

## Form

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Most philosophers make their acquaintance with Forms through Ancient Philosophy, and in particular through Plato and Aristotle, and most are familiar with the following story. According to Plato, Forms are eternal, immutable, mind-independent, and necessarily are not objects of sensory perception. The Forms are truly Real and therefore are the only objects of genuine knowledge. Sensible objects do not really have the essences we attribute to them: your dog is not really a dog, Helen of Troy is not really beautiful, the circle you draw with compass and steady hand is not really a circle. Instead, these sensible objects are merely *similar to*, or *participate in*, the Forms of The Dog, The Beautiful, and The Circle. Aristotle rejected Plato's Forms as theoretically wasteful and philosophically incoherent, but retained the idea that Forms alone are truly knowable. Aristotle brought the Forms down to earth by making them constituents of sensible objects; your dog really is a dog, according to Aristotle, because it has The Form of Dog as a constituent. Aristotle gives to Forms a definite job description: they give structure and character to matter.

Medieval thinkers inherited and retained both Platonism and Aristotelianism about Form, but the term *forma* came to be used almost exclusively with reference to Aristotelianism. Platonic Forms needed considerably more alteration to fit medieval philosophical theology (especially the Christian variety) and while they did, in a sense, survive, they survived under a different title. Why they needed alteration and in what sense they survived can only be understood with reference to God. In the Middle Ages the three monotheistic religions shared a philosophical conception of God that has come to be called *classical theism*. Crucially, the God of classical theism has nearly all the properties characteristic of Platonic Forms: He is eternal, immutable, immaterial, and so on. He is not supposed to depend on anything for his knowledge or his power, and everything other than Him is supposed to depend on Him for its existence and power. And He is at least one Person—one person according to Islam and Judaism, three according to Christianity—so He has both Intellect and Will, or Knowledge and Love. Classical theism demands that Platonic Forms, if there are any,

must be subordinate to God: they must depend on God for their being or existence, and just as importantly they must depend on God for their being what they are. The Forms have no primeval blueprint in the void, with which God is cognitively in touch and on the basis of which he produces the Forms. Instead, if the Forms are made, God both makes them and makes them up.

The majority view among medieval philosophical theologians is that Platonic Forms do not exist as things outside of God's mind. Instead, they exist, to the extent they exist, as Ideas in God's Mind. In this way they retain much of their Platonic prestige: since the God of classical theism is simple, we can infer both that God is identical with God's Intellect and that God is identical with each and every one of His ideas. Since identity is a transitive relation, God's Ideas can boast of all the divine attributes: they too are immutable, eternal, immaterial, simple, and so on. In this attenuated way Platonism about Forms survived throughout the Middle Ages.<sup>1</sup>

A second and more obvious survival of Platonism about Forms concerns the Form of the Good. In *Republic* VI Socrates speculates that the Form of the Good is not only that form by which all the others can be known, but is also that form by which they exist and are as they are. In other words, the Form of the Good both makes and makes up all the other Forms. With some qualifications, it's easy to identify the Form of the Good with the God of classical theism: divine revelation illumines what Plato could only adumbrate.

In these vestigial ways Platonism about Forms was not at odds with Aristotelianism about Forms in the Middle Ages. The two theories belonged to two distinct "sciences": Platonism to theology, and Aristotelianism to natural philosophy.

Aristotelianism about Forms was, however, arguably the dominant conception of forms in the Middle Ages and indisputably is the theory of forms most utilized in explicit philosophical appeals to form. The conception of forms outlined in the remainder of this essay, therefore, is broadly Aristotelian.

### **Matter and Form, Act and Potency**

Following Aristotle, medieval philosophers understood material objects to be composites of form and matter, where matter is supposed to be that which is or has a potency to constitute a material object of some kind and where form is supposed to be that which actualizes the potency of matter. For example, some clay has a potency to constitute a statue of Aristotle and this potency

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<sup>1</sup> For further discussion, see Klima, Gyula, "The Medieval Problem of Universals", *The Stanford Encyclopedia of Philosophy* (Fall 2013 Edition), Edward N. Zalta (ed.), URL = <http://plato.stanford.edu/archives/fall2013/entries/universals-medieval/>, especially section 5, "Platonic Forms as Divine Ideas."

is actualized if a sculptor imposes the right kind of form on the clay. More strictly, the potency of clay to constitute a statue of Aristotle is actualized if and only if it receives the right kind of form. So a form in general is a potency-actualizer and therefore was often called simply, act (*actus*). And since matter is wholly dependent on form for the actualization of its potencies it was often called simply, potency (*potentia*).

