24

Substantial Form

24.1. Form and Essence

There is no more notorious doctrine in scholastic metaphysics than the doctrine of substantial form. Descartes dismissively remarked that they are “a philosophical being unknown to me” (II:367). Henry Oldenburg congratulated Robert Boyle on having “driven out that drivel of substantial forms” which “has stopped the progress of true philosophy, and made the best of scholars not more knowing as to the nature of particular bodies than the meanest ploughmen” (Correspondence III:67). Spinoza, for his part, remarked to Oldenburg that he could hardly see why Boyle had bothered with “that childish and frivolous doctrine of substantial forms and qualities” (Works I:208). Very soon, ‘substantial form’ became a byword for all that was obscure and obsolete in scholastic Aristotelianism, and from this scorn the theory has never recovered. But what exactly were substantial forms? What are the consequences of rejecting them? This and the following six chapters will consider these questions.

The notion of a substantial form has its roots in Aristotle’s physical conception of form as one of the four causes (Phys. II.3), along with his metaphysical conclusion that form, above all else, is substance in the primary sense (Metaph. VII). But this conception of form as somehow substantial took on new life among scholastic Aristotelians, and was developed in ways that Aristotle himself never suggested. Here, as we have seen in other domains, scholastic philosophers transformed the notion of what a form is, replacing what was for Aristotle primarily a metaphysical principle of explanation with something much more like an internal efficient cause.

As notorious as the doctrine of substantial forms was, it is not an easy doctrine to explain. Whereas earlier chapters have looked to Scotus to set the agenda for later scholastic discussions (§2.4, §10.5, §12.5, etc.), here he offers little guidance. Indeed, he seems to despair of any informative account of how substantial and accidental forms differ. In practice, according to Scotus, philosophers give various derivative (a posteriori) accounts of what the difference is: they point to the having of contraries, to the taking on of more or less, to being known in its own right, etc. These are all characterizations of accidental forms and not substantial ones. Still, they don’t tell us about the thing in itself. It just is true that pale is an accident, or that humanity is a substantial form. Such
claims are known in their own right (*per se*), and in these cases there is nothing more to be said, because nothing more can be said.¹

This is admittedly discouraging. We should not make too much of these worries, however, because Scotus is in general unusually pessimistic about such foundational questions. He makes similar remarks elsewhere, for instance, about our ability to grasp why heat heats, or why the soul informs the body, or why in general some things have more unity than other things (§25.5). In all of these cases, moreover, Scotus does not mean that there is *nothing* that can be said that is philosophically illuminating, but only that there is no ultimate explanation; in the end, there is just the brute fact of the matter. So even while we bear in mind that at some point our explanations must run out, we still might look to find some sort of account of substantial form that offers some degree of illumination. One of the most common sayings about substantial form—closely associated with Aquinas (e.g., *Summa theol.* 1a 76.4)—is that the substantial form is what makes a thing exist *simpliciter*, whereas an accidental form makes a thing exist in some respect or another (*secundum quid*).² This fits with the broader scholastic conception of how a material substance is structured: as a composite of prime matter plus substantial form, in which accidental forms inhere. This in turn brings the theory of substantial form usefully into concert with the theory of prime matter as determinable stuff in need of actualization. When prime matter is so conceived, there must be *something* to play the role of substantial form, actualizing and so giving existence to that which would otherwise remain potential. In contrast, if prime matter exists on its own, as post-scholastic authors suppose, then it is easy to regard substantial form as otiose. This is one way of seeing the truth in Jean Chrysostome Magnen’s remark, from back in §3.1, that one’s conception of prime matter will dictate the rest of one’s natural philosophy.

Still, this conception of substantial form as the actualizer of prime matter does not do full justice to the scholastic account. First, it holds only for authors who, following Averroes and especially Aquinas, subscribe to the unitarian doctrine that a single substance has just a single substantial form. Authors like Scotus who subscribe to a plurality of substantial forms cannot think that all substantial forms actualize prime matter (§25.1). Second, even for unitarians, this picture of what a substantial form does is much too thin; it raises the obvious question of why one needs substantial form as

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¹ Scotus offers his despairing answer to this question: “Quare iste actus est per se actus, et ille per accidens? Responsio: non est causa quare ista est forma substantialis, et illa est accidents, quia propositiones per se primo modo non habent propter quid. Et sicut haec est per se primo modo ‘albedo est qualitas,’ similiter ‘homo est substantia,’ ita et haec ‘humanitas, qua homo est homo, est forma substantialis’” (*In Meta.* VIII.4 [Opera phil. IV n. 46]). See also Ord. III.2.2 (Vat. IX n. 84) and Ord. IV.11.3 (Wadding VIII n. 44), where the reason why something is a substantial rather than an accidental form can no more be explained than we can explain why heat heats: “Et si quaeras unde potest probari quod haec forma dat esse simpliciter, illa non, si de ratione neutrivus est dare illud esse quod immediate recedit a non esse, respondeo, aut tu quaeras de re in se, aut in comparatione ad cognitionem nostram. Si in se, nulla causa est quare ista dat esse simpliciter et illa secundum quid, nisi quia haec est forma substantialis, et illa accidentalis. Sicut enim nulla est causa quare calcium calificat, quia immediata est et inter causam immediatam, et effectum non est alia causa media, ita in genere causae formalis haec est immediata: color constituit calidum, et anima hominem, et est immediatio formae ad actum formalum.” See also Cross, *Physics of Duns Scotus* pp. 103–7.

² For substantial form as that by which a thing has *esse simpliciter*, see also, e.g., De Soto, *In Phys.* 1.10, p. 68a: “Forma autem substantialis est illa a qua sumitur esse simpliciter cuiuslibet rei.” Scheibler’s *Philosophia compendiosa* offers this neat formula: “Sunt autem formae substantialis officia tria: 1 Ut det esse. 2 Ut distinguat rem a re. 3 Ut sit principium operationum compositi” (1.1.5.12).
something distinct from matter, when one might instead treat matter as actualized, existent stuff (§3.2).

A richer account of the scholastic doctrine can be built upon the universally accepted connection between substantial form and essence. One classic text is Aristotle, Physics II.3, 194b27, which characterizes the formal cause as “the account of the essence.” Averroes, too, remarks that the substantial form is what gives a thing “its name and definition” (In Phys. I.63), where a definition is what expresses the essence of a thing. And according to Francisco Suárez, the end of the substantial form is “to constitute and complete the essence of a natural being” (Disp. meta. 15.1.18). These remarks immediately raise the question, however, of just what it means to say, as Suárez does, that the substantial form “constitutes” a thing’s essence. The most straightforward way to think about this—and the most common characterization among recent scholars—is to suppose that the substantial form of a thing just is its essence or the set of its essential properties. This is not to identify the substantial form with all of a thing’s necessary properties, because for an Aristotelian not all necessary properties are essential. The essential properties are those that define a thing as what it is. (To take the most familiar of examples, rationality is an essential property, whereas risibility is a merely necessary property, a so-called proprium.) Even when so qualified, however, such a straightforward identification of substantial form and essential properties is wrong in two respects.

First, there was widespread agreement among the scholastics that the essence of a thing includes both its substantial form and its “common” matter, which is the sort of matter characteristic of a member of that species (“flesh and bones” is the standard example). Aristotle, as quoted above, might be thought to reflect this point, inasmuch as he describes the form not as the essence, but as the account (logos, ratio) of the essence. Glossing Aristotle’s remark, the Coimbrans make it clear that the relationship between substantial form and essence is not that of identity; instead, the substantial form is “that in which the natural essence of any composite is principally contained, or what completes the essence of a thing and its definition, and distinguishes it from others” (In Phys. I.9.10.1).

Second, the idea that a substantial form is the set of a thing’s essential properties ignores the crucial and ongoing causal role that that form plays, serving as the principal internal cause of a thing’s various properties and operations. To describe the substantial form as an essence suggests that the scholastics simply pick out one or more properties of the thing as somehow distinctive or definitive, and call that set of properties a form.

3 For substantial form as merely a set of properties see e.g., Stump and Kretzmann, “Being and Goodness” p. 285: “On Aquinas’s view, every thing has a substantial form. The substantial form of any thing is the set of characteristics that place that thing in its species and that are thus essential to it in Aquinas’s sense of ‘essential.’” See also Cross, Physics of Duns Scotus p. 12: “A substantial form, roughly speaking, is that property or set of properties in virtue of which a material substance is a substance of such-and-such a kind,” and Bennett, Learning from Six Philosophers I:11: “The crucial explanatory fact about an organism [for Aristotle] is its ‘form’. This is not a subset of the properties that the organism has, but rather a set of those that are proper to it, and towards which it strives or tends.”

4 On essence as substantial form plus common matter, see e.g. Aquinas, Summa theol. 1a 29.2 ad 3, 1a 75.4c; Scotus, In Meta. VII.16; Buridan, In Meta. VII.12; Coimbrans, In Phys. I.9 5; Scheibler, Metaphys. I.6.3.3.2 (pp. 74–5). Averroes was an exception to the standard medieval view: he thought the essence could be identified with the form alone (see In Meta. VII.34). Following Averroes’s lead is Jandun, In Meta. VII.12: “dicendum est ad quaestionem quod sola forma est tota quiditas substantiae compositeae sensibilis, ita quod materia non est aliqua pars quidditatis. Et hoc probatur auctoritate Commentatoris . . .” (f. 93C). For a searching investigation into these issues, see Amerini, “Semantics of Substantial Names.”
If that were all a substantial form were, the theory would hardly have met with such virulent criticism in the seventeenth century. A just appreciation of the doctrine of substantial form, then, has to take account of two aspects of the theory: first, its *metaphysical role* in individuating a substance as a thing of a certain kind; second, its *physical role* in explaining why substances of certain kinds have properties of such and such kinds. Once these two aspects are distinguished, we will be in a position to see the many complex ways in which post-scholastic authors reject or else reformulate the theory.5

### 24.2. Form and Individuation

Substantial form is the complement, the actualizer, > of prime matter. It is that which makes a composite substance exist, and makes it exist as a thing of a certain kind. This is the beginnings of a theory, but not enough, and especially not enough in the face of post-scholastic criticisms. According to the corpuscularian alternative, prime matter needs no actualization, but rather exists on its own, as enduring particles, and comes to be a certain kind of thing when structured in a certain way. If this story is coherent, then why postulate these obscure substantial forms and an even more obscure indeterminate prime matter? The real heart of the scholastic theory lies in its answer to this question. It would take some time, however, for this question even to come into prominence. Early scholastic authors have little to say here, because the theory of substantial form had yet to be challenged. Only with the rise of a more skeptical, critical scholasticism in the mid-fourteenth century would these issues come into play, and it would not be until the sixteenth century that the theory of substantial forms was given a really sustained defense.

