-Socrates”, is a composite material object composed of a single material substance, Socrates, and one or more of its accidents, his pallor. But on the alternative model, Socrates is not a part of

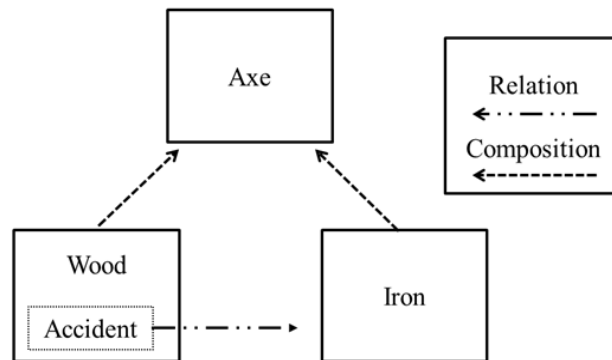
Earlier I also argued that passages like those cited above lend support to the claim that, on Aquinas's view, there can be no relation or accidental form of any kind that stands between, or belongs to, two or more substances. If I am right about that, how are we to understand the composition of multi-substance artifacts? Perhaps we ought to conclude that because no relation or accidental form can belong to two or more substances, there really are no multi-substance artifacts, despite the large number of references to such entities in Aquinas's texts.³⁸ However, I think that such a conclusion would be much too hasty. And I think that the suspicion that underlies it fails to appreciate the ability of relational accidents to link two or more substances, despite inhering in only one of them.

So how might we understand the composition of multi-substance artifacts solely in terms of monadic accidents? Here too, if we hold fixed the claim that multi-substance artifacts are those material objects that involve two or more material substances and a single accidental form, I think that we can still make room for some such entities in Aquinas's ontology. The key here is that, as mentioned above, even though no accident can be shared by two or more substances, relational accidents are such that by virtue of possessing them, a substance is also directed to or pointed toward other substances outside of itself. And so a very simple multi-substance artifact might look something like this:

white-Socrates. Rather, white-Socrates is a part, or a subset of the parts, of Socrates. White-Socrates should be understood as a hylomorphic compound that includes Socrates's prime matter, his substantial form, and his pallor, but excludes the various other accidental forms possessed by Socrates which have been bracketed off for purposes of explanation.

³⁸ See, for example, Brower, *Aquinas's Ontology of the Material World*, 169, 215-216.

Figure 6



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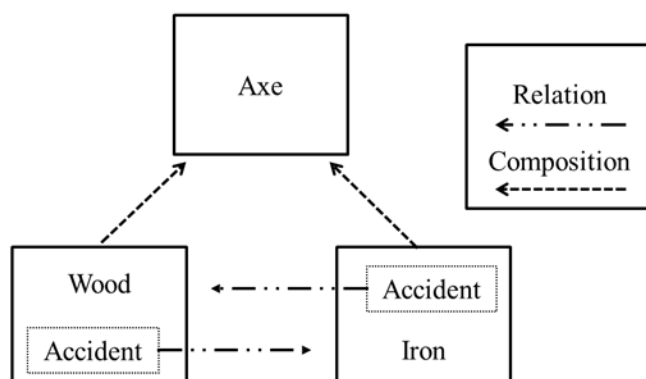
Notice that, on this model, it would be incorrect to say that the axe is composed of the wood, the iron, *and* the relation that the wood bears to the iron. That would be double-counting, since the wood already includes within its composition, as a non-essential part, the accidental form which allows it to be related to the iron in the relevant respect. Instead, what we should say is that the axe is composed of wood and the iron as long as the wood continues to bear that relation to the iron.