There were two equally important and non-competing conceptions of matter: proximate matter and prime matter. Proximate matter corresponds most closely to a commonsense account of what a thing is made of: the water bottle is made of plastic, the statue is made of clay, the book is made of paper. Prime matter on the other hand is an unobservable theoretical entity which is the last possible answer to questions about what a thing is made of and is itself made of nothing. The motivation for prime matter is the intuition that a material object cannot have an infinite regress of constitution relations so there must be an Unconstituted Constituter: some material object, O, is made of some proximate matter, m, m is made of m\*, m\* is made of m\*\*, and (perhaps) on and on, but O must have some last proximate matter, m<sup>\*(n)</sup>, that is not made of m<sup>\*(n+1)</sup> but is instead made of prime matter. For example, the water bottle is a composite of plastic and some form, but the plastic of the water is itself a composite of form and matter, where its matter is whatever plastic is made of and its form is whatever actualizes the potency of that matter to constitute plastic. Any proximate matter is, therefore, itself a composite of form and matter. Only one kind of thing can play the role of prime matter, and prime matter or matter are the only labels available for it. But many kinds of things can play the role of proximate matter: a natural substance (such as wood) might be the proximate matter of an artifact (e.g., a wooden bed), an artifact (such as plastic) might be the proximate matter of an artifact (e.g., a plastic water bottle), and a natural substance (such as Socrates) might be the proximate matter of an accidental unity (e.g., white-Socrates or tan-Socrates).<sup>2</sup>

### **Substance and Accident, Substantial and Accidental Forms**

Medievals distinguished form into two irreducibly distinct kinds: substantial and accidental, which correlate closely with the distinction between substance and accident. The substances are the things belonging to natural kinds, paradigmatically organisms, the four elements

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<sup>2</sup> For further discussion, see Marilyn McCord Adams, *William Ockham*, 2 vols. (Notre Dame: Notre Dame University Press, 1987), vol. 2, ch.15; Robert Pasnau, *Metaphysical Themes 1274-1671* (Oxford: Clarendon Press, 2011), Part I; Jeffrey E. Brower, *Aquinas's Ontology of the Material World: Change, Hylomorphism, & Material Objects* (Oxford: Oxford University Press, 2014), ch.1; Edward Feser, *Scholastic Metaphysics: A Contemporary Introduction* (Heusenstamm, Germany: Editiones Scholasticae, 2014), chs. 1 & 3.

recognized by the chemistry of the day—earth, water, air, fire—and some mixtures of these elements (e.g., gold or iron). Among the very many properties belonging to any substance, some have a linguistic correlate in a real definition of the essence of that substance and are therefore *essential properties*. Some are caused by essential properties but are not themselves part of the essence of a substance and these are called necessary accidental properties, or *necessary accidents*. But some properties of a substance only contingently characterize a substance and these are the accidental properties, or *accidents*, most often in mind when medieval philosophers write about accidents. For example, Socrates is a rational animal and, say, six feet tall. These properties differ in that being a rational animal is an essential property of Socrates and being six feet tall is an accidental property of Socrates. Socrates might change his height without ceasing to exist, but to cease to be a rational animal is, for Socrates, simply to cease to exist, since rational animality constitutes Socrates's essence, humanity. Here is an example of a necessary accident: Socrates's having the ability to laugh (*risibilitas*) is in some sense caused by his essential property of rational animality and is therefore, while a necessary property of Socrates, not among his essential properties.

