

Matter, Form, and Individuation

JEFFREY E. BROWER

Few notions are more central to Aquinas's thought than those of matter and form. Although he invokes these notions in a number of different contexts, and puts them to a number of different uses, he always assumes that in their primary or basic sense they are correlative both with each other and with the notion of a "hylomorphic compound"—that is, a compound of matter (*hyle*) and form (*morphe*). Thus, matter is an entity that can have form, form is an entity that can be had by matter, and a hylomorphic compound is an entity that exists when the potentiality of some matter to have form is actualized.¹ What is more, Aquinas assumes that the matter of a hylomorphic compound explains certain of its general characteristics, whereas its form explains certain of its more specific characteristics. Thus, the matter of a bronze statue explains the fact that it is bronze, whereas its form explains the fact that it is a statue. Again, the matter of a human being explains the fact that it is a material object, whereas its form explains the specific type of material object it is (namely, *human*).

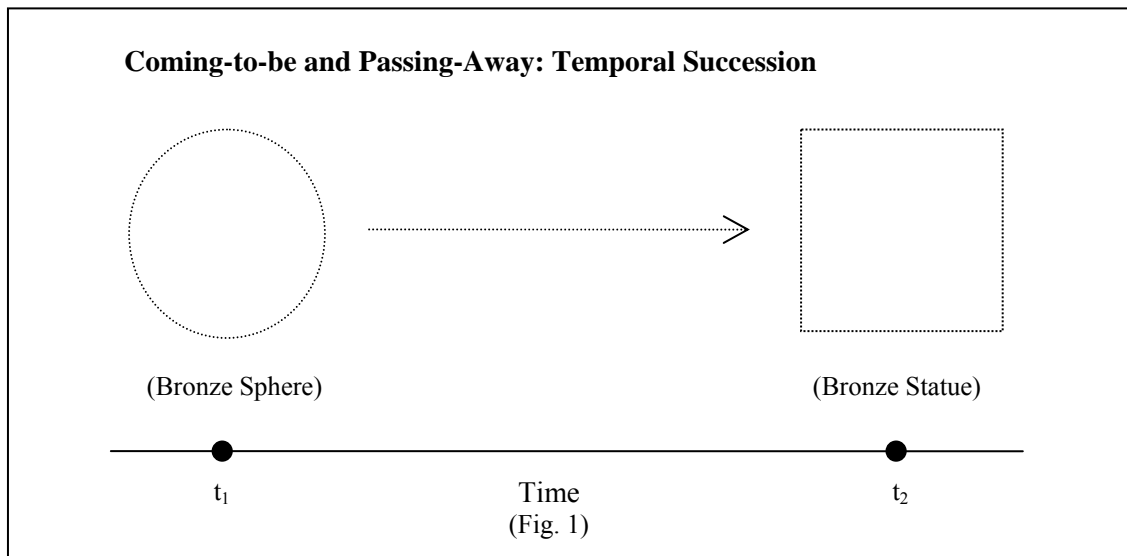
My aim in this chapter is to provide a systematic introduction to Aquinas's primary or basic notions of matter and form. To accomplish this aim, I focus on the two main theoretical contexts in which he deploys them—namely, his theory of change and his theory of individuation. In both contexts, as we shall see, Aquinas appeals to matter and form to account for relations of sameness and difference holding between distinct individuals.

¹ I use the term 'entity' throughout to refer to beings in the broadest possible sense—that is, to anything that exists or has being in any sense. I cannot here address complications associated with Aquinas's doctrine of the analogy of being, but cf. Chapter \$\$\$\$ of this volume.

1. MATTER, FORM, AND CHANGE

Since change is the context in which Aquinas first introduces the notions of matter and form, we can do no better than to begin our discussion with it. And here it will be useful to proceed, as Aquinas himself does, by focusing on particular examples.²

Consider, therefore, one of Aquinas's favorite examples of change—namely, one by which a statue is made from a lump of bronze. To fill out this example, let us suppose our lump starts off being spherical but is later melted down and recast as a statue. In that case, we'll have a situation which, for the sake of future reference, we can represent as follows (using a circle to stand for our sphere, a square to stand for our statue, and a dotted arrow to represent the direction of time):



As this diagram is intended to make clear, our example involves a process that begins with an entity that can be characterized in one way (namely, as a sphere) and ends with an entity that can be characterized in another way (namely, as a statue). In this respect, Aquinas thinks,

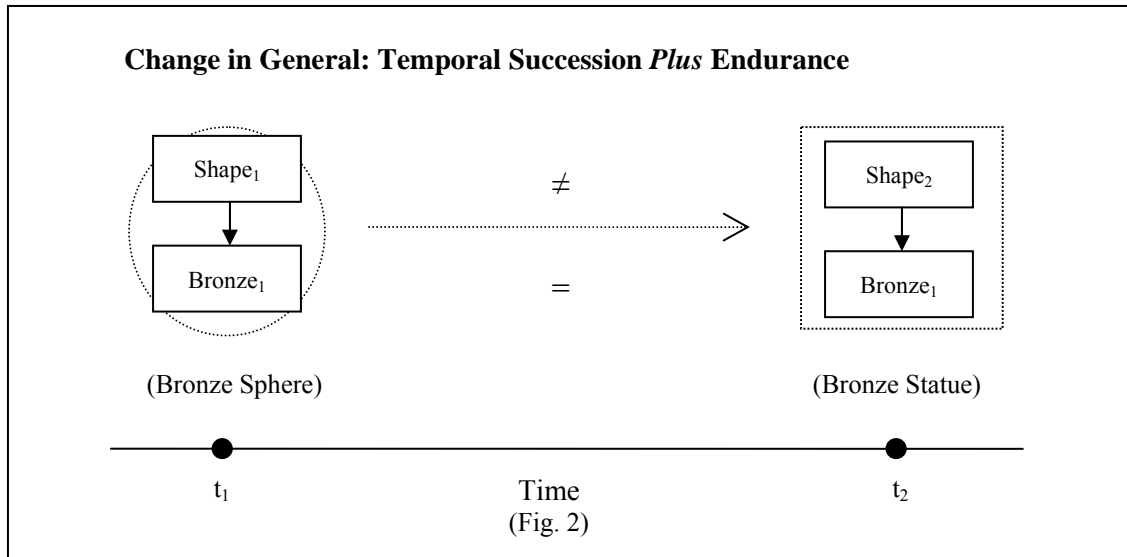
² Unless otherwise indicated, the discussion below is based primarily on Aquinas's discussion in the first two chapters of DPN, though in most cases parallel passages can be found in *In Phys*, his other main discussion of change. All translations are mine.