John Buridan provides an early example of how scholastic authors would defend the theory. In the midst of an argument for real accidents (a passage considered already in §19.5), Buridan notes that the logic of the case against accidental forms could be extended to substantial forms, leading to the view that “matter disposed in one way is fire, disposed in another way it is water, air, or stone” (*In De an.* III.11). The result, Buridan thinks, would be to deny generation and corruption:

This was the view of Democritus, Melissus, and those who claimed that everything is one in substance. For they were not so foolish as to believe that this human being is the same in number as that one, but [they did make this claim] for things that appear to be generated from one another: for instance, if from earth A comes water B, and from water B comes grass C, and from grass C comes horse D, and so on for all species of generable and corruptible things, then horse D is the same as what was grass, water, and earth, since the same matter that they claimed

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5 In general, students of post-scholastic thought are better informed than medievalists on the topic of substantial form. The best and most extensive recent discussion is Des Chene’s *Physiologia*, which remarks that “essence, if it is identified with substantial form, is not a mere list of properties the loss of any one of which must result in the destruction of the individual” (p. 71). See also Hattab, *Descartes on Forms* pt. I; McCann, “Locke on Identity” pp. 55; Rozemond, *Descartes’s Dualism* p. 104; Nadler, “Doctrines of Explanation” pp. 516–18; Ariew and Gabbey, “Scholastic Background” p. 430: “The substantial form is a determinative active principle informing and conferring essence on matter, defining the resulting substance, and locating it in its class or species. . . . Furthermore, the substantial form yields the sensible and insensible qualities (qualitates) possessed by the substance in question and is the immediate cause of the phenomena that are characteristic of it.”
to be the whole substance of the thing was first earth, then water, grass, and horse, disposed in
one way and then another. These claims are extremely obscure and dangerous, however, for in
the same way a donkey was a stone, and a stone has always existed, and no horse or human
being has ever been generated, although matter has been made a human being or a horse. These
things have been sufficiently condemned by Aristotle and others, and in no way would I want to
assent to them. (ibid.)

Here corpuscularianism, in its ancient manifestation, is not understood as denying the
synchronic individuation of material substances; one human being would be distinct
from another, Buridan allows, in virtue of being composed of different matter (lines 2–3). What
the corpuscularian theory cannot account for is diachronic distinctions between
substances; it has no way of explaining why a sequence of material changes running
through earth–water–grass–horse consists in various substances coming into and going
out of existence. Such apparent cases of generation are in fact merely changes in how
matter is disposed. Buridan labels the view “obscure and dangerous” (line 8), and thinks it
unnecessary to say anything more against it (see also §28.2).

A fuller statement of the case in favor of substantial form appears a few years later in
Marsilius of Inghen’s Generation and Corruption commentary (prob. 1360s). Marsilius
takes up the question of whether there is any need for a mixed body to have a
substantial form that is something more than the four elements and their primary
qualities, mixed according to a certain proportion. The first in his series of seven
arguments for the affirmative makes a point much like Buridan’s, that without substan-
tial form the distinction between alteration and generation collapses. But whereas
Buridan imagines the opponent of substantial form eliminating generation entirely,
and treating all change as mere alteration, Marsilius supposes to the contrary that “if in
the mixed body there is no other form beyond the forms of the elements, it would
follow that alteration would be generation” (I.22 concl. 3). This is to say, in effect, that
with no further resources beyond the elements and their qualities, any case of alteration
might be counted as a case of generation. This is the opposite of the result Buridan
describes, but really these are two sides of the same coin. For if the distinction between
alteration and generation collapses, one could say either that all alteration is generation,
or that no alteration is generation. Either substances never endure through change, but
instead always become something new, or they always endure through change, and
never become something new. The plausible middle ground that respects our intuitions
about the individuation of material objects cannot hold. That sort of principled
distinction between generation and alteration requires substantial form. Or so the
scholastics argue.

As the distinction between generation and alteration goes, so go familiar distinctions
between species. If no change is generation, then there is never a change great enough
to count as a change in species. Water–grass–horse all counts as a thing of the same
kind. If, in contrast, all change is generation, then any change to a substance, however
minor, counts as a change in the species of that substance. Either there are no
differences in species, then, or there are differences everywhere, at every instant. Either
result is absurd. This, in effect, is Marsilius’s fourth argument. Since grass and horse
would be distinct only in virtue of different elemental mixtures, there would be no basis
for treating them as substantially as opposed to merely numerically distinct. The
obvious response is to account for specific differences in terms of the different elemental mixtures themselves: one sort of mixture yielding grass, and another yielding horse. Marsilius considers and rejects this:

Nor does it help to say that they are of distinct most specific species because of the distinct disposition of the proportions in their elemental qualities. For they are not said to differ in species through the distinct proportion and disposition in their material qualities. For if the whole substance of these mixed bodies were the elements, without any new form added on, then it would follow that their elements would not differ in species, and [so] neither would the mixed bodies that are those elements differ in virtue of their distinct qualitative dispositions or proportions. (ibid.)

There is no real argument here, just a confident assertion. Marsilius is convinced that a bare difference in how the elements and their qualities mix cannot account for specific difference, but only for the sorts of accidental differences in secondary qualities considered in previous chapters. Perhaps he thinks it enough simply to say this; perhaps he could not imagine that any reader would seriously question the need for a further substantial form. It would, indeed, take nearly 300 years for these claims to become seriously controversial among philosophers.

If we fast-forward some 200 years, to Domingo de Soto’s widely read Physics commentary (1551), we can see the dialectic taking shape a bit more clearly. De Soto devotes an entire question to the issue of whether there are substantial forms (I.10), and offers three arguments in their favor. The first is a quick and unilluminating version of the argument that substantial form is required for specific differences. The second argues that since human beings have a substantial form, the rational soul, we should hold that all material substances have a substantial form. This too is not very helpful for our purposes: as we will see (§25.6), seventeenth-century critics would often accept that the rational soul is in some sense a substantial form, but refuse to generalize from that one case. De Soto’s third argument, however, is illuminating:

The conclusion is proved thirdly from substantial generation, in which some subject must necessarily be presupposed, or otherwise it would not be distinguished from creation, which is the production of a being entirely ex nihilo. But this form is in no way presupposed in substantial generation, or at least is not presupposed as united to matter or identified with it—otherwise nothing would be made through substantial generation. Therefore beyond the matter that is the subject, which is presupposed by generation, there has to be given a substantial form. (ibid.)

De Soto begins (lines 1–3) by invoking prime matter, which must endure through all change, even substantial (§2.2). Clearly, substantial change must involve more than the endurance of prime matter; otherwise, as De Soto remarks (line 5), “nothing would be made through substantial generation.” Hence something has to be added to the enduring prime matter, something that explains why that matter is now one kind of substance, whereas before it was another. This just is substantial form.

The argument is useful to consider because it is one that later corpuscularians would have to take seriously, since they all accept the picture of prime matter that it

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6 Suárez’s mammoth discussion of substantial form puts particular weight on the same sort of strategy found in De Soto, that of arguing for substantial form in the case of the rational soul, and then generalizing the point to encompass all material substances. See Disp. meta. 15.1.
presupposes. One way to react to the argument would be steadfastly to deny that anything new is produced by substantial generation: there were corpuscles before, and there are the very same corpuscles now, appearing in a different guise, differently ordered, but with nothing new having been produced. To this De Soto would seem well within his rights to respond just as we saw Buridan respond earlier, by insisting that the result would be the complete elimination of substantial change. For if so-called substantial changes are nothing more than a rearrangement of corpuscles, it is hard to see what basis there would be for distinguishing between these changes and mere alteration. Consequently, it would be hard to see how we might maintain our familiar species classifications, or ever suppose that things come into or go out of existence. This is a consequence—as we will see in Chapter 28—that some post-scholastic authors found tempting. The price, however, seems extraordinarily high, and so it is natural to want to reply to De Soto’s argument by granting that something new comes into existence when a substance is generated, but that this is not a substantial form. With this we return to Marsilius’s fourth argument, above, and the notion that the disposition of the elements might explain substantial change and species classifications. In the present context, though, we can see the makings of a dilemma for the corpuscularian. For it seems that either this disposition is something real or it is not. If it is not, then De Soto’s argument has not been answered, because it would still look as if “nothing would be made through substantial generation” (line 5), which suggests that there is no generation after all, and so no coming into or going out of existence, and so no differences between species. We would be paying the high price after all. If, instead, that disposition is something real, then it is not clear how it differs from a substantial form. It would, at any rate, apparently, be doing everything that a substantial form does.

Arguments such as these attempt to defend the doctrine of substantial form by invoking it to explain facts about diachronic identity. As we will see in Chapter 29, scholastic views in this area vary more widely than this brief sketch suggests. Even so, the standard scholastic assumption was that a material substance remains the same substance for as long as it has the same substantial form; if it changes—as it of course will, being material—those changes will be accidental to it. A material substance goes out of existence when its substantial form ceases to exist. Eliminate substantial form and the result will be either constant substantial change, or no substantial change.

A second and equally prominent line of argument for substantial form appeals to facts about synchronic identity: what makes it the case, at any given time, that one collection of matter makes one thing, whereas another collection makes another? It is notable that Buridan, in the first passage quoted in this section, lets the ancient atomists off the hook in this regard, allowing them the difference between one human being and another. Even so, such differences are highly problematic for corpuscularians. If all there are are corpuscles of various shapes and sizes, variously arranged, it is not easy to see how we might draw the boundary lines, at any given moment, between one substance and another. Scholastic authors appeal to substantial form to explain such facts. The sixth of Marsilius’s arguments for substantial form, for instance, runs as follows:
Sixth, no mixed body would be one. The consequent is false, and the inference holds because there will be four elements so proportioned, and they will not be some further one thing. (In Gen. et cor. I.22)

This is supposed to be so obvious as to need no further explanation. For if a body is simply “four elements so proportioned,” then what makes it one thing rather than a collection of uncountably many particles coming in four basic kinds? We would have no basis for regarding the parts of a tree as parts of a single substance, and no basis for regarding an individual tree as a single substance, rather than as part of a larger substance such as the whole forest, or indeed the whole material universe.7

A more systematic account of substantial form’s unifying role can be found in the Coimbran Physics commentary (1592), which, in the course of considering whether substantial form and matter yield one thing, distinguishes five degrees of unity:

To do justice to the question at issue, it should initially be noted that there are five classes of unity relevant here, and from these modes of unity there are equally many ways in which something is said to be one.