Corresponding to this division between substance and accident is the division between substantial and accidental forms. In general but with important exceptions, a substantial form endows a substance with its essential properties and accidental forms endow a substance with its accidental properties. In a somewhat loose way of speaking, a substantial form is sometimes identified with the essence of a substance (Aquinas, *Being and Essence* 1).<sup>3</sup> But this is technically incorrect (as Aquinas himself says).<sup>4</sup> The essence of a material substance includes not just substantial form but matter as well—it is essential to a material substance (of any kind) to be material, we might say. The loose way of speaking is authorized, however, because prime matter is common to all material substances of all kinds, whereas the distinctive essential properties of a member of some natural kind derive from its substantial form, even if they are not identical with its substantial form. Strictly speaking, a substantial form is not a property of a substance but is, in medieval jargon, an *essential part* of a substance (along with matter).<sup>5</sup> A substantial form of

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<sup>3</sup> Aquinas, *De Ente et Essentia* I, ed. Baur, text accessed at URL <http://www.corpusthomicum.org/oe.html>

<sup>4</sup> Aquinas, *De Ente et Essentia* II, ed. Baur, text accessed at URL <http://www.corpusthomicum.org/oe.html>

<sup>5</sup> For discussion of essential parthood, see Calvin Normore, "Ockham's Metaphysics of Parts," *Journal of Philosophy* 103 (2006), pp. 737-754; Thomas M. Ward, *John Duns Scotus on Parts, Wholes, and Hylomorphism* (Leiden and Boston: Brill, 2014), chs. 3 & 4.

humanity together with matter therefore *composes* a human being. But it is alien to medieval Aristotelianism to say that the *property* of being human *composes* (with what?) a human being. Instead, Socrates, say, has the property of being human *because* he is composed of matter and the substantial form of humanity. This point may be better understood by recalling that for medieval Aristotelians, the substantial forms of living things were also called souls. So Socrates's substantial form of humanity is identical with his soul. But of course Socrates's soul is not his property of being human.

To say that accidental forms endow a substance with its accidental properties is also a loose way of speaking. This is because no medieval philosopher thought that there was a distinct form corresponding to each and every of the many accidental properties of a substance. It is true, for example, that if Socrates is six feet tall then he is six feet tall or a banana, but having the property *being six feet tall or a banana* was not supposed to require having an accidental form of *being six feet tall or a banana*. Most medievals (not just Ockham) subscribed to the Aristotelian methodological “razor” principle according to which entities are not to be posited without necessity, so they tried to account for all the accidental properties of a substance with as few accidental forms as possible.<sup>6</sup> The kinds of accidents recognized by medieval Aristotelians were those falling under the Aristotle's nine accidental Categories—quality, quantity, relation, place, time, position, having, action, and passion<sup>7</sup>—but most denied that one needed to posit one sort of thing for each category in order to preserve the truth of all nine kinds of accidental predication. For example, Ockham denied that there were forms of quantity, since he thought that matter was extended by its own nature, rendering extra forms of quantity superfluous;<sup>8</sup> and Aquinas denied that there were forms of relations, since he thought that these were reducible to non-relative forms like qualities and quantities.<sup>9</sup> Additionally, the form whose presence in a substance is supposed to explain that substance's having some accidental properties is sometimes its substantial form. Risibility is an example of just such a property, since there is no accidental form of risibility but there is a substantial form of rational animality the presence of which in a substance is supposed to

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<sup>6</sup> Aristotle, *Posterior Analytics* I, 5 86a33-36, in *The Complete Works of Aristotle: The Revised Oxford Translation* (2 vols.), ed. Jonathan Barnes (Princeton: Princeton University Press, 1984), v.1, p.141. Walter Chatton offers an interesting exception to the method of parsimony. See Rondo Keele, "Walter Chatton", *The Stanford Encyclopedia of Philosophy* (Spring 2014 Edition), Edward N. Zalta (ed.), URL = <http://plato.stanford.edu/archives/spr2014/entries/walter-chatton/>, section 3.

<sup>7</sup> Aristotle, *Categories* 1-8, in *The Complete Works of Aristotle*, v.1, pp.3-17.

<sup>8</sup> Marilyn McCord Adams, *William Ockham*, v.2, ch.16;

<sup>9</sup> Thomas M. Ward, “Relations without Forms: Some Consequences of Aquinas's Metaphysics of Relations,” *Vivarium* 48:3-4 (2010), pp.279-301.

be all that is needed, ontologically speaking, to account for that substance's being risible. So in general we can say that while there may not be an accidental form corresponding to every accidental property, where there is an accidental property (however contrived) there is at least one accidental or substantial form whose presence in a substance accounts for the having of that property.