our example is perfectly representative of all change. We might put the point by saying that, for him, change essentially involves the temporal succession of distinct entities—or, in terminology closer to his own, the “coming-to-be” of one thing and the “passing-away” of another.³

Although coming-to-be and passing-away, is an essential part of change, Aquinas insists that change always involves more than this. After all, God could have caused our statue to come-to-be *out of nothing*; likewise, he could have caused our sphere to pass-away *into nothing*. But in that case, Aquinas thinks, we’d have an example of *creation* and *annihilation* rather than change. And this is because, in keeping with common sense, he thinks of change as requiring the existence of some *thing* that is changed—that is, a subject that literally endures the change or remains numerically the same over time.⁴ Thus, if we want to represent our statue example, as Aquinas himself is thinking of it, we can’t merely appeal to the temporal succession of distinct entities. On the contrary, we must introduce some complexity into such entities, so as to indicate that they not only (a) involve distinct elements (and hence are distinct), but also (b) share a common constituent (and hence overlap). Since Aquinas himself describes the change in terms of the same bronze having different shapes at different times, we can represent his understanding more accurately as follows:

³ Strictly speaking, these remarks apply only to Aquinas’s account of *intrinsic* changes in things. Ultimately, I think Aquinas’s wants to explain all change in terms of these, but in what follows I shall ignore complications arising from *extrinsic* (or mere *Cambridge*) changes.

⁴ Cf., e.g., ST 1a, q.45, a.2 ad 2: “It is part of the nature of change (*de ratione mutationis*) that it involves the same thing (*idem*) being different now from the way it was before ... By contrast, in the case of creation, where the entire substance of things is produced [*ex nihilo*], it cannot be said that we have the same thing being different now from the way it was before—except according to a certain way of thinking.”



As this diagram helps to illustrate, Aquinas thinks of change not merely in terms of distinct entities coming-to-be and passing-away, but rather in terms of their coming-to-be *from* and passing-away *into one another*. In order to distinguish this special type of coming-to-be and passing-away from other types (such as creation and annihilation), Aquinas speaks of it in terms of “generation” and “corruption”—where as we can now see these notions are to be understood in terms of the temporal succession of distinct individuals that overlap with respect to a common constituent which literally endures the change itself.⁵

As it turns out, it is a very short step from this general account of change to Aquinas’s hylomorphism. For in this context, Aquinas just introduces the term ‘matter’ (*materia*) to stand for that which remains the same throughout a given change—that is, for the enduring subject of change. He introduces the term ‘form’ (*forma*) to stand for that with respect to which the matter or enduring subject is changed—that is, for the elements of change that do not endure or remain

⁵ When Aquinas wants to speak of change in the broadest possible sense (*motus, mutatio*), he always does so in terms of generation (*generatio*) and corruption (*corruptio*). Following Aristotle, however, he also uses these latter notions in a narrower sense to apply only to substantial change, and thus to contrast with accidental change (more on the distinction between substantial and accidental change below). But even here, he sees a close connection between the different senses of the terms. As he says in DPN c.1: “In an unqualified sense, generation and corruption are found only in the category of substance. But in the other categories they are found in a qualified sense.” For Aquinas’s discussion of how these different senses of generation and corruption connect with Aristotle’s texts, cf. In Phys, bk.3, lect.2 and In Meta, bk.1, lect.12.

the same. Finally, he introduces the term ‘compound of matter and form’ (*ex materia et forma compositum*) to stand for that which exists in virtue of some matter possessing a form, and hence for the type of entity that can be generated or corrupted. As Aquinas also makes clear, the notions of matter, form, and compound are closely connected to the notions of potentiality and actuality. Indeed, in the context of change he identifies matter with that which is in potentiality to receiving form (*ens in potentia*); he identifies form with that which can actualize the potentiality of matter—namely, actuality (*actus*); and he identifies the compound with that which is actual in some respect (*ens actu*).⁶

As all of this suggests, change for Aquinas just consists in the generation and corruption of hylomorphic compounds (or compounds of potentiality and actuality). For the sake of clarity, we can represent this general account of change as follows:

Change in General

A change *C* occurs if and only if

- (i) there is some matter, *M*, which exists from some time t_1 to some later time t_2 ;
- (ii) there exist some distinct forms, *F-ness* and *G-ness*;
- (iii) *M* has *F-ness* at t_1 (thereby composing a hylomorphic compound which is *F*) and *M* has *G-ness* at t_2 (thereby composing a distinct hylomorphic compound which is *G*).

Although this general account of change doesn’t tell us everything we might like to know about matter and form, it does go some distance toward clarifying Aquinas’s understanding of them. Two things in particular are worth noting. First, this account entails a sort of *realism* about matter and form—and compounds. Entities of all three kinds are required, Aquinas thinks, in order to account for any given change. And yet, for obvious reasons, they cannot be identified with one another: since the matter of any given change can exist without the forms with respect to which it changes, it cannot be identified with form; and since both matter and form are

⁶ Cf. In DA bk.2, c.1, n.5 for an especially clear example of this identification outside of DPN.

required for the existence of compounds, the latter cannot be identified with either matter or form.

It will be important to keep in mind the sort of realism implicit in this account of change as we go. Commentators sometimes suggest that Aquinas should be understood as an anti-realist about the matter involved in at least certain changes (namely, substantial changes).⁷ But if the above account is perfectly general, and hence applies to all change, this can't be correct.

The second thing worth noting about Aquinas's general account of change is that the notions of matter, form, and compound it employs are (at least in the first instance) purely functional in nature. To be matter, on this account, is just to be an entity playing a certain function or role—that of accounting for the sameness involved in change (namely, sameness of subject over time). Likewise, to be form, on this account, is to be an entity playing a distinct function or role—that of accounting for the difference involved in change (namely, difference of characterization over time). Finally, to be a hylomorphic compound, on this account, is just to be an entity that possesses such functional matter and form, and hence one capable of being characterized by the special type of coming-to-be and passing-away associated with change (namely, generation and corruption).