With that said, however, I think that what the impossibility of any accident being shared by two or more substances shows us is that there probably is no one accidental form to which a multi-substance artifact owes its existence. Complex multi-substance artifacts probably owe their existence and their identity to complex *sets* of accidental forms, despite the fact that Aquinas

³⁹ The reader will notice that, in this diagram, the wood's relation to the iron is represented as grounded in some particular accident found within the wood, though I have not indicated what type of accident this might be. That is on purpose. I have purposely left the accident in question unspecified so as to leave room for several possibilities for what might be serving as the ground of that relation. That the relation is found within the wood is, of course, arbitrary. It could just as well be a relation found within the iron, or, as we will see in the next diagram, there could be two relations involved, one in each substance.

always refers to the accidental form that comprises an artifact in the singular.⁴⁰ And so the picture will actually be at least slightly more complicated:

Figure 7



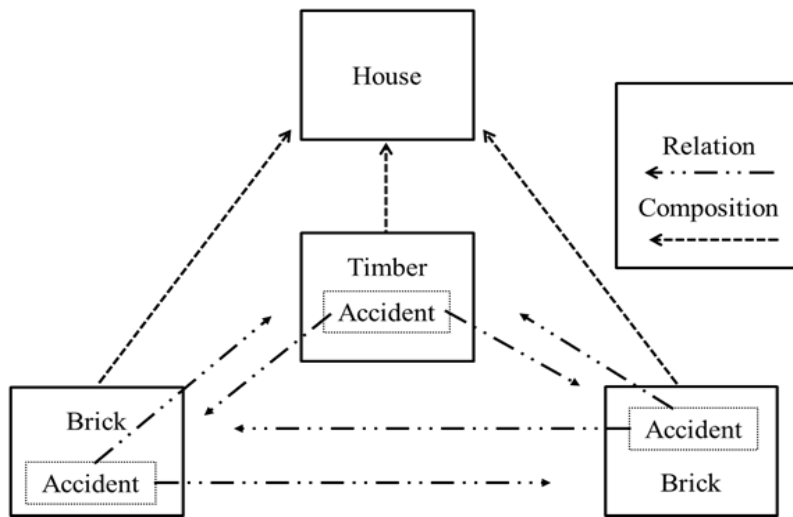
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And perhaps much more complicated for those multi-substance artifacts that involve several substances and their various relations to one another:

⁴⁰ Aquinas does say that the parts of a house are united by “order” (*ordo*) and “composition” (*compositio*) or order and “figure” (*figura*) or “contact” (*contactus*) and “a bond” (*colligatio*) (Aquinas, *SCG*, B. IV, Ch. 35, N. 7; Aquinas, *ST*, I, Q. 76, A. 8, Co.; Aquinas, *ST*, Q. 104, A. 1, Co.; Aquinas, *ST*, III, Q. 2, A. 1, Co.; Aquinas, *In Met.*, B. 5, L. 3, N. 779), which might suggest that he thinks that there are at least two accidental forms that together comprise the form of a house. But in every one of these passages he still refers to the form of a house in the singular.

⁴¹ Once again I have left unspecified what type of accident might be serving as the ground for the relations involved.

Figure 8



In such case, when we speak of “the” form of a house, that to which we refer is not just one accidental form but actually a set of accidental forms, probably a set of relations, which jointly determine the existence and identity of that house.

V. Implications

There are, then, several reasons to doubt that the standard model accurately reflects Aquinas’s own views on the metaphysical structure of substances and artifacts. But why is this significant? Perhaps I have indeed successfully shown that the standard model is far too simple to properly capture Aquinas’s views, and that the real story is much more complicated. But so what? As a way of concluding this essay, I would now like to discuss some of the implications I think might follow from what we have learned about his views on the metaphysical structure of artifacts.