I claimed above that substantial forms cannot be identified with essential properties and collections of essential properties. Whether accidental forms are identical with accidental properties is less clear. What is clear is that there is not a distinct accidental form for every distinct accidental property of a thing; for example, there is no such form as being six feet tall or a banana. But, for most medieval philosophers, anyway, when a substance is six feet tall there is a quantitative form in virtue of which he is six feet tall, and we may well wonder whether that substance's being six feet tall just is, in every respect, its having that form (that is, we may wonder whether the "in virtue of" relation is in this case just identity). Or, to use another, simpler, example, we may well wonder whether a substance's being green just is, in every respect, its having a form of greenness. As far as I can tell, it is. So long as we keep in mind that no medieval philosopher thought there was a distinct form for every distinct property, it seems safe to identify accidental forms with accidental properties. An accidental property that does not have its own accidental form, e.g., being six feet tall or a banana, is either caused by an accidental form or includes at least one accidental form as a part. This entails, of course, that there is no medieval theory of properties generalizable to all properties, for it entails that some properties are forms and some aren't. Just how to distinguish the properties that are forms from those that aren't is difficult and complicated and won't detain us here.

### **Individualized Forms**

Most medieval Aristotelians on both sides of the realism/nominalism debates thought that substantial and accidental forms were individualized in the individual substances of which they were forms. For example, the form of humanity in Socrates is an individual substantial form, Socrates's soul, rather than the universal, humanity. And the form of greenness in the green leaf is an individual accidental form of greenness rather than the universal, greenness. A prominent exception to this general view is Walter Burley, one of the few full-blown realists from the middle ages.<sup>10</sup> Nominalists ascribed to the doctrine of individual forms for obvious reasons: for them, only

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<sup>10</sup> Walter Burley, *Burley super artem veterem Prophirii et Aristotelis* (Venice: Otinus [de Luna] Papiensis, 1497), 3<sup>th</sup>-7<sup>th</sup> (cited in Paul Vincent Spade (ed.), *Five Texts on the Mediaeval Problem of Universals: Porphyry, Boethius, Abelard, Duns Scotus, Ockham*, trans. Paul Vincent Spade (Indianapolis and Cambridge: Hackett Publishing Company, Inc., 1994), p.115.

individuals exist so individual substances and all their metaphysical and physical parts are, if they actually exist, individuals.<sup>11</sup> Most realists or “moderate” realists followed nominalists in thinking that forms are individualized in the substances of which they are forms while proposing different ways of accounting for the sort of unity that a property has in its many instances.<sup>12</sup>

### **Pluralism versus Unitarianism about Substantial Forms**

Medieval philosophers debated whether one material substance could have more than one substantial form.<sup>13</sup> Those who argued that a substance could have no more than one, Aquinas chief among them, argued from the unity of a substance to the unicity of substantial form. Those who argued that a substance could have more than one argued from the different persistence conditions of a whole substance and one or more of its parts. For example, pluralists such as Duns Scotus and William Ockham maintained that when a human being dies and leaves behind his corpse, the corpse is identical with something that used to be a part of a human being—the body of a human being. Since the corpse itself is, arguably, a substance, and therefore a composite of matter and at least one substantial form, pluralists concluded that a human being was a composite of matter and at least two substantial forms: a soul and a substantial form of the body. The metaphysical issue here is about composition: under what conditions can a plurality of substances (each with their own substantial forms) compose one substance, with its own substantial form?<sup>14</sup> Unitarians argued that under no conditions can a plurality of substances compose one substance while pluralists urged that one substance could have a plurality of substances as parts and gave different and sometimes competing accounts of the conditions under which they could.

Unitarians were committed to a certain version of the view that wholes are prior to their parts. This version has it that the evident complexity of the parts of a material substance can be explained wholly with reference to prime matter and one substantial form, and that one substantial form is in some sense a cause of the existence of all the parts characteristic of a substance having such a substantial form. For example, according to the unitarians a human being is composed of prime matter and exactly one soul, the rational or intellective soul, and this one soul united with matter brings it about that there are all the organs and other parts characteristic of a functioning

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<sup>11</sup> Peter King, “Buridan’s Theory of Individuation,” in *Individuation and Scholasticism: The Later Middle Ages and the Counter-Reformation, 1150-1650*, ed. Jorge Gracia (Albany: SUNY Press, 1994), pp.397-430; Marilyn McCord Adams, *William Ockham*, v.2, ch.16.