- The first is the unity of aggregation, as with a heap of stones.
- The second is the unity of order, as with an army. This is greater than the first, since things that have order are more united than a disordered, jumbled confusion.
- The third is unity *per accidens*, as with an accident and the subject in which it inheres. This is greater than the second, since in the case of the second none of the things ordered dwells in another.
- The fourth is the *per se* unity of composite things, which results from the composition of parts that are collected in some third nature. This is seen in the case of a two-palm quantity, which is composed from two palm-length bodies joined with each another by one and the same common terminus. This unity is greater than the third, since *per se* unity renders a thing absolutely (*absolute*) one, whereas unity *per accidens* renders a thing one only qualifiedly and in a certain respect (*cum adiectione et secundum quid*).
- The fifth is the *per se* unity of simple things and of substances free from mixture with matter. This unity is far superior to the others, since it is lies outside all composition of really discrete parts. (I.9.11.2)

The first three classes count as cases of unity only in a derivative sense. Things so unified are not genuinely one thing at all, but instead many things that can be said to be unified only inasmuch as they bear some special relationship to each other, whether that be (1) aggregation; (2) order; or (3) inherence. It is only with the fourth class that we arrive at unity in the proper sense, unity that is “absolute” (line 14) rather than derivative. The fifth class involves an even greater degree of unity, since here there are no real parts at all. (On the distinction between unity *per se* and *per accidens*, see §25.5. On inherence, see Ch. 11. On the *per accidens* unity of subject and accident, see §6.1.)

Substantial form yields unity of the fourth kind. The example offered in the above passage is intentionally somewhat crude: the Coimbrans here imagine a unity that results from two one-palm (∼9-inch) bodies being in contact at a single point or surface (lines 11–13). This should not be understood as implying that two bodies can become a

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7 Marsilius’s taxonomy of degrees of unity builds on a similar but less developed account in Albert of Saxony, In Gen. et cor. I.19. For a much later attempt to set out different kinds of unity, see Burgersdijk, Inst. meta. I.14 and I.22.
per se unity simply by touching; if that were true, then a heap might be a per se unity. The example seeks only to describe what intuitively would seem to be a material substance, without yet introducing substantial form. Once these five classes of unity are set out, however, the commentary immediately introduces substantial form as that which explains this unity of the fourth kind:

Something is said to be one, then, on the basis of these five different kinds of unity. So when we consider in the question whether one thing comes about from matter and form, ‘one’ should be understood in the fourth way described. Our conclusion is that from matter and substantial form something per se one comes about. This is established by Aristotle [and various other authorities] . . . , and its truth is grasped from the fact that from the nexus of form and matter a natural composite results: a human being, fire, a heavenly body, and others of this sort, each one of which is something whole that is per se one. (ibid.)

The union of matter and substantial form fits the profile of the fourth class of unity, because it is a case where two things—matter and substantial form—come together “in some third nature” (line 11 of the earlier passage), a “natural composite” (line 6 here). To say that this is a case of “absolute unity” is to say that the resulting “third nature” is a genuine thing, a substance rather than a mere aggregate. We get that result here not because there is something specially intimate about the inherence relationship between a form and its subject. If that were the story, then the third class of unity would also count as absolute, and the thick substance (the substance with its accidents [§6.1]) would count as a per se unity. It is rather the special feature of substantial form that accounts for this unity. A material substance, despite its convoluted welter of integral parts, counts as one thing in an absolute sense, one thing per se, because of the role substantial form plays in unifying that substance. The Coimbrans do not here explain what that role is, nor do they give any argument for supposing that substantial form plays that role, beyond citing various examples where substantial form and prime matter allegedly make something per se unum (lines 5–7). Just how substantial form manages to do this is what we must consider next.

24.3. Two Aspects of Substantial Form

The upshot of the previous section is that substantial forms play a crucial role in explaining the individuation of substances both over time and at a time, accounting for both substantial change and substantial unity. These are hardly surprising conclusions to reach, and certainly seventeenth-century authors were well aware of the theory’s purported role in these domains. Indeed, some of the very most radical and innovative ideas of the post-scholastic era arise from an attempt to deal with such issues in a corpuscularian framework, without appealing to substantial form. Subsequent chapters will consider the various crises that arose in the seventeenth century over how, in the absence of substantial form, to explain the unity of bodies (Chs. 25–6), the reality of natural kinds (Ch. 27), and their persistence through time (Chs. 28–30).

It is not enough, however, simply to know that substantial form was supposed to play these various explanatory roles. A real understanding of the scholastic perspective, as well as that of its later critics, requires understanding how such forms were supposed to play this role. Without that, we would be left with a theory that works simply by metaphysical fiat: to account for various intuitions about what counts as substantial
rather than accidental change, and what counts as genuine rather than derivative unity, we would simply postulate a thing-we-know-not-what, which as pious Aristotelians we might call a “form,” and which marks off a thing as an enduring, unified substance. Criticisms along these lines led post-scholastic authors to dismiss substantial forms as hopelessly obscure, and §§27.2–3 will consider the extent to which such criticisms are valid. But even if there is undoubtedly some amount of obscurity in the scholastic doctrine, still there is much more to be said about how the theory is supposed to work, beyond simply postulating substantial forms as brute substance-makers.

The crucial first step toward a more robust account is to distinguish between two aspects of the theory, metaphysical and physical. Conceived metaphysically, forms are abstract entities. They account for the metaphysical structure of the world by being that in virtue of which it is true that this cluster of matter constitutes a genuine substance whereas another cluster is merely a heap, or that in virtue of which a substance continues to exist today and tomorrow but on Friday ceases to exist. Such metaphysical entities exercise no causal powers in the modern sense of ‘cause,’ but they explain the way the world is, and are the special province of the philosopher to investigate. The physical aspect of substantial form is causal in the modern sense. So conceived, forms are concrete rather than abstract; they play a causal role in the world in very much the way that motion or the four elemental qualities allegedly do. The physicist, just as much as the philosopher, must understand forms so conceived, because otherwise one could not come to a complete understanding of the forces at work in nature.

I refer to these as different “aspects” of form because I want to leave open the possibility that one might think of substantial forms in either way, or perhaps even think of them in both ways at once. Aristotle himself perhaps furnishes an example of this last kind. Although Aristotle’s conception of form is notoriously open-ended, it is clear that he wanted formal explanations to hold at a higher level of abstraction than that of material or efficient causes. This is particularly striking in those passages that suggest the form of a substance just is its function. Aristotle remarks, for instance, that “if the eye were an animal, sight would be its soul” (De an. II.1, 412b18). Elsewhere, the form of a house is being “a covering for bodies and chattels” (Meta. VIII.2, 1043a16). In general, he holds that “what a thing is is always determined by its function: a thing really is itself when it can perform its function; an eye, for instance, when it can see” (Meteor. IV.12, 390a10–11). This suggests an abstract, metaphysical conception of form, according to which a cluster of matter counts as a substance in virtue of having the capacity to perform a certain function. Thus living things count as the substance they are in virtue of possessing the functions we associate with life, and houses are houses in virtue of having the function of giving shelter. The capacity to perform such a function would not be a sign that the thing possesses a certain substantial form; the function would instead be the form. Yet although this sort of metaphysical conception of form might be said to dominate Aristotle’s more metaphysical writings, still there are places in Aristotle where the concrete, physical aspect of form seems paramount. This is particularly apparent in his biological writings, where the form of a thing often seems to play a straightforwardly causal role, explaining both behavior and the physical structure of an animal’s body. In the De anima, for instance, to take a particularly straightforward example, the soul is the efficient cause of motion (e.g., De an. II.4, 415b8–28).
One might well wonder how, for Aristotle, the soul can be conceived of both as a function and as the efficient cause of the body’s motion. In general, it is not at all obvious how forms can be viewed both as abstract metaphysical principles and as concrete causal agents. It is not my project here to understand Aristotle, but I will venture to say that no interpretive issue is more fundamental to the study of Aristotle than the question of how these two aspects of form are to be understood. Clearly, the usual modern reading of the Aristotelian doctrine is a metaphysical reading: to highlight the physical aspect of the theory threatens to wed the hylomorphic scheme to a set of empirical theses subject to disconfirmation by research into biology and chemistry. Too little attention has been paid, however, to the scholarly question of whether this metaphysical reading of form gets Aristotle’s theory right.

Analogous questions arise for scholastic authors, where again we can see the doctrine of substantial form as having two aspects. Whereas Aristotle’s writings have the potential to be taken in either direction, the scholastic conception of form increasingly tilts toward the physical. This claim will perhaps seem surprising in light of the previous section, where we saw substantial form being put to such wholly metaphysical purposes. It is one thing, however, to show that substantial form does metaphysical work, and another to show that it fills that role as an abstract, metaphysical principle. As the scholastic era advances, the physical aspect of substantial form becomes increasingly dominant: substantial forms explain a substance’s unity and persistence, but they do so by playing a specific causal role within a substance, rather than by serving as an abstract metaphysical principle. The consequence of this approach is to open the door to corpuscularianism. For when substantial forms are so understood, the theory stands or falls with the alleged failure of any reductive account of the alleged causal role. If the physical phenomena associated with persistence and unity can be explained mechanistically, substantial forms become unnecessary. This should feel like a familiar story, because it is very much the same story I have told regarding accidental forms (§6.1, §10.5, etc.). In all of these domains, Aristotelian hylomorphism might have been given a more strictly metaphysical reading, with forms understood as abstract properties. Instead, the scholastics turned toward the concretely physical, appealing to forms as causes in natural processes, and treating the irreducibility of their role in that domain as the critical test for ontological commitment. Let us turn, then, to the physical aspect of substantial form.

Aristotle scholars vary widely in how they think about form, and do so along so many dimensions that it is hard to track the range of possibilities. For the abstract, metaphysical, see e.g. Irwin, “Metaphysical and Psychological Basis” p. 38: “A natural substance’s form is its characteristic function rather than its structure or composition, which are features of its matter.” Compare D. C. Williams, who remarks of the Aristotelian link between form and function that “no ties in the system are flimsier than this” (“Form and Matter” p. 309). The concrete, physical aspect of Aristotle’s views is brought out nicely by Cooper, “Metaphysics in Aristotle’s Embryology” p. 37: “But [the form of an animal] is directly responsible not only for its having all the tissues, organs and limbs essential to a human being, but also for many individual features of the way these are found constituted and arranged in that particular animal. Roughly, these will be all those features that, as Aristotle thinks, cannot successfully be explained as due either to environmental influences or to incidental properties of the matter that goes to constitute and sustain them” (p. 37).