First, if the alternative model is correct, then I think that this is going to have significant repercussions for how we understand the persistence conditions of artifacts in Aquinas’s

ontology. So far what we have learned is that for every artifact, there is some accidental form or set of accidental forms upon which that artifact depends for its existence and its identity, and that every accidental form depends for its existence and its identity on the particular substance in which it inheres. I also mentioned in passing that, for Aquinas, accidental forms are such that they necessarily belong to the substances in which they inhere. In other words, accidents can not only not inhere in two or more substances at the same time, they also cannot migrate from one substance to another at a later time.⁴² All of these observations together support the conclusion that, for Aquinas, the identity conditions for artifacts are extremely fragile – so fragile, in fact, that no artifact can survive the loss of any of the substances of which it is composed. Here is why. If every artifact depends for its existence and its identity on some particular accidental form or some set of accidental forms, and if every accidental form depends for its existence and its identity on some particular substance, then every artifact depends for its existence and its identity on either the single material substance in which its single accidental form inheres, or the several material substances in which its several accidental forms inhere. This is perhaps obvious in the case of single-substance artifacts. The corruption of the bronze necessarily entails the demise of the bronze statue. But it also means that no multi-substance artifact can survive the loss or replacement of any of the substances of which it is composed. For, the accidents on which that artifact depends for its existence and its identity necessarily inhere in those particular substances. If it were possible for accidental forms to stand between or belong to two or more substances at the same time, or if it were possible for accidental forms to migrate from one substance to another at a later time, then perhaps it might in principle be possible for a multi-substance artifact to survive the loss or replacement of one or more of the material substances of which it is

⁴² See, once again, Aquinas, *ST*, III, Q. 77, A. 1, Co. It is striking that even in the case of the Eucharist, a case in which Aquinas grants the possibility of accidents subsisting without the substances in which they formerly inhered, he still insists that it is impossible for those accidents to come to be possessed by any other substance.

composed as long as they are replaced by one or more substances capable of supporting that same form. But since there can be no shared or migratory accidental forms, any accidental form on which a multi-substance artifact depends is the accidental form of a particular substance, and so once it loses that particular substance, it necessarily loses that particular accidental form.^{43, 44}

Second, if the alternative model is correct, then it also follows that, in a multi-substance artifact, it is likely that there is no one form upon which that artifact depends for its existence and its identity, and thus there is no one thing that possesses that form. So even if we can make room for multi-substance artifacts such as axes, houses, and armies in Aquinas's ontology, it may turn out that there is nevertheless nothing that possesses the property of axe-ness or house-ness or army-ness. And this is so for two reasons. First, let us suppose that there were in the relevant multi-substance artifact a singular property of axe-ness or house-ness or army-ness. Now, if every accidental form is possessed by some substance or other, then the form of axe-ness or house-ness or army-ness must be possessed either by one of the substances of which the artifact

⁴³ Christopher Brown reaches a similar conclusion by another route in his *Aquinas and the Ship of Theseus*, 130-138. It should be emphasized that this does not entail that every material change in a multi-substance artifact would necessitate its demise. Substances can undergo various changes in their matter while retaining their identity. And so the wood of the axe can undergo a certain amount of material change at the atomic or subatomic level and still remain the very same piece of wood (likewise with the iron of which the axe is composed). And so the axe, even though it requires the continued possession of these two particular substances, can also survive certain material changes at the atomic or subatomic level. But what the axe cannot survive, and what any multi-substance artifact cannot survive, is the loss of any of the substances that possess any of the accidents on which it relies for its identity, no matter how small those substances may be.

⁴⁴ It should be noted here that there are passages in Aquinas's texts that seem to indicate that he himself holds that multi-substance artifacts can survive gradual changes in their membership while remaining the same in number. So, for example, in his *Commentary on Aristotle's On Generation and Corruption*, he compares the persistence of human flesh through various underlying material changes in its constitution to the way in which a river, or a fire, or a people can be said to remain the same through gradual changes in their membership (see Aquinas, *In DGC*, B. I, L. 15, N. 4). Setting aside flesh, rivers, and fires, what he seems to say about a populace is that a populace can remain the same in number even through gradual changes in membership across successive generations. This also seems to align with what he says about the identity conditions for cities in his *Commentary on Aristotle's Politics* (see, for example, Aquinas, *In Pol.* B. III, Ch. 2, N. 6). But it is hard to see how the form of a city or populace, which would have to be either an accidental form or a set of accidental forms, since cities and populations are artifacts, could remain numerically the same when the substances in which that form inheres are traded out for others, given what he says about the impossibility of migratory forms in his treatment of the Eucharist. So perhaps what he is suggesting here is that there is some important less-than-numerical sense of sameness that cities and populations can enjoy through successive generations, one that is not achieved, say, in the transition from one form of government to another.