<sup>12</sup> For further discussion see Richard Cross, *The Physics of Duns Scotus: The Scientific Context of a Theological Vision* (Oxford: Clarendon Press, 1998), pp.34-40;); Spade, *Five Texts*, pp.vii-xviii.

<sup>13</sup> Richard Cross, *The Physics of Duns Scotus*, ch.4; Marilyn McCord Adams, *William Ockham*, v.2, ch.15.

<sup>14</sup> Thomas M. Ward, *John Duns Scotus on Parts, Wholes, and Hylomorphism*, chs.5 & 6.

human organism. None of these parts existed prior to the composition of soul and matter, and none will exist after their decomposition.

Pluralists, by contrast, are committed to some version of the view that parts are prior to the wholes of which they are parts. Strictly speaking, of course, nothing is a part until it is a part *of* some whole; so parts can never be prior to their wholes. What these pluralists are really committed to, then, is the view that some things that are parts of a substance can exist without being parts of that substance. For example, according to the simplest version of pluralism about substantial form, which holds that, e.g., a human being is a composite of prime matter and exactly two substantial forms (an intellective soul and a substantial form of the body), the composite of prime matter and the form of the body—call this *the body*—can exist, can be the very body it is, even if it is not a part of a human being. And pluralists who adopt this simple version of pluralism think it not only can but does so exist: first, during the early stages of embryological development, prior to the generation of a human being; and second, when body and soul are separated at death and a corpse is left behind.

### **Motivations**

Now I would like to turn to some of the philosophical motivations for thinking there are forms in the sense under discussion. I will discuss three common ways of arguing that material substances are composites of material and formal parts. Of these, the third was by far the way in which medieval Aristotelians argues for a division between form and matter.

#### **1. Material Constitution**

That which constitutes a material substance is whatever it is made of.<sup>15</sup> In a standard modern example, this statue (of Aristotle) is made of clay and therefore the clay constitutes the statue. If you inspect the statue you'll only see, hear, taste, touch, or smell clay; all of its physical parts are clay. A hylomorphist thinks there's more to the statue than the clay, however. More precisely, she thinks that the clay and the statue are in some sense two things. To see why, imagine squashing the clay and rolling it up into a ball; you've thereby destroyed the statue, but you haven't destroyed the clay. You have the very same clay before you, now shaped into a sphere rather than, say, a likeness of Aristotle. So it is true of the clay right now, at time *t*, that it has been shaped into a sphere, but it is not true of the statue that it has been shaped into a sphere, since the statue was destroyed at some point in the squashing process prior to *t*. (Determining at which point precisely

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<sup>15</sup> Jeffrey E. Brower, *Aquinas's Ontology of the Material World*, section 7.3; Michael C. Rea, "The Problem of Material Constitution," *The Philosophical Review* 104 (1995), pp.525-552.



in the squashing process the statue ceased to exist is vexatious and won't detain us here.) At *t*, then, we can say that the clay has the property, *is in the shape of a sphere*; but the statue does not have this property at *t*, because the statue does not exist at *t*. By the Indiscernibility of Identicals we know that if the clay and the statue were altogether the same, if there was nothing more to the statue than its clay, then any property the clay has the statue would have also. But the clay has a property at *t* which the statue lacks at *t*, so the clay and statue are not altogether the same.

Someone might object that it's no good to argue for the distinction between the clay and the statue in the way I've done, precisely because at *t* the statue no longer exists and so of course the clay could be neither the same as nor different from it. But, the objector might propose, as long as the statue did exist it was the same object as the clay.

The reason why this objection fails is that it ignores the different modal properties that the clay and the statue have at every moment each exists. A modal property of an object is any property that gives a power or capacity to an object; such properties often take the forms, *is possibly F*, *can be F*, *is not possibly F*, *cannot be F*, *is necessarily F*, *must be F*. But they need not take these forms. Properties like *is fragile*, *is soluble*, *is available*, *is non-potable*, and so on are also modal properties since they give a power or capacity to whatever has them. Now at every time the statue existed the clay had the modal property, *can be shaped into a sphere*; but the statue lacked this property. So, again by the Indiscernibility of Identicals, we know that the statue and the clay are in some sense two things.