If we think of souls as the paradigmatic substantial forms, then it is especially natural to think of them as being or having causal powers. See, for instance, Shields, “Aristotle’s Psychology,” supplement 2, which stresses the role of soul as the source of perception and thought, and as an efficient cause of motion (e.g., De an. II.4, 415b8–28). On essence in general as the cause of a substance’s properties, see, e.g., De an. I.1, 402b17–25 and Gen. an. V.1, 778a29–b6.
24.4. The Physical Aspect

The strategy of metaphysical fiat responds to philosophical perplexity by invoking entities to account, in brute fashion, for whatever it is that puzzles us. Scotistic haecceities are an unabashed instance of this strategy. In response to puzzles over the individuation of qualitatively alike particulars, Scotus takes the view that nothing could serve to explain their distinctness other than a primitive difference-making feature, a thiness or haecceity. Substantial forms are today often viewed in a similar light, as obscure and nearly magical entities that play their various metaphysical roles by fiat, whose positing adds nothing to our understanding of the material world. This is, however, a complete misunderstanding of the scholastic doctrine. Although it is true that scholastic authors did not take themselves to understand the particulars of any specific substantial form (§27.2), they did have a very clear general story to tell. According to this story, which was almost universally accepted in broad outlines by scholastic authors, substantial forms are something like an internal efficient cause that sustains and regulates the existence of a substance. Far from being a brute metaphysical posit, such forms in fact make a well-defined empirical assertion about the causal forms are real and active principles in the world, which is denied to any right-minded modern (“Puzzle concerning the physical aspect of the theory: “Aristotle seems to have a possible basis for the belief [in individual forms], namely that substantial forms are something like an internal efficient cause that sustains and regulates the existence of a substance. Far from being a brute metaphysical posit, such forms in fact make a well-defined empirical assertion about the causal

Kenny has identified a “tension” in Aquinas much like the one I describe here between “two different ways of understanding the notion of form,” either abstractly, as a formal cause, or as an agent, an efficient cause. He regards the two notions as “impossible to combine, without confusion, into a single notion” (Aquinas on Mind p. 149). Along similar lines, Bernard Williams talks of hylomorphism’s “wobbling between two options,” one adjectival and the other substantial (“Hylomorphism” p. 197). For reflections on these criticisms, see Gordon Barnes, “Paradoxes.”

Alexander too has something like my idea about the distinction between physical and metaphysical readings of formal explanation: “The natural philosopher is concerned with causal explanation and the concept of real qualities is regarded by the schoolmen as a causal concept but Aristotle’s use of forms in analysing change is not causal. Thus I believe that Boyle’s fundamental criticism is that what for Aristotle was merely a logical analysis of change leading to the metaphysical assertion of prime matter and ‘substantial’ forms was mistakenly interpreted as providing the pattern for the explanation of particular natural phenomena” (Ideas, Qualities p. 51). I would say, however, that Boyle is equally scornful of a metaphysical interpretation of Aristotelianism (§23.2).

Maier argues for a more metaphysical understanding of the role of substantial form, on the grounds that the causal story occurs at the level of the elemental qualities: “Die Kausalerklärung aus formae substantiales, die man der Scholastik erseits gehör in die Metaphysik und ist ein Problem anderer Art” (Vorläufer Galileis p. 57). This may be so in some cases, but I believe the overall trajectory of the scholastic debate runs toward finding a causal role for the substantial form to play. For a more recent restatement of Maier’s view, see Miles, “Descartes’ Mechanism.” He contends that the theory of substantial form, e.g. of a stone, “belongs to the metaphysical account of why a certain compositum is a stone, not to the physical or dynamical explanation of any occurrence in nature” (p. 109).

Fitzpatrick suggests that the success of the mechanistic philosophy led scholastic authors to conceive of their theories in more physical terms: “Tradition, I suggest, was encouraged by what else was going on to treat its inherited distinctions as if they, too, were a kind of mechanism” (“Medieval Philosophy” p. 314). I agree on the trend, but claim that scholastics were headed in this direction well before the mechanical philosophy came into vogue.

Kit Fine, the leading modern proponent of a metaphysical hylomorphism, recognizes and then quickly sets to one side the physical aspect of the theory: “Aristotle seems to have a possible basis for the belief [in individual forms], namely that forms are real and active principles in the world, which is denied to any right-minded modern” (“Puzzle concerning Matter and Form” p. 19).

A good example of the modern dismissal of substantial form as obscurely magical is Balme, “Aristotle’s Biology” p. 306: “The extraordinary later misinterpetations of Aristotle, the magical entelechies and real specific forms, must be largely due to these imported concepts—Species, Essentia, Substantia—which presided like three witches over his rebirth in the Middle Ages, but should be banished to haunt the neoplatonism from which they came.” In fact, this gets the situation precisely backwards. If anyone treats form in an abstractly metaphysical way, it is Aristotle. It is the scholastics who tend to conceive of forms in highly naturalistic and empirical ways, along just the sorts of lines that Balme himself extols.

For Scotus’s haecceities, see King, “Problem of Individuation.”
structure of material objects, postulating that all and only substances are held together in a tight causal structure, with one form—the substantial form—producing and sustaining the various accidental forms that give a substance its particular appearances and qualities.

Descriptions of this internal causal story go back at least to Avicenna. He claims that “among accidents, there are some that occur from without and some that occur from the substance of the thing.” As examples of the latter, Avicenna offers skin color, height, and the disposition to be hopeful or cheerful (Naturalia I.1.6, p. 61). By the middle of the thirteenth century, Latin authors were routinely ascribing this sort of role to substantial form. According to Albert the Great, “there is no reason why the matter in any natural thing should be stable in its nature, if it is not completed by a substantial form. But we see that silver is stable, and tin, and likewise other metals. Therefore they will seem to be perfected by substantial forms” (De mineralibus III.1.7 [tr. Wyckoff p. 173]). To be “stable in its nature” is for a thing to have a constant set of properties that are characteristic of that thing. The substantial form is not that set, but something further that explains their enduring presence. Aquinas regularly describes substantial form in a similar way. In his early treatise De ente et essentia, he remarks that “substance . . . must be the cause of its accidents” (ch. 6, lines 54–7), and uses one of Avicenna’s examples: the black skin of an Ethiopian. More generally, Aquinas later writes that “all accidents are certain forms added onto the substance, caused by the principles of the substance” (Summa contra gent. IV.14.3508), where those “principles” are substantial form and matter.10 Henry of Ghent distinguishes between two roles played by substantial form: first, to give existence to the whole composite substance (§24.1) and second to give the composite its distinctive operation, “diffusing through it its power to manifest a certain effect” (Quod. IV.13; f. 104v). Ockham later gives a specific example of this sort of causal role: “it is clear to the senses that hot water, if left to its own nature, reverts to coldness; this coldness cannot be caused by anything other than the substantial form of the water” (Quod. III.6). Later in the fourteenth century, Buridan remarks that “substantial forms, rather than the accidents conjoined to them, are the principal active principles in the changes and rests to which the forms are suited” (In Phys. II.5, f. 33rb). He illustrates the causal role played by the substantial form as follows: “When, in someone with a fever, the heat exceeds its correct proportion to other qualities, it is not apparent how it would be reduced to its [correct] state unless the soul were to reduce it” (ibid.). Of Marsilius of Inghen’s seven arguments for substantial form (§24.2), four concern concrete physical effects that the form has on a mixed body.

Later scholastic authors, increasingly aware of the theory’s vulnerability, develop this causal framework in considerable detail, as the principal argument in favor of substantial form. Near the end of what must be the most detailed treatment of the topic ever attempted, Suárez writes that “the most powerful arguments establishing substantial forms are based on the necessity, for the perfect constitution of a natural being, that all the faculties and operations of that being are rooted in one essential principle” (Disp.

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10 For further discussion of Aquinas’s use of substantial form to explain a substance’s accidental properties, see Wippel, Metaphysical Thought of Thomas, pp. 266–75, as well as my “Form, Substance, and Mechanism.” Further particularly clear texts are Quaest. de veritate 2.7c, Quaest. de virt. comm. 3c, De occultis (ed. Leonine 43:184ab), and In De sensu ch. 15 (ed. Leonine 45.2, lines 229–31).
Suárez refers the reader back to an earlier discussion, where he had argued:

The aggregation of multiple faculties or accidental forms in a simple substantial subject is not enough for the constitution of a natural thing. . . . A form is required that, as it were, rules over all those faculties and accidents, and is the source of all actions and natural motions of such a being, and in which the whole variety of accidents and powers has its root and unity. (15.1.7)

A theory of material substances, as unified entities both at a time and over time, is here made to depend on something that, rather than lying beneath these attributes, “rules over” them, supplying the unity necessary for a genuine substance. Metaphysical claims are thus grounded in recognizably physical, empirical theses about what explains a substance’s sensible qualities and operations. Suárez’s most detailed set of arguments for this conclusion rests on the way that substances have natural states to which they gravitate: water, for instance, is naturally cold, and eventually reverts to that state even after being heated. What is the cause of this? It must be an internal principle, Suárez argues, and can be nothing other than a substantial form (15.1.8). (This is the same example that Ockham had used before, and that Boyle would attack in the seventeenth century [Works V:345–6; Stewart pp. 59–61].) The governing assumption behind the example is that substantial forms play a concrete, causal role in regulating the accidental properties of substances. 11

The Coimbran commentators take much the same line. They describe how “certain proper and peculiar functions apply to individual natural things: reasoning to a human being, whinnying to a horse, heating to fire, and so on in other cases” (In Phys. I.9.9.2). This is obviously not a list of essential properties in the Aristotelian sense—no one would suppose that whinnying is what makes a horse be a horse. But still “the origin of such accidents must be ascribed to the substantial form, as to their source” (ibid.). Summarizing their view about the role of such forms, they write,

In all it cannot be denied that, for each and every natural thing, there is a substantial form, by which it is established, through which its degrees of excellence and perfection among physical composites is selected, on which every propagation of things depends, from which its aspect and character is stamped on each thing, which undertakes whatever task there is in nature given its power, which elicits all actions both of life and of all other functions, to which support accidents come, as if instruments, and finally, which marvelously distinguishes and furnishes the theater of this admirable world in its variety and beauty. (ibid.)

This elaborate paean to the substantial form is simply the culmination of a view that was prevalent throughout the scholastic era.

In all these texts, the dominant conception of form is decidedly physical rather than metaphysical. Substantial forms are understood as causal agents that would figure

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11 For a beautifully clear account of Suárez’s overall argument, see Shields, “Reality of Substantial Form.” He sees a larger abstract/metaphysical component in Suárez’s account than I leave room for. Also very helpful is Des Chene, Physiologia pp. 73–5. Kronen and Reedy’s translation of Disputation 15 is worth consulting for its notes alone, even for readers who do not need the translation.