It will also be important to keep in mind the functional nature of Aquinas's hylomorphism as we go. Aquinas often speaks of matter and form *as if* they were entities belonging to specific ontological types or categories—namely, *concrete individuals* and *properties*. Thus, he identifies the matter of our statue example with a lump of bronze, which he regards as a concrete individual (indeed, a concrete individual *substance*); and he identifies the forms of this same example with different shapes, which he regards as contingent properties or

⁷ Cf. Pasnau, Robert (2002), *Thomas Aquinas on Human Nature* (Cambridge: Cambridge University Press), 131-140.

accidents. Even so, there are contexts (as we shall see shortly) in which Aquinas denies that matter and form can be identified with entities of either type. Given his functional understanding of matter and form, this is perfectly intelligible.

Aquinas's functional understanding of matter and form also explains something else that might otherwise seem puzzling—namely, his willingness to speak of “matter” in connection with immaterial objects. Consider an angel who comes to have a new thought or volition. In such a case, Aquinas thinks, we have a change in which an immaterial (or spiritual) substance acquires a new contingent property or accident. Like all changes, this one will involve the generation and corruption of hylomorphic compounds, and hence entities composed of both matter and form. Unlike other changes, however, the “matter” of this change (namely, the angel) will itself be immaterial. Again, this is perfectly intelligible if we keep in mind that the matter here is purely functional. As Aquinas himself says at one point:

If the term ‘matter’ is used in its proper and common sense, it is impossible for there to be matter in spiritual substances ... But if the terms ‘matter’ and ‘form’ are used for any two things which are related as potentiality to actuality then there can be no objection (unless it is a mere verbal dispute) to saying that spiritual substances have both matter and form. (QDSC a.1)

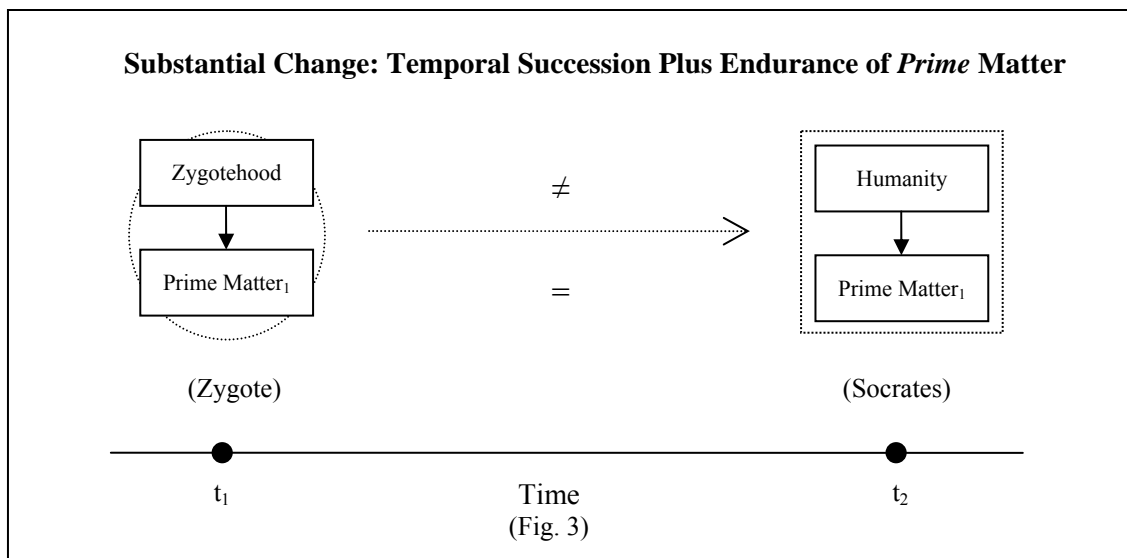
As this passage makes clear, Aquinas does have a substantive or metaphysical notion of matter, but to see what it is, and how it is related to his purely functional notion, we must look at his distinction between different types of change.

2. TYPES OF MATTER, FORM, AND CHANGE

Aquinas thinks that all of the changes we've been focusing on so far belong to a single type—namely, ones involving a substance (which plays the role of matter) changing with respect to one of its contingent properties or accidents (which plays the role of form). For obvious

reasons, he calls changes of this type ‘accidental change’, and he calls the compounds thereby generated or corrupted ‘accidental compounds (or unities)’.⁸

Although Aquinas regards many familiar examples of change as accidental, he denies that all of them are. On the contrary, he thinks there are also familiar examples of substantial change—that is, changes by which substances themselves are generated or corrupted. Aquinas’s favorite example here is the change by which a human being (such as Socrates) is generated from sperm and menstrual blood (or as we now know better, sperm and ova). In order to highlight the connection between Aquinas’s understanding of substantial change and his account of change in general, let us pretend for the moment that he thinks of human beings as being generated not from two things (namely, sperm and menstrual blood or ova), but rather from a single thing (namely, a fertilized egg or zygote).⁹ In that case, we can represent Aquinas’s example of substantial change as follows:



⁸ Cf. the references in note 5.

⁹ Given the controversy surrounding Aquinas’s embryology, it should perhaps be emphasized that this pretense is adopted solely for the sake of simplicity and is not intended to reflect a stance on any substantive metaphysical or interpretive issues. For introduction to the relevant issues and controversy, cf. the exchange between Robert Pasnau and John Haldane/Patrick Lee in *Philosophy* 78 (2003): 255-278, 521-531, 532-540.

As this diagram is intended to show, substantial change, like change in general, involves the generation and corruption of hylomorphic compounds. Because the compounds generated and corrupted here are substances, however, this type of change is possible only for *composite* substances—that is, substances which are themselves composed of matter and form. As Aquinas sees it, only material substances have the relevant sort of composition; hence only they can be generated or corrupted. (Immaterial substances such as angels, by contrast, can only be created or annihilated.) What is more, since the type of matter possessed by material substances is precisely what distinguishes them as material, he refers to it as ‘matter in the primary sense’ or ‘prime matter’ (*materia prima*); again, since the type of form it combines with makes a substance, he refers to it as ‘substantial form’ (*forma substantialis*).

Aquinas’s account of substantial change raises a host of difficulties that we can’t fully resolve here. Even so, we must at least touch on some of them—two in particular—if we are to appreciate how this type of change affects his views about matter and form generally.

First, what *is* prime matter? This is perhaps the most familiar difficulty, and clearly concerns the nature of the entity playing the role of matter in substantial change. What sort of entity could it be? Like other medieval philosophers, Aquinas denies that it can be a full-fledged substance: for no substance can be composed of other substances, whereas all material substances are composed of prime matter. But if prime matter is not a substance, what is it? An individual of some other type—say, *bare particular*? Or something else altogether?¹⁰

I shall return to this difficulty shortly. But first I need to highlight a second difficulty, this one having to do with the precise role that prime matter plays in substantial change. For as will

¹⁰ For the sake of precision, let us call any individual which is not a property a ‘particular’. It’s often taken for granted nowadays that all particulars, whether bare or otherwise, are substances. But during the medieval period, the precise relationship between particularity and substantiality was a disputed question.

emerge, if we want to understand the type of entity that can play the role of prime matter, we must first be clear about the role itself.