If the relation that the clay and the statue have to each other is not identity, then, what is it? A hylomorphist thinks that the relationship is best explained as a special kind of part-whole relation.<sup>16</sup> In the language of mereology, the clay is a *proper part* of the statue, where *proper* parthood is an antisymmetrical parthood relation (the clay is a part of the statue but the statue is not a part of the clay). If the clay is a proper part of the statue, then intuitively the statue has at least one proper part in addition to (or, in the language of mereology, *disjoint from*) the clay. The hylomorphist calls this additional part a form. The statue is then a composite object having at least two proper parts: its matter (the clay) and its form. The form is not itself clay nor is made of clay; in fact, it is not itself a physical object or made of physical objects. If it were and if it were a part of the statue, then it would be a part of the statue by being a part of what constitutes the statue, in which case we'd be back at square one, trying to give an account of the difference between the statue and what

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<sup>16</sup> Kathryn Koslicki, *The Structure of Objects* (Oxford: Oxford University Press, 2008); Jeffrey E. Brower, *Aquinas's Ontology of the Material World*, section 4.3; Thomas M. Ward

constitutes it. So we must say that it is a nonphysical item whose job, as far as Material Constitution is concerned, is to be a proper part of the statue disjoint from the clay. Generalizing from our example, we can say that for any (real, non-arbitrary) physical object of which we give different answers to the questions, “What is it?” and “What is it made of?” that physical object is a composite of matter and form. Physical objects of which we give exactly the same answers to these questions or of which it wouldn’t make sense to ask the second question are, if there are any, genuine physical simples.

## 2. Unity

Were Material Constitution the only route to forms, there wouldn’t be much for forms to do. According to Material Constitution form’s job is to be a part; what else it does for the object whose form it is is strictly speaking not relevant to Material Constitution. But other motivations for hylomorphism assign additional tasks to form. Unity is one of these motivations.<sup>17</sup>

For many composite objects, the parts that compose such an object can exist and fail to be parts of that object. A tree is a part of a forest; transplant the tree from the forest to your backyard (where there are no other trees) and it still exists as the same tree it always was but it is no longer a part of a forest. All the stones in a dry stone wall might be scattered; they’d still exist but wouldn’t compose a wall. The bread and ham that make up the ham sandwich existed before they made up the sandwich and could go on existing even if we destroyed the sandwich by taking it apart (instead of by eating it).<sup>18</sup> These examples and countless others demand some account of what it takes for some things—in addition to merely existing—to compose, be unified as, one thing.

Hylomorphists say that, for some kinds of composite objects, forms make the difference between things merely existing and their both existing and composing a composite object. A form, on this view, is a unifying entity or principle. Some material objects compose one material object just in case they are together informed by one and the same form.<sup>19</sup>

What sort of form is invoked to account for the unity of a thing depends on the sort of unified thing under discussion. Forests, dry stone walls, and ham sandwiches all fail to be substances, by medieval Aristotelianism’s lights; so each lacks a substantial form. (There is no such thing as a

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<sup>17</sup> Robert Pasnau, *Thomas Aquinas on Human Nature: A Philosophical Study of Summa theologiae Ia 75-79* (Cambridge: Cambridge University Press, 2002), sections 3.2-3; Pasnau, *Metaphysical Themes*, chs. 24 & 25; Thomas M. Ward, *John Duns Scotus on Parts, Wholes, and Hylomorphism*, chs. 5 & 6.

<sup>18</sup> Kit Fine, “Things and Their Parts,” *Midwest Studies in Philosophy* 23 (1999), pp.61-74.