Suárez in fact seems to leave room for both of these conceptions of form—concrete and abstract—when he distinguishes between the physical form, which is his primary focus, the metaphysical form, which is the thing’s essence and has no causal powers, and the logical form, which likewise lacks causal powers and is the differentia that actualizes the genus (Disp. meta. 15.11). Only the first, on his view, is a true form.
centrally in any complete scientific account of the natural world. They explain why water is cold, gold is heavy, why horses have four legs and human beings two, and why horses merely whinny whereas human beings talk. Given this conception of form, it is no wonder that some scholastic authors contemplated describing the substantial form as a kind of efficient cause. Henry of Ghent contends that “every subject through its form is the active and efficient cause of its proper accidents and likewise of its common accidents, together with the initial active causes that concur with it, disposing it for this in the way described above” (Quod. X.9 [Opera XIV:223]). Henry doesn’t hesitate here to describe the substantial form as an efficient cause, treating it as the internal analogue to the traditional efficient cause that comes from without. Godfrey of Fontaines, a contemporary critic, took issue with that characterization, and insisted that only the initial external causes can be referred to as efficient causes (Quod. VIII.2). Dispute over the proper terminology wore on for centuries. But the point does seem to be wholly terminological, inasmuch as the later scholastic conception of substantial form came to have more and more in common with an Aristotelian efficient cause. 12

Of course, the substantial form cannot be responsible for all of a substance’s accidental properties. Some accidents, like the cut on my left knee, clearly have an external cause. So the theory requires a distinction—as in the passage from Avicenna quoted at the start of this section—between those accidents that are intrinsic, which is to say that they arise from the essence of the substance, and those accidents that are extrinsic, and so the product of external forces. Many intrinsic accidents, though caused by the substantial form and the matter it actualizes, are distinctive of a given individual, such as eye color, the shape of one’s nose, and so forth. Because both form and matter vary from individual to individual, even within the same species, numerically distinct substantial forms of the same kind can give rise to accidental forms of very different kinds. The range of possible variation just is the range of variation within a species.

The causal role of substantial form makes for an important qualification to the causal primacy of the primary qualities (§21.2). Although scholastic authors treat the four elemental primary qualities as the proximate causal agents in nature, the agency of substantial form is more fundamental, since those primary qualities act only in virtue of the substantial forms that give rise to them. So although water exerts its influence through being wet and cold, or sometimes hot, it has these qualities in virtue of either its own substantial form, or else the heat of the fire that makes it hot, which heat is itself the product of the fire’s substantial form. As Daniel Sennert summarizes the doctrine in his Epitome naturalis scientiae (1618),

The forms of natural bodies are not active and efficacious immediately, as God is; rather, they act through the mediation of accidents and qualities. Although the form is the principle of [a substance’s] primary operations, the qualities are the immediate and proximate principle of those operations, albeit less principal, and merely instrumental. Forms use those qualities as instruments in acting, whereas the operation of the qualities is by virtue of the forms from which they flow. (I.6, p. 73; tr. Thirteen Books p. 29)

12 On the question of whether substantial forms are efficient causes, see Wippel, Metaphysical Thought of Godfrey pp. 176–84. Suárez, In De an. 3.3.6 contends that the soul is the efficient cause of a living thing’s accidents. For modern assertions that the relationship should be understood as efficient causation, see Brown, Accidental Being pp. 74–7; Reynolds, “Properties” pp. 289–90; Adams, “Sacrament of the Altar” p. 201.
So although the primary qualities are the proximate causal agents responsible for natural change, they are not the whole story. The mechanism of Descartes or Gassendi regards an account of the mechanical primary qualities—size, shape, motion, etc.—as sufficient for a complete account of the natural world: thus Descartes boldly asserts at the end of the *Principles* that, apart from minds, “there is nothing in all of nature whose character (ratio) cannot be deduced through these same principles”—that is, “the shape, size, position, and motion of particles of matter” (IV.187). The scholastics, in contrast, regard even their primary qualities as merely the superficial manifestations of a deeper causal structure. The essences of material objects—substantial forms inhering in matter—are not simply the abstract truth-makers for various conceptual demarcations that we make between one thing and another. Instead, substantial forms are the primary agents in the sublunary natural world. They both determine the superficial appearance of things, and account for a thing’s unity and persistence. Facts about how the world is divided into substances, and about how those substances are sorted into kinds, facts about the identity conditions of a substance at a time and its persistence conditions through time—all of this is a consequence of the physical role that substantial forms play in making a certain chunk of matter take on one set of properties rather than another.13

The choice to focus on the physical rather than the metaphysical aspect of substantial form would have profound consequences for the subsequent history of philosophy. To treat form as a kind of internal efficient cause is to diminish the distinctness and autonomy of formal explanations. It is one of Aristotle’s most cherished ideas that material and efficient causes must be supplemented by a further level of formal analysis. Scholastic authors might be said to be sliding back toward the materialism Aristotle sought to refute, as if they could not resist the temptation to ground formal explanation on material and efficient causes at a deeper level. In turn, as the scholastic conception of form grew increasingly remote from its metaphysical roots in Aristotle, it became at the same time increasingly naturalistic. Indeed, substantial forms might well be viewed as an early step in the development of scientific essentialism. By associating essences with a definite hypothesis about the causal interrelationships within a substance, the theory provides clear criteria for distinguishing between what would later be called real and nominal essences (Ch. 27). Although the scholastics were largely pessimistic about whether we can understand the details of any particular substantial form (§27.1), the theory provides no reason to be tempted by conventionalism regarding essences. If an entity is organized by the kind of causal structure we have been considering, then the internal basis of that causal structure can be identified as the form or essence. Without such a causal structure, there is only matter insufficiently unified to count as a

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13 Sennert’s general view of substantial form gets set out in *Epitome* I.3. His account of the instrumental role of the primary qualities has its roots in earlier scholastic discussions. See, e.g., Aquinas, *Sent.* IV.12.1.2 n. 76: “in actionibus naturalibus formae substantiales non sunt immediatum et proximum actionis principium, sed agunt mediantibus qualitatis activis et passivis, sicut propriis instrumentis, . . . .” See also Giles of Orleans, *In Gen. et cor.* II.2; Buridan, *In Phys.* II.5; Oresme, *In Gen. et cor.* II.1, II.12; De Soto, *In Phys.* II.11–12; Coimbrans, *In Gen. et cor.* I.4.8. And see Maier, *An der Grenze* pp. 12–13 (tr. Sargent p. 134). Cremonini’s argument that the primary qualities of the elements are their substantial forms (§7.5) rests in part on the alleged absurdity of this double causality: the substantial form acting on the qualities, which then act on the world (*De formis elementorum* ch. 11).
substance. Thus the theory of substantial form comes out as a well-defined hypothesis about the structure of material beings.  

24.5. Doing without Form: Descartes

According to Domingo de Soto in 1551, “it is certain that a substantial form must be acknowledged that is receivable in matter and really distinct from that matter. This conclusion is common to all” (In Phys. I.10, p. 68b). Post-scholastic theories of form and substance grew up in the shadow of this distinctively scholastic consensus and, as §27.6 will discuss, they did not entirely cast it off. Within 100 years, however, the consensus that De Soto describes had vanished. The leading philosophers of the seventeenth century almost all reject substantial form. What they reject, specifically, is the physical aspect of the theory. Descartes remarks that substantial forms “were introduced by philosophers solely so that through them an account could be given of the proper actions of natural things, of which this form was the principle and base” (to Regius [1642]; III:506). Boyle likewise makes a lengthy attack on the view that there is “in every natural body such a thing as a substantial form, from which all its properties and qualities immediately flow” (Origin [Works v:351; Stewart p. 67]). And Hume would later report that “the Peripatetic philosophy…assigns to each of these species of objects a distinct substantial form, which it supposes to be the source of all those different qualities they possess, and to be a new foundation of simplicity and identity to each particular species” (Treatise I.4.3). It never seems to have occurred to most post-scholastic authors that substantial form might be something other than a scientific hypothesis about why, for instance, water is cold and fire is hot. When the theory is so understood, it becomes vulnerable to replacement by an adequate corpuscular account of the various qualities of bodies. In seeing the debate in these terms, they were simply following the scholastic doctrine as they knew it.

One finds substantial form under attack in various early seventeenth-century authors. Sebastian Basso’s Philosophy naturalis adversus Aristotelem (1621) condemns the doctrine, and Etienne de Clave and his co-conspirators reject it as absurd in their notorious broadsheet (1624). William Pemble argues at length against substantial form in his De formarum origine (1629), as does Joachim Jungius in the ninth of his Hamburg Disputations (1633), as do Gerard and Arnold Boate in their Philosophy naturalis.
reformata (1641). The same arguments appear over and over: that the scholastics lack an account of how the substantial form is generated out of prime matter (§28.1); that the view makes a form into a substance (§26.1); and that, above all, substantial forms are superfluous. Basso’s discussion is particularly remarkable in this last regard. He discusses in some detail the alleged physical role of substantial form as an internal governing cause, quoting the same passage of the Coimbran Physics commentary quoted in §24.4. But rather than attempt to replace this story with a reductive corpuscularian account, as later seventeenth-century authors customarily would do, Basso offers what is in effect a form of occasionalism, where instead of a single internal form regulating the whole substance, it is God who immediately directs the parts of material substances so as to bring about the regular natural phenomena that we experience around us.¹⁵

The great exception to this pattern is Leibniz, whose views on substantial form reflect precisely the sort of pattern I have been arguing for. Viewed according to their physical aspect, forms must be rejected:

The consideration of these forms serves no purpose in the details of physics and must not be used to explain particular phenomena. That is where the Scholastics failed, as did the physicians of the past who followed their example, believing that they could account for the properties of bodies by talking about forms and qualities without taking the trouble to examine their manner of operation. (Discourse on Metaphysics 10 [Phil. Schriften IV:434; tr. Ariew and Garber p. 42])

Yet this is not to say substantial forms should be rejected, because they are in fact crucial for metaphysics:

This misunderstanding and misuse of forms must not cause us to reject something whose knowledge is so necessary in metaphysics that, I hold, without it one cannot properly know the first principles or elevate our minds sufficiently well to the knowledge of incorporeal natures and the wonders of God. (ibid.)

There is no hope of doing justice here to Leibniz’s complex and changing views, and so I merely gesture toward them as a landmark just beyond our horizon.¹⁶

A more manageable subject for present purposes is Descartes, the most influential early example of an author who rejects substantial form. His published writings adhere

¹⁵ De Clave, Bitaud, and Villon reject substantial form in the second of the fourteen theses in their broadsheet of 1624, notably on the grounds that without prime matter it becomes unnecessary: “Formae item omnes substantiales (excepta rationali) non minus absurde defenduntur ab Aristotelicis quam materia, cum per eas intelligent substantias quasdam incompletas unum per se cum materia substantiale compositum constituentes: materia enim e naturali composito sublata, et formas saltem materiales tolli necesse est” (in Kahn, “Entre atomisme” p. 246; tr. Garber, “Defending Aristotle”). For more on the 1624 broadsheet, see §19.6.