is composed or by several of them. But, as we have seen, it cannot be the case that the several substances that make up the axe, the house, or the army possess the property of axe-ness, house-ness, or army-ness, since no accident can belong to, or inhere in, two or more substances at the same time. And while in the case of single substance artifacts, there is a single substance that can serve as the subject of the accident that places the artifact in its kind (statue-ness, for example, can be attributed to the lump of bronze), in the case of multi-substance artifacts there is no single substance that can serve as the subject of the accident in question. And this is because in a multi-substance artifact, none of the substances of which the artifact is composed is sufficient to compose that artifact. A piece of iron is not an axe, regardless of the relations it bears to any other substances. Thus, it seems that, even there were some single form upon which a multi-substance artifact depends for its existence and its identity (perhaps something like the form of axe-ness or house-ness or army-ness), there would, nevertheless, be nothing that possesses that form and nothing which instantiates that property, which is a curious result, to say the least.⁴⁵

Perhaps, then, we should say that there really is no one single form upon which a multi-substance artifact depends for its existence and its identity. How then do we explain Aquinas's frequent references to such forms? As I pointed out above, Aquinas himself regularly refers to the form of a house as if it were a singular item in his ontology.⁴⁶ On the model that I have proposed, however, to speak of "the" form of a house is actually to speak of a particular set of forms, most likely relations, each possessed by, and partially constitutive of, a different substance of which the house is composed. That each of the accidents within this set are present

⁴⁵ And, indeed, if I am right about this, then this would undermine Patrick Toner's recent attempt to salvage the reality of multi-substance artifacts in Aquinas's ontology by arguing that for the axe to exist is just for the property of axe-ness to be instantiated (see his "Meta-Ontology and Accidental Unity" and his "Thomistic Theories of Aggregates").

⁴⁶ See fn 40 above.

in those substances is what makes it true to say that they exhibit the “form of a house” and also that there exists a house. But, importantly, there is no one thing that possesses this complete set of accidents, and thus, while we can speak, as Aquinas often does, of the “form of a house”, there is no one form to which this phrase refers, and there is no one thing that possesses it.

From these two observations, then, I think we can see that having to abandon the standard model and having to revise our understanding of Aquinas’s theory of material artifacts in the ways suggested by the alternative model might force us to do more than simply redraw our diagrams. It might force a radical shift in how we think about the identity and persistence conditions of such entities. Do the two main problems that I have raised for the standard model give us sufficient reason to abandon that model and accept these consequences, then? In this paper, I have pointed to several texts that seem to indicate that Aquinas thinks that, contrary to the standard model, material substances are composed of not just prime matter and substantial form, but of prime matter (specified in certain ways by its substantial form as common matter), substantial form, and all of their accidental forms, and also that there can be no relation or accidental form of any kind that stands between, or belongs to, two or more substances. No doubt there are other texts that might be seen to support the main commitments of the standard model, some of which I have discussed above.⁴⁷ But what I hope to have shown is that there are indeed serious interpretive problems for the standard model with which any proponent of that model will have to contend, problems which I think should push us to consider whether the alternative model might more accurately reflect the views of Aquinas.

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⁴⁷ See, especially, those discussions found in fn. 29 and fn. 44 above.

All passages from Aquinas's texts have been taken from the Latin versions of those texts available at <http://www.corpusthomisticum.org/iopera.html>. All English translations are my own.

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