<sup>19</sup> Mark Johnston, “Hylomorphism,” *Journal of Philosophy* 103 (2006), pp.652-698.

substantial form of a forest, a dry stone wall, or a ham sandwich.<sup>20</sup>) So the form accounting for their unities will be some sort of accidental form or forms, perhaps an ordered series of spatial relations. An organism, by contrast, has a kind of unity that demands a substantial form. You don't get a human being just by having all the human parts in your laboratory or in an organ bank; nor do you get one by having them all spatially arranged just as they are when they compose a human. Instead, the parts need to function together in certain ways, ordered to the characteristic activities of human life. Aristotelians say that this more-than-spatial, functional unity is explained by the human substantial form or soul, a non-relative form which organizes material parts into an organism belonging to the natural kind, human being. So the human substantial form is meant to explain the difference between a living, breathing human being, and a bunch of human parts (or a corpse). It is important to qualify, however, that medieval philosophers did not think of forms (whether substantial or accidental) as the only sort of principle of unity. This is most clearly seen in medieval discussions of how matter and form themselves are unified. On pain of infinite regress we cannot appeal to a new form to explain form and matter's unity, so something else has got to do this: one common solution is that there is something about the natures of matter and form as act and potency that make them *made to be together*, as it were—no additional *thing* is required to account for their unity.<sup>21</sup>

### 3. Change

Change is the most characteristically Aristotelian, and thus most characteristically Scholastic, way to argue for the division of material substances into form and matter. It assumes the reality of many sorts of changes and posits the division between form and matter as the best way to account for these changes.<sup>22</sup> Broadly speaking, we can distinguish all relevant changes into two sorts: accidental and substantial. An accidental change is a change occurring in or to a substance which leaves the substance the very same substance it always was. Suppose Socrates goes down to the

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<sup>20</sup> Of course, this is not an *a priori* pronouncement. Aristotelians are equipped with some tools for picking out substances from non-substances. In general, the substances are those composite objects which exhibit some sort of unified activity that cannot be reduced to the activity or activities of one or more of their parts. See Duns Scotus, *Quaestiones super libros metaphysicorum Aristotelis* VII, q.20, n.51, ed. R. Andrews *et al.* (St. Bonaventure NY: The Franciscan Institute, 1997), p.393.

<sup>21</sup> Duns Scotus is an important exception to this general view. See Thomas M. Ward, *John Duns Scotus on Parts, Wholes, and Hylomorphism*, chs. 3 & 4.

<sup>22</sup> Marilyn McCord Adams, *Some Later Medieval Theories of the Eucharist: Thomas Aquinas, Giles of Rome, Duns Scotus, and William Ockham* (Oxford: Oxford University Press, 2012), ch.1, "Aristotelian Preliminaries;" Jeffrey E. Brower, *Aquinas's Ontology of the Material World*, chs. 3 & 4; Thomas M. Ward, *John Duns Scotus on Parts, Wholes, and Hylomorphism*, ch.1.

Piraeus and gets a tan; he has undergone a change, a change in the color of his skin. But the change is superficial; Socrates is the same man he always was, he's just a little darker. A substantial change, by contrast, is a change whereby a new substance comes into existence through the destruction of one or more substances. When a sperm cell fertilizes an ovum, the sperm and ovum are corrupted and a new substance, a zygote, begins to exist. The zygote has parts which are identical with or very similar to parts of the corrupted gametes, but the gametes are gone. Hylomorphism puts forms to work to develop a metaphysical account of both sorts of change.

We will start with accidental change, as it's the easier to motivate. Many composite substances, and paradigmatically organisms, persist through many changes. Socrates as a man is taller than Socrates as a boy, but he is exactly the same *person* or *human being* as he was when he began to exist. Man-Socrates is in fact identical with boy-Socrates. Now a straightforward application of the Indiscernibility of Identicals entails the conclusion that Man-Socrates and boy-Socrates are not identical, since the two have different properties: Man-Socrates is six-feet tall while boy-Socrates is four-feet tall. But we want to go on saying that boy-Socrates and man-Socrates are the same human being, and we don't want to deny the Indiscernibility of Identicals. So what to do? Hylomorphists bid us distinguish the *substance* that Socrates is—this human being—from his *accidents*, the many ways in which this human being is characterized, many of which (such as skin-color and height) change or can change over time. Hylomorphists say that all or many of these accidents are accidental forms which compose *accidental unities* with the substances they characterize. Man-Socrates and boy-Socrates are therefore two really distinct accidental unities because these two differ in their accidental forms (one has a form bestowing the property of being six-feet tall and the other has a form bestowing the property of being four-feet tall, etc.), and this satisfies the demand of the Indiscernibility of Identicals that we ought to count two things when counting Man-Socrates and boy-Socrates. But both accidental unities share exactly one *substance*—this human being, Socrates—which is a part of each accidental unity and is the subject of the accidents characterizing each accidental unity, and this satisfies the demand of commonsense and common decency that we count one thing when counting Man-Socrates and boy-Socrates. And because Socrates is the subject shared by both accidental unities, we can say that Man-Socrates comes from boy-Socrates rather than that the former merely replaces or comes after the latter.