Basso’s discussion of substantial form occurs mainly in the three books of his Philosophia naturalis devoted to form (De forma, pp. 130–309). De formis III is especially important for Basso’s form of occasionalism, e.g., at p. 267: “Quid quaerunt in rebus singulis singulas formas substantiales, cum una universalis causa per omnia extensa singulis sufficiat?” and pp. 247–8: “Nos probaverimus superius res cuiusque naturalis proprias ilias actiones quibus certo in finem suum collimat ac pertingit aut non naturae singularis quae in ipsa sit motu atque impetu elici, sed esse causae illius universalis Dei inquam ipsius operationes, qui velati artifex res ipsas tanquam instrumenta quasque movet agiteque prout ipsarum patitur aptitudo.” Basso’s views in this regard are discussed in Lüthy, “Thoughts and Circumstances,” and in Gregory, “Sébastien Basson.” For a reading of Basso on which he looks to be an occasionalist as radical as Malebranche, see Nielsen, “Seventeenth-Century Physician.”

¹⁶ There is a large and sophisticated literature on Leibniz’s views regarding substantial form. Among much else, see Levey, “On Unity”; Mercer, “Aristotelianism at the Core”; Sleigh, Leibniz and Arnauld and, most recently, Garber, Leibniz.
to a disciplined stance in this regard: he does not positively reject substantial forms, or argue against them, but simply proceeds without them, hoping to show by example that they are unnecessary. When he does mention these and other scholastic doctrines, he proceeds cautiously, as in this passage from the Meteorology (1637):

But to keep the peace with the philosophers, I have no wish to deny whatever they may imagine in bodies over and above what I have described, such as their “substantial forms,” their “real qualities,” and the like. But it seems to me that my arguments will be all the more acceptable in so far as I can make them depend on fewer things. (Discourse 1, VI:239)

Descartes’s most extensive and frank remarks come in a long letter from January 1642 advising his then-disciple Henricus Regius on how to deal with attacks on their shared views. Descartes suggests that Regius make this reply to his principal critic, Gisbertus Voetius:

I wholly agree with the view of the learned Rector that those “harmless entities” called substantial forms and real qualities should not be rashly expelled from their ancient territory. Indeed, up to now we have certainly not rejected them absolutely; we merely claim that we do not need them in order to explain the causes of natural things. We think, moreover, that our arguments are to be commended especially on the ground that they do not in any way depend on uncertain and obscure assumptions of this sort. Now in such matters, saying that one does not wish to make use of these entities is almost the same as saying one will not accept them. Indeed, they are accepted by others only because they are thought necessary to explain the causes of natural effects. So we will be ready enough to confess that we do wholly reject them. (III:500)

Descartes goes on to suggest several arguments that Regius might make against substantial forms, but this passage illustrates the heart of his view: substantial forms are not needed, hence should not be made use of, hence are in effect rejected. It is clear that he understands the theory according to its physical aspect, remarking here that others embrace them “only because they are thought necessary to explain the causes of natural effects” (lines 8–9). When substantial forms are so conceived, the only question is whether a purely corpuscularian account is sufficient to explain these “natural effects.”

On Descartes’s austerely corpuscularian conception of material substances, particles of various shapes and sizes, variously positioned and moved in accord with the law of nature, explain everything in the material world. Accordingly, Descartes lacks any basis for a fundamental distinction between those bodies that count as substances and those that do not. (Indeed, I will argue in §28.5 that his options are so limited in this regard that he chooses not to offer a theory of material substance at all.) So whereas scholastic authors suppose that artificial forms (e.g., the form of a chair) are accidental rather than substantial, and so hold that artifacts as such are not substances, Descartes “recognizes no difference between artifacts and natural bodies” except that it is easier to see how artifacts work (Principles IV.203). That Descartes recognizes nothing beyond

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17 For Descartes on artifacts, see Principles IV.203: “Atque ad hoc arte facta non parum me adjuverunt: nullum enim alium, inter ipsa et corpora naturalia, discrimen agnosco, nisi quod arte factorum operationes, ut plurimum, peragentur instrumentis adeo magnis, ut sensu facile percipi possint: hoc enim requiritur, ut ab hominibus fabricari queant.” Later scholastic discussions of artifacts are extremely interesting but have received virtually no attention. There was no dispute that artifacts, as such, should not count as substances, but there was considerable dispute over whether one should postulate accidental forms to account for why a chair, say, is a chair. For a detailed statement of the reductive view see
corpuscular explanation in the case of non-living things is obvious enough. Thus, after rejecting the alleged primacy of the four elemental qualities, he adds:

Unless I am mistaken, not only these four qualities but all the others as well, and even all the forms of inanimate bodies, can be explained without the need to suppose any other thing (chose) in their matter other than the motion, size, shape, and arrangement of their parts. (Le monde ch. 5, XI:26)

The same is clearly true for animals, since Descartes denies that their operations require any sort of soul at all: “I have seen clearly that all the motions of animals can arise from corporeal and mechanical principles” (to More [1649], V:276). Even in the case of the human body, the body’s states and operations admit of their own autonomous corpuscularian explanation. Thus he tells Regius that “when we consider the body alone we perceive nothing in it on account of which it desires to be united with the soul” (III:461)—thereby announcing the body’s autonomy from the soul, and rejecting Aristotle’s famous dictum that “what desires the form is matter, as the female desires the male and the ugly the beautiful” (Phys. 192a22–23).

It is not so easy, however, to dismiss the idea that Descartes’s mind might count as a substantial form. Various scholars (most prominently, in recent years, Paul Hoffman) have argued forcefully that Descartes’s views are in fact closer to the scholastics than is ordinarily supposed. For whereas in general Descartes can dismiss substantial forms as superfluous, he cannot take that approach in the case of the rational soul, since he of course wants to retain the mind as an entity distinct from the body. Moreover, although he prefers the term ‘mind,’ he also frequently uses the term ‘soul,’ and on multiple occasions he refers to it even as a substantial form. In his correspondence with Regius, for instance, he writes that the soul is “the true substantial form of a human being” (III:505) and that “the human soul alone is recognized as a substantial form, whereas other forms arise from the configuration and motion of the parts” (III:503). So this aspect of Descartes’s view requires more careful attention.

Ockham, In Phys. II.1.4 and Dabillon, Physique I.1.3. For the countervailing realistic view, see Burley, In Phys. II (f. 37ra) and Oresme, In Phys. II.4. Aquinas’s views, although not as sophisticated as later treatments, have as usual received the most attention. See, recently, Rota, “Substance and Artifact.”

An illuminating passage regarding the limited role that soul/mind plays for Descartes in the human body occurs in the Fourth Replies, responding to Arnauld’s query about how a sheep can flee the wolf without having a soul to guide it. Descartes responds: “Plurimi vero ex motibus qui in nobis fiunt nullo pacto a mente dependent: tales sunt pulsus cordis, ciborum coctio, nutritio, respiratio dormientium atque etiam in vigilantibus ambulatio, cantio et similia, cum fiunt animo non advertente. . . . Cunque hoc in nobis ipsis pro certo experiamur, quid est quod tantopere miremur si lumen e lupi corpore in ovis oculos reflexum habeat vim ad motum fugae in ipsa excitandum?” (VII:229–30). On the lack of souls in animals, see also L’homme XI.202, and letters from 1637 (I:414–15) and 1638 (II:40–1). For general discussions of Descartes and animals, see Cottingham, “Descartes’ Treatment”; Hatfield, “Animals”; Morris, “Bêtes-machines.”

Descartes characterizes the mind as the form of the body, or as informing the body, at X:411, VII:356, IV:168, IV:346, IV:373. The original Latin text of Principia IV.189 says that the soul “totum corpus informet,” but the subsequent French translation has the soul’s being “unie à tout le corps.” Voss, “End of Anthropology,” contains a useful cataloguing of these and other crucial texts relating to the mind–body problem. But given that these passages extend from the Regulae of 1628 to correspondence in 1646, there seems little reason to accept Voss’s argument that this reflects a “brief period”
Certainly, the bare fact that Descartes describes the mind as the body’s form shows nothing at all. The Fifth Lateran Council (1513) had reaffirmed the Council of Vienne (1312) in holding it heretical to deny that the soul is the form of the body (§20.2). For Descartes to contravene this dictate would have made him immediately vulnerable to charges of heresy. That is not to say that his remarks in this area were disingenuous. Beyond the usual reluctance we should have to reach such a conclusion (§20.5), the charge of disingenuity is especially inappropriate here, because it presupposes a robust meaning for ‘form’ that simply does not exist. On the contrary, as Descartes’s contemporaries recognized, the notion of form is so broad as to be quite platitudinous. Thus Antoine Arnauld and Pierre Nicole ask in the Port-Royal Logic (1st ed. 1662): “who can doubt that all things are composed of matter and of a certain form of this matter?” (Second Discourse, p. 33). Later they issue a harsh denunciation of “a certain bizarre kind of substances called in the School ‘substantial forms’” (III.19, p. 244), than which “nothing is more badly founded” (p. 245). Yet a few pages earlier they had embraced the general notion of form: “THE FORM is what renders a thing such and distinguishes it from others, whether it is a being really distinct from the matter, according to the opinion of the School, or whether it is only the arrangement of the parts” (III.18, p. 240). So if ‘form’ refers to some really distinct, irreducible being, present in all material substances, then it is bizarre and unacceptable. But if ‘form’ is simply a way of referring to the arrangement of the parts, then the term is unproblematic. This is a standard seventeenth-century usage, and can be clearly seen even in Descartes, as when he tells Regius that “a simple alteration does not change the form of the subject (e.g., heating in wood), whereas generation changes the form (e.g., setting it on fire)” (III:461).

Yet even if this notion of ‘form’ explains some post-scholastic usages of the term, it does not quite explain how the mind can be the form of the body—neither for Descartes nor for most critics of scholasticism—since these authors do not want to say that the mind in any sense “arranges” the parts of the body. Still, even in the case of mind, the platitudes can be brought to bear. The passages in the previous paragraph agree that the form of a thing is linked to its being a thing of a certain kind. Whatever a form is,
according to the Port-Royal Logic, it is at least that which “renders a thing such and distinguishes it from others” (as above). According to Descartes, a thing counts as wood in virtue of its form; when it ceases to have that form (say, by being burned) it ceases to be wood. There is, then, at least this much genuine content to Descartes’s claim that the mind is the form of the human body: the mind, when properly joined to such a body, makes the whole be a thing of a certain kind, a human being. (I return to the details of this union in §25.6.) This, however, is not enough to make the mind count as a substantial form, unless we are to render that doctrine trivial by insisting that anyone who believes objects fall into kinds counts as a believer in substantial forms in virtue of having something that accounts for kind membership.