To see what's distinctive about the way prime matter functions, recall what we know about the role of matter in change in general. First, the entity playing this role is always something that goes from having one form or property, *F-ness*, to having another form or property, *G-ness*. Second, when this role is played, the result is the generation and corruption of compounds that are *characterized* by the same forms or properties—that is to say, compounds which are themselves either *F* or *G*. (For sake of clarity, let us say that a subject *a* is *characterized* by a form or property *F-ness* just in case *a* is *F*.) Thus, in our statue example what plays the role of matter is a lump that goes from possessing *sphericity* to *statuehood*, which in turn results in the generation of a *statue* and the corruption of a *sphere*. Likewise, in our human example what plays the role of matter is some prime matter that goes from possessing *zygoteness* to *humanity*, which in turn results in the generation of a *human* and corruption of a *zygote*.¹¹

So far so good, but here's a crucial difference between the two cases. In the statue example, as in all accidental changes, it is not only the compounds serving as the termini of change, but also their matter that can be said to be characterized by the forms or properties successively possessed. Strictly speaking, our lump goes not only (a) from *possessing sphericity* to *possessing statuehood*, but also (b) from *being a sphere* to *being a statue*. That is to say, we can truly describe it as a sphere at one time and a statue at another. Note, however, that the same cannot be said to hold of substantial changes, such as that involved in our human example. For a

¹¹ In what follows, I shall use the term 'humanity' to refer to the substantial form of a human being, both because it serves to highlight the parallel between our human and statue examples and because Aquinas says that this is the form that locates human beings within their natural kind (cf. DEE c.4). It should be noted, however, that Aquinas himself often reserves the term 'humanity' (*humanitas*) for the natural kind or essence itself (cf. DEE cc.2-3), which as we'll see below includes not only substantial form but also prime matter.

human to be generated from a zygote, there must be something—namely, some prime matter—that goes from *possessing zygotehood* to *possessing humanity*. Even so, such prime matter cannot itself be said to go from *being a zygote* to *being a human*. That is to say, we can't truly describe it as a zygote at one time and a human at another. And the reason has to do at least partly with the nature of the substantial forms or properties. Unlike *sphericity* or *statuehood*, *humanity* is not the sort of form or property that can characterize its possessor accidentally. On the contrary, it is a form or property that characterizes its possessor essentially: if something is *human* at any time it exists, it must be *human* at all (possible) times it exists. For the same reason, Aquinas thinks, it makes no sense to speak of something *coming-to-be* human—and likewise for *zygotehood* or any of the other forms involved in substantial change.¹²

What all of this shows is that the role played by matter in substantial change is very different from that played by matter in accidental change. Both types of change will involve something that functions generally as an enduring subject, and hence something that goes from having one form or property to having another. This follows straightforwardly from the account of change in general. But whether this same subject can be *characterized* by the forms or properties it successively takes on is a further issue, and will in fact determine the specific type of change (as well as the specific type of matter, form, and compound) involved. Indeed, we can just define the difference between substantial and accidental change in terms of whether the enduring subject of change can be so characterized. More precisely:

¹² In the case of *humanity*, Aquinas puts the point this way: “When a human comes to be, we can truly say not only that it was previously not human, but also that it previously was not (full stop).” (In Phys bk.1, lect.12, n.10)

Substantial Change

A substantial change C_s occurs if and only if

- (i) there is some (prime) matter, M , which exists from some time t_1 to some later time t_2 ;
- (ii) there exist some distinct (substantial) forms, F -ness and G -ness;
- (iii) M has F -ness at t_1 (thereby composing a substance which is F) and M has G -ness at t_2 (thereby composing a distinct substance which is G);
- (iv) M itself does not go from *being F* to *being G* at these times.

Accidental Change

An accidental change C_a occurs if and only if

- (i) there is some matter (or substance), M , which exists from some time t_1 to some later time t_2 ;
- (ii) there exist some distinct (accidental) forms, F -ness and G -ness;
- (iii) M has F -ness at t_1 (thereby composing an accidental compound which is F) and M has G -ness at t_2 (thereby composing a distinct accidental compound which is G);
- (iv*) M itself does go from *being F* to *being G* at these times.

As should be clear from this more precise statement, substantial and accidental change differ only with regard to their fourth condition.

There is something deeply puzzling about the role that Aquinas assigns to matter in substantial change. Admittedly, if we accept his account of change in general, as well as the reality of substantial change, we will have no choice but to allow that something can have forms or properties without being characterized by them. Still, we would like to know how such a thing is possible. Intuitively, forms or properties are essentially characterizing (e.g., F -ness and G -ness are essentially such as to make their possessors F or G). This is what makes plausible Aquinas's claim that forms always characterize their compounds and, at least in the case of accidental change, also characterize their matter. But if forms always characterize their compounds, and sometimes also characterize their matter, why don't they always characterize both?

It is at this point that we must return to our initial difficulty about the nature of prime matter. For as it turns out, it is precisely the special nature of prime matter that prevents it from being characterized by the forms or properties it possesses. If prime matter were an individual of

any sort—even a bare particular—it would be impossible to deny that it is characterized by its forms or properties. Indeed, Aquinas thinks, if prime matter were an individual, we’d have no choice but to regard it as a full-fledged substance and all of its forms as contingent or accidental properties.¹³ For the same reason, he insists that prime matter is *not* an individual. This, I take it, is the point of his saying that, unlike all other existing things, prime matter “lacks actuality of itself” and hence is “pure potentiality”.¹⁴ But if prime matter is not an individual, what is it? It is, I suggest, a *sui generis* type of entity best conceived along the lines of what contemporary philosophers sometimes refer to as ‘stuff’—that is, a type of entity which, though not itself individual, combines with (substantial) forms or properties to make individuals.¹⁵

If this interpretation is right, we have a straightforward explanation of why prime matter can’t be characterized by the forms or properties it possesses: it is of the wrong ontological type or category. Only an individual can be characterized as a *zygote* or *human*. But if prime matter is stuff, it’s non-individual. Hence, even if it possesses *zygoteness* at one time and *humanity* at another, it can’t be a *zygote* at one time and a *human* at another. And likewise for all other substantial forms.¹⁶

Any interpretation of Aquinas’s account of prime matter is bound to be controversial, and mine is no exception.¹⁷ Even so, it’s worth noting that, in addition to resolving our two

¹³ Cf., e.g., DEE c.5.