Hylomorphists are not committed to the claim that for every accident or accident-type there is a corresponding form, as discussed previously. Still, the basic strategy for accounting for accidental changes was to divide the substance from non-essential characteristics and explain the loss and

acquisition of these nonessential characteristics as the going-out-of and coming-into-existence-of numerically distinct accidental unities which all share one and the same substance as a part and as the subject of the accidental forms of each accidental unity. Socrates changes because he becomes the subject of new accidents.

A hylomorphic account of *substantial* change is best understood by analogy to a hylomorphic account of accidental change. We want to say that a zygote comes from gametes, just as we want to say that man-Socrates comes from boy-Socrates. To explain the accidental changes from boyhood to manhood, the hylomorphist distinguishes between substance and accident and says that Socrates persists through these changes because Socrates is the subject, first, of accidents characteristic of boyhood and, next, of accidents characteristic of manhood. By analogy, the hylomorphist argues that a substance itself has a composite structure such that one part, its *matter*, can persist through substantial change, while another part, its *substantial form*, is destroyed when the substance itself is corrupted. When a substance is corrupted, its matter becomes united with a new substantial form, thereby producing a new substance. If the union of a substance with its accidents is an *accidental unity*, the unity of matter with its substantial form is a *substantial unity*, or more commonly, a *substance*. For example the two gametes whose union under the right conditions results in the production of a zygote are two substances, each a composite of matter and substantial form. When a sperm fertilizes an ovum each is corrupted and a zygote begins to exist. In a hylomorphic analysis of this change, the matter of the gametes become the matter of the zygote when the substantial forms of the sperm and ovum are destroyed and the substantial form of the zygote is produced. The zygote itself is the composite of the matter which has persisted through the change and the new substantial form. So hylomorphism about substantial change is meant to save the appearance that the new substance, the zygote, comes *from* the old, the gametes, and does not simply come *after* them or *replace* them; it comes from them inasmuch as one of its parts, its matter, formerly was a part of the sperm and a part of the ovum.

Pluralists about substantial form were free to hold that the persisting subject of a substantial change was itself a substance, for example, a body. But unitarians were committed to the claim that any change in which a composite of matter and substantial form persists as subject is *ipso facto* not a substantial change. Instead, the only substantial changes are those in which prime matter alone persists as subject. Later, however, some unitarians would assert that some accidental forms could inhere directly in prime matter and so persist with prime matter through genuine substantial

changes.<sup>23</sup> The overall trajectory of medieval Aristotelian thought about the ontological status of prime matter is to give it an ever heftier metaphysical role, less dependent on forms for its having properties, thus anticipating the collapse of hylomorphism and the rise of a variety of early modern accounts of the metaphysics of material objects that eschew form altogether. For this collapse, both unitarians and pluralists were at fault.

### **Conclusion**

To sum up: for medieval Aristotelians, a form is a non-physical entity the union of which with an appropriate subject actualizes a potentiality of that subject. Forms are divided into substantial and accidental, where a substantial form unites with matter to produce a new substance, and an accidental form unites with a substance to produce a new accidental unity. Medieval debates about whether one substance could have a plurality of substantial forms were debates about whether a substance could be composed of substances. Pluralists were committed to the thesis that at least some of the parts of a substance exist prior to and independent of the substantial form which endows that substance with its essential properties, while unitarians were committed to the thesis that the parts of a substance are posterior to that substance and depend on substantial form for being what they are. Medieval Aristotelians put forms to work in at least three metaphysical jobs: they offer an appealing account of the distinction between a material object and what that object is made of, they are principles of unity for some sorts of unity, and most especially, they help to preserve commonsense intuitions about the reality and distinctness of substantial and accidental change.

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<sup>23</sup> John Buridan, *Quaestiones super libros De generatione et corruptione Aristotelis* II.7, ed. Michiel Streijger, Paul J.J.M. Bakker, and Johannes M.M.H. Thijssen (Leiden and Boston: Brill, 2010), pp.224–228.