So far as I can see, there are just two plausible reasons for thinking that Descartes treats the mind as a substantial form in some more robust sense. The first is that he embraces holenmerism: the doctrine that the mind exists as a whole in each part of the body. As we have seen in some detail in Chapter 16, this is a point of similarity with scholastic authors, and Descartes’s motivation is much the same as the scholastic motivation, in that it offers a way to account for the mind’s location without having to treat it as truly extended. It is in this spirit that Descartes alludes to holenmerism in the Sixth Meditation, offering it to explain “the great difference between the mind and the body” (VII:85–6). Yet we can hardly regard the mind’s holenmeric existence as a reason to treat the mind as the body’s form, since this is how all spiritual substances (that is, both God and the angels) were standardly said to be present to bodies. So if an angel can be present to our body holenmerically, and God can be present everywhere holenmerically, then holenmerism shows nothing about whether Descartes’s mind is the substantial form of the body. 21

The remaining basis for treating Descartes as seriously committed to a hylomorphic understanding of the mind–body composite is a letter to the Jesuit Denis Mesland in 1645. When we speak of the human body, Descartes tells Mesland, we are referring not to a determinate quantity of matter that endorsed only briefly, but to whatever matter is united with the soul of the person in question. “And so, even though that matter changes, and its quantity increases or decreases, we still believe that it is the same body—numerically the same—so long as it remains joined and substantially united with the same soul” (IV:166). This by itself suggests something interesting about Descartes’s ontology: that it admits an enduring entity that is the human body, as the counterpart of the human mind. Passages such as this point toward substance dualism of the most straightforward sort, according to which human beings are a composite of two distinct substances, an enduring mind and an enduring body (§25.4). The passage also suggests something more: that the mind is what individuates the body, making the body exist only “so long” as the two are united. If Descartes is truly committed to this view, then his mind does play one very significant role—arguably the most significant role—played by scholastic substantial forms: that of accounting for the identity through time of the

21 For holenmerism as a basis for treating Descartes’s mind as a genuine substantial form, see Rodis-Lewis, “Descartes and the Unity of the Human Being” p. 206 and Hoffman, “Union and Interaction” pp. 392–3. It is worth noting that although Descartes evidently does hold that the soul exists throughout the body, he does not seem to think that it acts on each part of the body, as the scholastics suppose. Instead, it acts only on the pineal gland: “l’aˆme ne peut avoir en tout le corps aucun autre lieu que cette glande où elle exerce immediatement ses fonctions” (Passions I.32). This all by itself precludes the mind from playing the causal role of a substantial form.
composite and its parts (§24.2, §29.1). (Indeed, to anticipate the following chapter, Descartes’s conception of a human being would be surprisingly close to Thomistic unitarianism, which likewise treats the body as incapable of existing apart from the soul.) Now, all by itself, the passage just quoted does not go so far. To say that the body remains in existence only “so long” as it remains joined to the mind is to postulate only a temporal correlation, leaving open the question of what accounts for the body’s ceasing to exist. A substance dualist might think that the body endures only for as long as it is joined to the mind not because the mind individuates the body, but because it is simply a law (natural or supernatural) that, whenever there is a body of a certain appropriate kind (that is, of the human kind), there must be a mind attached to it. On this sort of view, the ongoing presence of a human mind joined to a body would be a sign that the same human body exists, but the mind would not be the cause of the body’s ongoing existence. Mind would not individuate body. Yet as the letter to Mesland continues, it becomes clear that Descartes really does mean to say that the mind individuates the body. This seems the only natural construal of his claim that “our bodies are numerically the same only because (à cause que) they are informed by the same soul” (IV:167). He reiterates this in a later letter to Mesland: “It is quite true to say that I have the same body now that I had ten years ago, although the matter of which it is composed has changed, because the numerical identity of the body of a human being depends not on its matter, but on its form, which is the soul” (IV:346). In these passages the explanatory order is just what it should be, if the mind is playing the metaphysical role of a substantial form.

If these remarks to Mesland represent Descartes’s considered view of the mind–body relationship, then they give us good reason to regard Descartes’s mind as very much like a scholastic substantial form. There are, however, strong reasons to be doubtful. First, they are not repeated elsewhere in Descartes’s work, and in particular not in any of his published writings. Second, they come in a peculiar context: as part of an attempt to explain the Eucharist. The story Descartes offers Mesland about Christ’s real presence in the host requires this particular story about the metaphysics of how mind individuates body. This certainly does not show that Descartes is being disingenuous, but it does provide a motive for why he might be expressing himself in ways that are liable to mislead, if not interpreted cautiously. Third, and most importantly, what Descartes says here directly contradicts what he says in other, published works. The Synopsis to the Meditations, for instance, draws a distinction much like that of the letter to Mesland between body conceived of in general, as res extensa, and the human body, with its distinctive character. But although the human body evidently endures through its union with the mind, it is not the mind that individuates it, but its distinctive physical character: “the human body, insofar as it differs from other bodies, is made up from nothing other than a certain configuration of its organs and limbs (memborum), together with other such accidents. . . . It becomes a different body merely as a result

22 The importance of the Mesland correspondence is stressed in Hoffman, “Unity of Descartes’s Man.” Chappell, “L’homme cartésien,” has argued in reply that this correspondence “contains nothing specifically Aristotelian” (p. 417). Rozemond likewise remarks, with respect to the claim that the mind individuates the body, that “I don’t see how it should commit a person to a genuine sense of hylomorphism” (Descartes’s Dualism p. 163). This, as I argue in the main text, strikes me as the wrong reply to make.
of a change in the shape of some of its parts” (VII:14). This fits quite nicely with the letters to Mesland, except that it omits the crucial part about the mind individuating the body.

Other passages similarly preclude the mind from playing this role. In the Second Replies he repeats almost verbatim the Synopsis account of the human body as a product of its organs and limbs and other accidents, and then adds that “the death of the body depends solely on some division or change to its shape” (VII:153). These claims are made even more starkly later on in *The Passions of the Soul*, his last work published during his lifetime. Here he describes “a very serious error that many have fallen into, and that I regard as the primary cause of our failure up to now to give a satisfactory explanation of the passions and of everything else belonging to the soul.”

The error consists in supposing that since all dead bodies are devoid of heat and movement, it is the absence of the soul that causes this cessation of movement and heat. Thus it has been believed, without reason, that our natural heat and all the movements of our bodies depend on the soul; whereas we ought to hold, on the contrary, that the soul takes its leave when we die only because this heat ceases and the organs that bring about bodily movement decay. (*Passions* I.5)

This much, all by itself, does not conflict with the letters to Mesland. What this passage shows—and what should be no surprise—is that Descartes rejects the physical aspect of substantial form. Compare, for instance, the typical scholastic account of Franciscus Toletus:

Every accident of a living thing, as well as all its organs and temperaments and its disposition are conserved by the soul. We see this from experience, since when that soul recedes, all [these] dissolve and become corrupted. (*In De an*. II.1.1, III:40ra)

Toletus is here arguing for precisely what Descartes denies: that a living thing needs a soul as something over and above its body to sustain its various properties and functions. Inasmuch as scholastic authors universally put this at the heart of their conception of substantial form (§§24.3–4), there can be no denying that Descartes is wholly rejecting one very prominent aspect of the scholastic theory. Even so, one might insist on a metaphysical role for the mind, as the body’s form. Yet this seems to be precluded by the very next article, which elaborates on how to avoid the “serious error” described above: “So as to avoid this error, let us note that death never occurs through the absence of the soul, but only because one of the principal parts of the body decays” (*Passions* I.6). If Descartes were truly committed to the view he describes to Mesland, according to which the human body continues to exist because it is united to the soul, it is very hard to see how he could have written this. Moreover, the article continues to undermine even the relatively uncontroversial idea from the Mesland correspondence that the body’s existence is correlated with its union with the soul. For he compares “the difference between the body of a living man and that of a dead man” to the difference between a watch that is working and “the same watch or machine” when it is broken. This is not what Descartes should say if he takes seriously his remarks to Mesland. If a watch stands to working as the human body stands to being alive, then a broken watch should not be “the same watch.”
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Perhaps there is some way to read all of these passages so as to make them consistent with the claim to Mesland that the mind individuates the body. Anyone who wants to engage the difficult issue of how Descartes understands substance must make a series of contested interpretive choices. To my mind, however, this is the first and easiest of such choices. The vast preponderance of evidence favors discounting those letters, and so regarding Descartes as an unqualified opponent of the doctrine of substantial form. The following four chapters will spell out further features of Descartes’s theory of substance, as I understand it.
Unity and Dualism

25.1. The Plurality of Forms Debate

The existence of substantial forms was common ground among Aristotelians throughout our four centuries. Mandated by Church authority in the case of the human soul, the doctrine was extended universally to the case of other substances and so might well be regarded, along with real qualities, as a defining feature of scholasticism. As usual, however, one cannot go very far in describing scholastic views before such common ground falls away, and one enters into disputed territory. In the present domain, those disputes arise as soon as one asks just how many substantial forms a single substance possesses. This was one of the first and fiercest philosophical disputes to emerge during our period. And although modern commentators have often wondered at how such an abstruse question could be philosophically significant, we will see that it raises quite deep metaphysical questions about the unity and continuity of substances, and sheds light on what it means to be a dualist.¹

The unitarian position—that a single substance has just a single substantial form, informing prime matter—is associated above all with Thomas Aquinas. No one before him—Greek, Islamic, Jewish, or Christian—had made such systematic use out of the idea that a material substance just is a single substantial form inhering immediately in prime matter. One reason the idea was controversial is that it seemed to yield much too thin a notion of substance. Although it was standard to conceive of substances thinly, as the per se unity itself, apart from its accidents (§6.1), unitarians were committed to the surprising claim, as the Thomist Giles of Lessines puts it in his De unitate formae (1278),

¹ There is a large literature on the controversy over counting substantial forms. Callus, “Two Early Oxford Masters” p. 411, remarks that “in the thirteenth century perhaps no other problem aroused such heated controversy as the question of plurality of forms.” See also Adams, William Ockham ch. 15; Bazán, “Pluralisme de formes”; Biard, “Diversité des fonctions”; Callus, “The Origins of the Problem”; Cross, Physics of Duns Scotus ch. 4; Michael, “Descartes and Gassendi”; Zavalloni, Richard de Mediavilla. Very different assessments have been made regarding which view was more prevalent. According to Adams, “Aquinas’s ‘unitarian’ contention . . . was definitely a minority report” (William Ockham, II:647). Michael, in contrast, looking at the later scholastic era, holds that unitarianism is “by far the majority view” (“Descartes and Gassendi” p. 143). I have no idea how one would go about conducting an accurate census, given the vast number of texts, most never read, but as far as I can see opinion was fairly evenly divided.

For doubts over the philosophical interest of the debate see Kenny, Aquinas on Mind: “It is not easy to know by what arguments, or even by the practice of what discipline, we are to settle the question of how many substantial forms there are in, say, a living dog” (p. 26). I myself made similar remarks in Thomas Aquinas on Human Nature pp. 126–30, a discussion I now think did not go nearly deep enough.
that a substance “would be composed of nothing but bare matter and an ultimate form” (p. 10 n. 3). Giles responds to this worry by stressing just how much rich content that one ultimate substantial form brings to prime matter, but even so this struck pluralists as an incredibly austere conception of what a substance is.