¹⁴ In addition to DPN cc.1-2, cf. ST 1a, q.7, a.2 ad 3; De ver q.8, a.6; and SCG 1, c.17. Cf. also In Sent 4, d.12, q.1, a.1, sol. 3, ad 3, where Aquinas insists that part of what it is to be an individual is to be a being in actuality.

¹⁵ Cf., e.g., Markosian, Ned (2004), “Simples, Stuff, and Simple People,” *Monist* 87: 405-428.

¹⁶ This is not to say that prime matter or stuff can’t be characterized at all. Obviously it can be—it is, after all, *prime matter* or *stuff*, *non-individual*, *existent*, *identical-to-itself*, etc. The point is just that not all characterization is to be explained in terms of forms or properties. On the contrary, Aquinas thinks that in many cases the fact that an entity can be characterized in a certain way is to be explained by the entity itself (rather than by some distinct property the entity possesses). Cf. e.g. the discussion of divine simplicity in ST 1a, q.3.

¹⁷ For a taxonomy of different possible interpretations of Aquinas’s account, as well as references to the literature, see Kronen, John D., Sandra Mennsen, and Thomas D. Sullivan (2000), “The Problem of the Continuant: Aquinas and Suarez on Prime Matter and Substantial Generation,” *The Review of Metaphysics* 53: 863-885. (If I understand these authors correctly, my interpretation is version of the position they label ‘Gamma’.) Cf. also the reference to Pasnau in note 5 for an example of an anti-realist interpretation of Aquinas’s prime matter.

difficulties, the prime-matter-as-stuff interpretation has a number of other things going for it, some of which are more or less implicit in what we've already said. I'll briefly highlight four.

First, the prime-matter-as-stuff interpretation fits well with what Aquinas says about the special ontological status of prime matter. Here I'm thinking not only of the descriptions of prime matter already mentioned (e.g., "pure potentiality"), but also of Aquinas's agreement with Aristotle that prime matter is itself "neither a what—that is, a substance—nor a quality, nor any of the other categories by which being is divided or determined".¹⁸

Second, this interpretation makes good sense of why Aquinas famously maintains, against most of his contemporaries, that prime matter can't exist by itself, even by the absolute power of God.¹⁹ For non-individual stuff, at least as it is ordinarily conceived, can only occur as part of a larger object. Presumably, therefore, not even God could create it all by itself.

Third, this interpretation helps to explain Aquinas's unwavering commitment to the so-called "unicity of substantial forms" doctrine—that is, the view that no substance can have more than one substantial form. For once some prime matter or stuff combines with a form or property, it is natural to think of the result as an individual substance each of whose further forms are accidental.²⁰

Finally, the prime-matter-as-stuff interpretation fits well with a further role that Aquinas assigns to prime matter. According to Aquinas, what is distinctive about objects possessing prime matter is their capacity to "fill a place" (*locum replere*) or "possess extension in three

¹⁸ Cf. In Meta bk.7, lect.2.

¹⁹ Cf. esp. Quod 3, q.1, a.1. For further passages and discussion of the historical context, cf. Wippel, John (2000), *The Metaphysical Thought of Thomas Aquinas: From Finite Being to Uncreated Being* (Washington D.C.: Catholic University Press), esp. 312-327.

²⁰ Indeed, as the prime-matter-as-stuff interpretation helps us to see, Aquinas's distinction between substance and accidental compound is really distinction between two different types of particular. Substances are primary or basic particulars (insofar as they do not include within themselves any other particulars playing the role of matter), whereas accidental compounds are secondary or derived particulars (insofar as they do include within themselves particulars playing the role of matter).

dimensions” (*trinam dimensionem habere*).²¹ We’ll have to return to this role in connection with Aquinas’s theory of individuation. But for now let us simply note that the assignment of this role makes good sense on the assumption that prime matter is stuff. For stuff, it is natural to suppose, is just that which accounts for an object’s extension or capacity to fill a certain region.

One final clarification before we leave Aquinas’s account of change. So far I have been speaking as if all changes, whether substantial or accidental, involve the generation of a *single* thing (say, a statue or a human being) from the corruption of another *single* thing (say, a lump of bronze or a zygote). This is, in fact, an oversimplification. In addition to such *one-one* changes, Aquinas also allows for the possibility of more complicated changes. As already noted, he in fact regards the generation of a human being as a type of *many-one* change—since it involves the corruption of both sperm and menstrual blood—and he explicitly allows for various types of *one-many* changes as well.²² There isn’t space to explore these more complicated changes further, but it is important to note that they will still involve the endurance of matter (whether prime matter or substance), as well as the replacement of distinct forms over time (whether substantial or accidental). What makes them more complicated is simply that their enduring matter is combined with (or divided from) other matter, with the result that the number of distinct forms involved varies over time.

3. MATTER, FORM, AND INDIVIDUATION

By now it should be clear that, in the context of change, Aquinas invokes matter and form as principles to explain certain types of sameness and difference. Thus, he invokes matter (such as a lump of bronze or some prime matter) to explain the type of sameness involved in change—

²¹ Cf. ST 1a, q.3, a.1, ob. 1; q.52, aa.1-2; and In BDT q.4, a.3.

²² Cf., e.g., In Meta bk.7, lect.16, where he mentions simple living things (such as certain worms) that can be cut in half to form two new living things.

namely, *sameness of subject over time*. And he invokes forms (such as *sphericity* and *statuehood*, or *zygoteness* and *humanity*) to explain the type of difference involved in change—namely, *difference of characterization over time*.

These are not, however, the only types of sameness and difference to which Aquinas’s account of change calls our attention. This is especially clear if we consider some of the more complicated changes. Suppose, therefore, our statue had been generated not from a single sphere, but from several smaller spheres. Or again, suppose the corruption of our zygote resulted in the generation not of a single human being, but of twins—say, Romulus and Remus. In either case, note that on the “many” side of the change we have multiple objects belonging to the same kind, and hence relations of sameness and difference holding between distinct individuals. These relations, however, obtain *at a time* rather than *over time*, and hence could obtain even in the absence of change. Moreover, instead of involving *sameness of subject* and *difference of characterization*, these relations involve *difference of subject* and *sameness of characterization*.

Given the connection between matter and subject on the one hand, and form and characterization on the other, it should come as no surprise that here, as in the context of change proper, Aquinas appeals to matter and form to explain the relevant relations of sameness and difference—though, of course, this time it is form that explain the sameness and matter that explains the difference.²³ For the sake of clarity, we can contrast the different roles Aquinas assigns to matter and form in different contexts using the following chart:

Context	Principle of Sameness	Principle of Difference
Over Time (In Change)	Matter (Sameness of Subject)	Form (Difference of Characterization)
At a Time (Outside of Change)	Form (Sameness of Characterization)	Matter (Difference of Subject)

²³ The problem of “explaining sameness of characterization” is, of course, just the traditional problem of universals. Aquinas’s appeal to form, therefore, is part of his solution to this problem. More on this below.

In the remainder of this chapter, I want to take a closer look at the roles that Aquinas assigns to matter and form outside the context of change, since these are essentially connected with his theory of individuation.²⁴ Once again my strategy will be to proceed by way of example.

Let us return, therefore, to Romulus and Remus and consider them at some time at which they both exist.²⁵ Like all material objects, Aquinas thinks of these twins as ultimately composed of prime matter and substantial form. Insofar as they belong to the same kind, they are material objects sharing a common nature or form; and insofar as they are distinct members of this kind, they differ with respect to their prime matter.

So far I have been speaking as if relations of sameness and difference could always be understood in terms of strict identity. This is useful heuristically because it makes intuitive Aquinas's suggestion that matter must be a principle of individuation in some sense. If Romulus and Remus literally share one and the same substantial form, then they must differ with respect to their prime matter, since Aquinas thinks this is the only other type of entity of which they're ultimately composed. Despite the heuristic value of this way of speaking, we'll eventually see that it too involves an oversimplification.

Although Aquinas thinks that prime matter plays an essential role in individuation, he is often at pains to emphasize that it not prime matter *as such* that plays this role. Nor is it hard to see why. Since Romulus and Remus are alike not only in their possession of a common substantial form (namely, *humanity*), but also in their possession of prime matter, it can't be

²⁴ Indeed, it is because of matter's role here that he speaks of it as "the principle of individuation" (*principium individuationis*) and it is because of form's role here that he speaks of it as belonging to a thing's "essence" (*essentia*) or "common nature" (*natura communis*). Cf., e.g., ST 1a, q.3, a. 2; q.75, a.4; q.76, a.2.

²⁵ For reasons that will emerge, Aquinas thinks of prime matter (or stuff) as the *primary* principle of individuation. In what follows, therefore, I will focus on the example involving the twin human beings rather than that involving the multiple spheres.

prime matter as such that individuates them.²⁶ On the contrary, it must be that each possesses his own distinct prime matter—and likewise for any distinct material objects belonging to the same natural kind. Aquinas himself often puts the point by saying that the principle of individuation must be understood as *designated* (rather than *undesignated*) matter. And for reasons I will now try to explain, he identifies designated matter with *matter under determinate dimensions*.²⁷

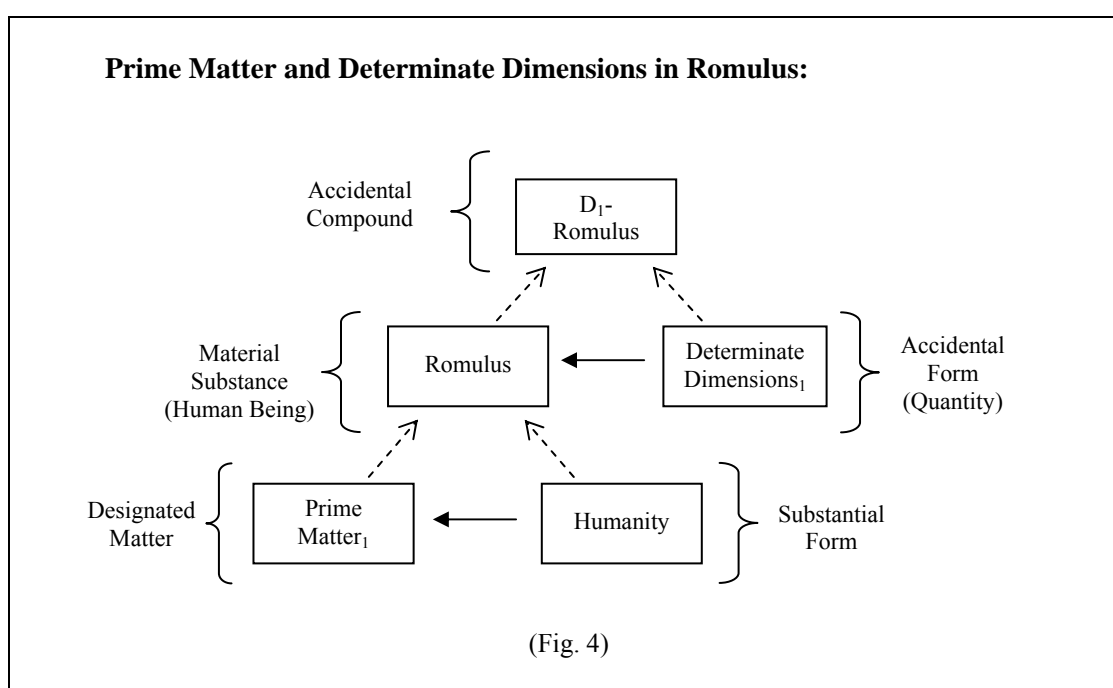
Recall that prime matter is that which explains a material object's capacity to "fill its place" or "have extension in three dimensions"—a type of non-individual stuff, on my interpretation, which cannot exist apart from some larger compound or other. Even so, Aquinas thinks, if we want to explain the precise dimensions of a material object such as Romulus, or the exact size of the place he fills, we cannot appeal to his prime matter alone. On the contrary, we must also appeal to certain of his accidents or quantities. To put the point another way: although Romulus will fill some region or other solely in virtue of having prime matter, and his distinct prime matter may well put some restrictions on the size of this region, his precise extension can't be determined apart from certain of his accidental or quantitative properties—what Aquinas calls his 'determinate dimensions' (*dimensiones determinatae vel terminatae*) or 'dimensional quantities' (*quantitates dimensionivae*). And, obviously, since Romulus himself can't exist without some dimensions or other, the same will be true of his prime matter.²⁸

²⁶ As this consideration makes clear, the nature or essence of human beings includes not only substantial form but also prime matter. It is because Aquinas is willing to extend the term 'form' to the whole essence of a thing that he famously distinguishes 'the form of the whole' (*forma totius*), which is the essence, from the 'the form of the part' (*forma partium*), which is the substantial form. Cf. DEE c.2 and In Meta bk. 7, lect. 9.

²⁷ Aquinas's views about individuation seem to have changed over time. In his earliest writings, he identifies the principle of individuation with matter under determinate dimensions (cf. In Sent 1, d.23, q.1, a.1 and DEE c.2). Later, he suggests that it should be identified with matter under indeterminate (rather than determinate) dimensions (cf. In Sent 4, d.12, q.1, aa.1-2 and In BDT q.4, a.2). By the end of his career, however, he appears to have returned once again to the determinate-dimensions view (cf. esp. QDA, q.9 and In DA 2, c.12). There is considerable controversy over whether these different ways of talking correspond to different stages of development. Since I cannot enter into such controversies here, in what follows I shall simply focus on what I take to be Aquinas's most plausible views. For a helpful introduction to the relevant texts and controversies, cf. Wippel 2000 (351-375).

²⁸ It is important to emphasize that the type of dependence involved here is a sort of generic existential dependence. For despite the fact that both Romulus and his prime matter depend for their existence on some determinate

Now if we add to all this that the determinate dimensions of a substance are the only means by which its prime matter can be picked out or designated, we can see why Aquinas would say that the matter associated with a particular substance—that is, its designated matter—is to be understood in terms of matter under determinate dimensions. For the sake of clarity, let us illustrate this as follows for the particular case of Romulus (this time setting matter and form side-by-side, and using a solid line to indicate their relation to one other and a dotted line to indicate their relation to the larger compounds of which they're a part):



As this diagram is intended to show, in the particular case of Romulus we have some distinct prime matter (namely, prime matter₁) combining with a substantial form (namely, humanity) to make Romulus, and then Romulus himself combining with another form (namely, the determinate dimensions by which his prime matter can be designated, which we can

dimensions or other, there are no particular dimensions on which each either depends for its existence. We might put the point by saying that, although each depends for its existence on determinate dimensions, neither depends for its “identity” on them (since for any such dimensions, they can exist without them).

abbreviate ‘D₁’) to make what I have called (for lack of a better term) ‘D₁-Romulus’—that is, an accidental compound consisting of Romulus having a particular extension.

In light of the foregoing, we can see why Aquinas describes prime matter as the primary principle of individuation, even though he reserves a role for a certain type of accident to play here as well. For prime matter, he thinks, is what ultimately explains there being *distinct* material objects belonging to the same kind. Still, prime matter can’t exist without some determinate dimensions or other, and hence the latter are required for prime matter to play its role, even they don’t themselves account for the distinction in question.

4. QUANTITY, INDIVIDUALITY, AND THE INDIVIDUATION OF FORMS

If individuation, for Aquinas, involved nothing more than explaining the *distinction* of material objects, we could perhaps leave our discussion here. But, in fact, this is not the case. To see why, consider Romulus and Remus again and note that they are not merely distinct entities, but distinct *individuals*. The qualification is important because, as we’ve seen, there are entities (e.g., Romulus’s and Remus’s respective prime matter) which are distinct but non-individual. But, then, how are we to account for the *individuality* (as opposed to distinction) of Romulus and Remus? Obviously, we can’t account for it in terms of their prime matter, since as we’ve just noted, it’s non-individual. But neither can we account for it in terms of their substantial form, since this is something they share in common. But if we can’t account for Romulus’s and Remus’s individuality either in terms of their (non-individual) prime matter or in terms of their (common) substantial form, how can we account for it?

This question highlights a further aspect of Aquinas’s views about individuation in which determinate dimensions have a more direct role to play. What accounts for the distinction of

material objects, Aquinas thinks, is their prime matter, which can only exist under some determinate dimensions or other. But what accounts for the individuality of material objects is the particular determinate dimensions under which their prime matter exists. For unlike prime matter, Aquinas says, such dimensions are not only individual, but individual in and of themselves.²⁹

Now as the discussion of determinate dimensions makes clear, at least some of the forms of material objects are individual. But what about their other forms? As it turns out, Aquinas thinks that all the forms of all material objects, whether substantial or accidental, are individual.³⁰ Unlike determinate dimensions, however, he thinks these other forms must be individuated. That is to say, instead of being individual in and of themselves, they must get their individuality from their relation to something else. And here, as in the case of material objects themselves, we can distinguish two aspects of their individuation. Thus, compare the substantial form of Romulus with that of Remus. These are, Aquinas thinks, distinct individuals of the same type, *humanity*. What accounts for their distinction is the distinct prime matter with which they are associated, whereas what accounts for their individuality is the determinate dimensions with which they are associated. And likewise for each of Romulus's and Remus's other forms, as well as those of material objects generally.

We can now see why I said earlier that, despite the fact that Romulus and Remus “share a common form”, this cannot be understood in terms of strict identity. Romulus's humanity is a distinct individual from Remus's humanity. Even so, we can also see why Aquinas wants to insist that Romulus and Remus nonetheless share something in common. For although

²⁹ In accordance with this aspect of individuation Aquinas says: “dimensive quantity has in itself a kind of individuation” (ST 3a, q.77, a.2). Cf. also In BDT q.4, a.3; Quod 7, q.4, a.3; and SCG 4, c.65.

³⁰ Cf. e.g. DEE c.3. With respect to the problem of universals, therefore, Aquinas is what would nowadays be called a ‘trope theorist’.

Romulus's humanity is distinct from Remus's, it is not intrinsically distinct from it (or for that matter, from anyone else's humanity). Nor is it intrinsically individual or unique to Romulus. To make the point vivid, suppose we had a metaphysical microscope that allowed us to see all and only what is intrinsic to a given entity; and suppose that we used this device to inspect Romulus's and Remus's humanities.³¹ We wouldn't be able to tell the difference between them. In each case it would be clear that we have a form or property of humanity before us. But if we wanted to see whose it was, or its distinction from others, we'd have to "zoom out" in such a way as to include its associated prime matter and determinate dimensions. As this makes clear, when Aquinas speaks of forms as "common" to many, he is calling attention not to their numerical sameness but rather to their *intrinsic* sameness.³²

From what we've seen so far, it might appear that although all the forms of material objects are individual, only certain of them are individuated by other things—namely, all those besides determinate dimensions. For determinate dimensions, as we've seen, have a kind of individuation in themselves, which just appears to mean that their individuality, and hence their distinction both among themselves and from other things, is intrinsic to them. Even so, Aquinas insists, the forms of material objects are always individuated by their subjects: their substantial forms are individuated by their prime matter, and their accidents are individuated by their substances. Nor does he allow any exceptions for determinate dimensions.³³

We can, I think, make sense of Aquinas's views here, as well as fill out his account of individuation generally, by noting that there is a further question we can ask about distinct

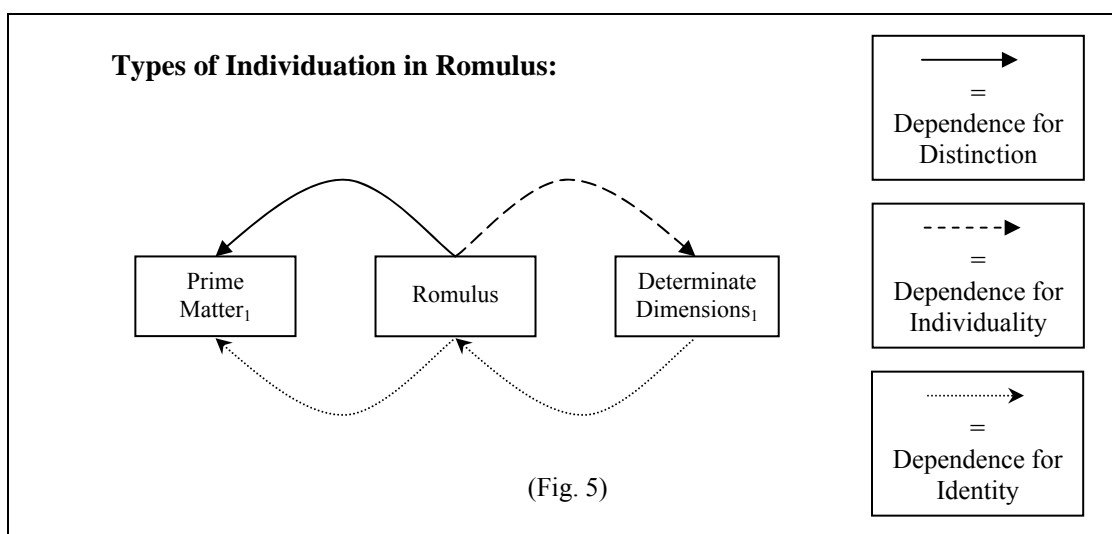
³¹ My talk here of inspecting forms "under a metaphysical microscope" is intended to be the contemporary analogue of Aquinas's talk of the "absolute consideration" of forms. Cf. DEE c.3.

³² For further discussion, along with relevant texts, cf. Brower, Jeffrey E. and Susan Brower-Toland (2008), "Aquinas on Mental Representation: Concepts and Intentionality," *Philosophical Review* 117, 193-243, esp. section 2.1.

³³ Cf. In BDT q.4, a.2; ST 1a, q.29, a.1 and 2a2ae, q.24, a.5 ad 1.

individuals belonging to the same kind—namely, what accounts for their identity?³⁴ For even though determinate dimensions are intrinsically individual, and hence intrinsically distinct from other things, they cannot exist apart from the particular substances in which they inhere. That is to say, despite their intrinsic individuality and distinctness, there is still a sense in which they must be individuated, since their identity is bound up with other things—namely, the substances of which they're the accidents.

We can illustrate this further type of individuation, as well as contrast it with the other types we've already seen, if we return one last time to our example of Romulus and focus on his relationship to his prime matter and determinate dimensions:



As this diagram makes clear, Romulus depends for his distinction (from other material objects) on his prime matter, whereas he depends for his individuality on his determinate dimensions. But Romulus also depends for his identity on his prime matter, which is just to say he can't exist apart from it.³⁵ In the same way, Romulus's determinate dimensions depend on him: since they

³⁴ Cf. note 28 above.

³⁵ Actually, it would be better to speak of the dependence here in terms of origins. Strictly speaking, Aquinas thinks, Romulus depends on his prime matter only for his origin or initial existence (since the prime matter of which Romulus is composed of can and does change over time). Cf. In BDT q.4, a.2.

can't exist apart from Romulus in particular, their identity is bound up with him.³⁶ Indeed, given the dependence of Romulus on his prime matter, there is a sense in which the identity of his determinate dimensions is ultimately bound up with his prime matter as well.

In short, we can see that there are really three different aspects of Aquinas's views about individuation, corresponding to three different questions we can ask about individuals belonging to the same kind:

1. What accounts for their distinction?
2. What accounts for their individuality?
3. What accounts for their identity?

In order to answer the first and third questions, Aquinas thinks, we must appeal to prime matter. But in order to answer the second question, we must appeal to one of the things that prime matter cannot exist without: namely, determinate dimensions. In light of Aquinas's answers to these questions, we can see why in certain contexts he speaks of matter as the primary principle of individuation and dimensive quantity as a secondary principle.³⁷

5. CONCLUSION

This completes our examination of the two main contexts in which Aquinas develops his notions of matter and form—his theory of change and his theory of individuation. In each case, as we've seen, Aquinas invokes matter and form to account for certain relations of sameness and difference holding between distinct individuals. In each case, moreover, he is able to do so because he thinks of matter and form as distinct entities which both serve as constituents of larger wholes (namely, hylomorphic compounds) and explain certain of their general and specific characteristics.

³⁶ Here again it would be better to speak of Romulus's determinate dimensions as dependent on Romulus only for their origin or initial existence (since Aquinas thinks that, on analogy with the Eucharist, God can preserve Romulus's determinate dimensions without Romulus, once they've come into existence). Cf. Quod 7, q.4, a.3.

³⁷ Cf. In Sent 4, d.12, q.1, a.1, sol.3, ad 3.

There is much more that could be said about Aquinas's understanding of matter and form, especially in other contexts such as theology or logic. But we have already seen enough, I think, to appreciate the essential aspects of these notions in their primary or basic sense, and hence to have a basis for understanding the further uses to which Aquinas puts them.³⁸

³⁸ An earlier version of this chapter was presented at the 2008 Cornell Summer Colloquium in Medieval Philosophy. I'm grateful to the audience on that occasion, as well as to Michael Bergmann, Susan Brower-Toland, Michael Rea, Michael Rota, Thomas Sullivan, and the editors of this volume, for helpful discussion, comments, and criticism.