If all that were at issue in this debate were the question of how to individuate forms, then the whole topic really would be forbiddingly obscure. One might conceive of a substance as having a single, richly comprehensive substantial form or as having a plurality of more specialized ones—it is hard to see how we might arbitrate such a dispute, or why we would care. In fact, however, what drove the dispute were more interesting and consequential disagreements over the persistence and unity of substances. Because of the unitarians’ exceptionally thin conception of substance, they had no way of accounting for partial survival: on their account, when a substance comes into existence, every part of it comes into existence anew (other than its prime matter), and when it goes out of existence, every part of it goes out of existence (other than its prime matter). This means, for instance, as we will see in 25.3, that when an animal ceases to exist, not even its body remains. The animal’s corpse is not its body, but instead one or more numerically distinct substances. This seems implausible, on its face, but unitarians contended that only their view can account for the special unity of substances. Scholastic pluralists therefore needed an account of what holds their thicker, complex substances together, and their difficulties in this regard foreshadow the similar difficulties that seventeenth-century authors would have in accounting for substances without any substantial forms at all.

Unitarianism might well be regarded as Aquinas’s most distinctive and influential philosophical idea, but it is not wholly unprecedented. Earlier scholastic authors routinely debated whether the nutritive, sensory, and rational powers should be conceived of in terms of three souls or one, with Albert the Great among others very clearly insisting on the one-soul solution. Even before that, Averroes can be found maintaining that “it is impossible for a single subject to have more than one form” (De substantia orbis ch. 1 [Opera f. 3V]). But although the unitarians upheld Averroes as their champion, so did the pluralists, and both had texts to which they could appeal. It is only when one arrives at Aquinas that one finds an explicitly comprehensive statement of the doctrine, such as this:

One must say, then, that a human being has no substantial form other than the intellective soul alone, and that just as it virtually contains the sensory and nutritive souls, so it virtually contains all lower forms, and that it alone brings about whatever it is that less perfect forms bring about in other things. And the same must be said for the sensory soul in brutes, and the nutritive soul in plants, and generally for all more perfect forms with respect to the less perfect. (Summa theol. 1a 76.4c)

Aquinas here presupposes the conception of substantial form described in the last chapter, according to which it is the fundamental internal explanation for all of a thing’s intrinsic features. At every level of complexity, there is just one substantial form at work. The primary qualities of elemental Earth—Cold and Dry—are explained by the element’s substantial form; the qualities of a homogeneous mixed body like gold are explained by the form that dictates how the four elements combine within that mixture; the complex structure of a heterogeneous body is explained by its unique
substantial form. This pattern continues all the way up to the most complex of material substances, a human being, whose rational soul explains all of its intrinsic features, from its intellective capacities all the way down to the elemental qualities on which its corporeal features supervene. At each higher level of complexity, there is just a single substantial form, responsible for everything that would be accomplished by these subsidiary forms at a lower, less complex level. Thus the rational soul “virtually contains all lower forms” in the sense that “it alone brings about whatever it is that less perfect forms bring about in other things” (lines 2–4 above).

Unitarianism was condemned at Oxford in 1277 and again in 1284 by successive archbishops of Canterbury—first the Dominican Robert Kilwardby and then the Franciscan John Pecham. (The doctrine did not figure in the more famous and much lengthier Condemnation of 1277 at Paris, but was discouraged there too, as we saw in §20.5.) The Dominican order subsequently rallied around the teachings of their master, even at some cost. When Richard Knapwell held a disputation defending the unitarian position, circa 1285, Pecham excommunicated him. The leading scholastic figures in the fifty years after Aquinas—Henry of Ghent, Scotus, and Ockham—lined up against Aquinas’s position. Yet after Aquinas’s canonization in 1323, unitarianism made a comeback. It was defended not just by “all the Thomists” (as Suárez puts it [Disp. meta. 15.10.61]), but also by innovative and influential figures like Gregory of Rimini, John Buridan, Marsilius of Inghen, and Peter of Ailly, and later by Suárez and other Jesuits. Lined up in favor of pluralism was an equally impressive list, including John of Jandun, Nicole Oresme, Paul of Venice, Agostino Nifo, and Jacob Zabarella.

Albert the Great defends the soul’s unity at In Ethic. I.15 (Cologne XIV n. 90): “Concedimus, quod haec tres sunt unius essentiae et sunt diversae potentiae fluentes ab una essentia, quorum quaedam sunt affixa organis et quaedam non affixaie, et similia in quoque duae sunt fluentes ab una essentia, secundum sanctorum et philosophorum.” The same view had already been defended, just as explicitly, by Johannes Blund, Tract. de anima q. 4. Averroes is quoted from the medieval Latin translation of the De substantia orbis. The original Arabic is not extant. Most Hebrew translations contain the inverted claim that “it is impossible for one form to have more than one subject.” But the context of the passage, and its commentary tradition, suggest that the intended sense is as quoted (see Hyman’s note at De subst. orbis p. 50n.). Other suggestive passages are In Phys. I.63 and In De an. II.2. As §4.3 discussed, Averroes treats extension as accidental to prime matter, rather than as a distinct substantial form, which is the view that would be associated with Avicenna. Further questions arise from Averroes’s theory of mixture, which allows that the substantial forms of the elements remain in an attenuated state (see Wood, “Influence of Arabic Aristotelianism” and Maier, An der Grenze pt. I [part. tr. Sargent, ch. 6]. For later appeals to Averroes, by both unitarians and pluralists, see Michael, “Averroes and the Plurality of Forms.”

Scholars disagree on the extent to which Aquinas’s position is novel. Callus thinks “the question cannot have originated with him,” but that he was the first to give the problem “its full significance” (“Origins of the Problem” p. 124). Zavalloni thinks a stronger conclusion can be maintained: “les scolastiques prétomistes sont tous des pluralistes, ce que ce sont des pluralistes inconscients” (Richard de Mediavilla p. 368). This judgment has been reaffirmed more recently by Dales, Problem of the Rational Soul p. 2. It seems to me the stronger claim can be maintained, provided one insists on the full scope of the unitarian commitment. Although modern scholars rarely recognize the breadth of issues involved in the dispute between unitarians and pluralists, it is common for scholastic authors to list the range of possible issues that arise. Burley, for instance, lists five separate disputed issues (De formis p. 33), and Marsilius of Inghen offers a somewhat different list of five (In Gen. et cor. I.6).

For the pluralist side, see Henry of Ghent, esp. Quad. IV.13; Scotus, esp. Ord. IV.11.3; Ockham, Quad. II.10–11; Pecham, Quad. IV.25; William de la Mare, Correctorium aa. 27, 31–2, 52, 102, 114, etc.; Olivi, Summa II.71 (see Pasnau, “Olivi on the Metaphysics of Soul”); Marston, Quad. II.22; Aquisparta, De incarnatioine q. 9, pp. 180–2; Richard of Middleton, De gradu formarum; Jandun, In Phys. VII.8, In Meta. II.10; Burley, In De an. II.1–2, De formis pp. 35–44; Harclay,
In a way, this lingering disagreement obscures the real story. Although Aquinas’s unitarian account was bitterly attacked for centuries, even his opponents generally came to agree that such an account was preferable when available. When Henry of Ghent argued against the unitarian conception, he did so only for the special case of human beings, and even there he postulated only two substantial forms: a rational soul, including the sensory and nutritive powers, and a natural, bodily form. Scotus likewise argued only for two forms, and only in the case of living things, contending that living substances have both a soul that makes them be alive and a form that structures their body, which he called the *forma corporeitatis*. Ockham was relatively extravagant in positing three substantial forms within a human being: a rational soul, a sensory–nutritive soul, and a form of the body. All three authors agreed with Aquinas in the case of nonliving things, and they agreed that the default view should be the unitarian one, unless special considerations made it untenable. Aquinas thus succeeded in changing the terms of the debate. The kind of pluralism he attacked had posited a substantial form corresponding to each of a thing’s essential properties, up and down the Porphyrian tree. This kind of promiscuous pluralism quickly went out of fashion, once Aquinas’s contemporaries were won over by the elegance of the unitarian scheme. As Suárez would put it much later, in describing this promiscuous pluralism, “the view is now antiquated and rejected as utterly implausible” (*Disp. meta.* 15.10.4). After Aquinas, the main debate was not over whether to postulate a substantial form for each essential attribute, but whether to postulate one, or two, or three, and only in certain special cases (in human beings, or in living things).4

Yet although this represents the main line of debate, the full contours of the discussion are far more complex. Substantial forms played so many and various roles that there was conceptual space for dozens of different positions, running from the unqualified unitarianism of the Thomists to the promiscuous pluralism of Zabarella, who remarked that “if two forms at once are not contrary to reason, then neither will it be contrary for there to be four or a hundred at once in the same substance” (*De rebus nat.*, De gen. ch. 2, cols. 397–8). As we will see in the following chapter, Zabarella means this quite literally, inasmuch as he thinks that a single complete substance will contain hundreds of substantial forms for its various integral parts. In general, different theories of the soul and its powers, of extension, of elemental mixture, and of the relationship between a whole and its parts led to a wide range of alternative views, and

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4 The classic source for promiscuous pluralism is Avicebron (Ibn Gabirol), *Fons vitae* IV.3, V.24—see Aquinas *In De an.* II.1 (Leomine 45.1, lines 258–64). For Latin sources prior to Aquinas, see Bazán’s detailed notes to Aquinas’s *Quaest. de anima* q. 9 (Leomine 24.1, re. lines 55–56, 66). Aquinas attacks this view most fully in *Quaest. de spir. creat.* 3c, where he traces the view to the assumption that each intellectual conception of a thing must have some real counterpart in the thing. Hence for every way we have of describing a thing, there will be a corresponding form. Henry of Ghent, a decade or so later, describes and criticizes much the same view (*Quod.*, IV.13 [ed. 1518, ff. 104r–6v]), as, later on, do Gregory of Rimini (*Sent.* II.16–17.2, *Peter of Ailly* (Tract. de an. ch. 1, p. 9), Paul of Venice (*Summa phil. nat.* V.5 concl. 2), and the Coimbrans (*In Gen. et cor.* I.4.19). The most prominent scholastic defender of this sort of link between concepts and substantial forms is John of Jandun. See, *e.g.*, *In Phys.* VII.8, *In Meta.* II.10, and *De pluralitate formarum*: “si non esset alia forma substantialis per quam homo est animal et per quam homo est homo, non esset alius conceptus hominis ut homo est et ut animal” (in MacClintock, *Perversity and Error* p. 158 n. 27).
there was never, all the way into the seventeenth century, anything approaching consensus over these issues.

25.2. Unification Strategies I: Unitarianism

Unitarians advance a huge, baffling array of arguments. Many of these, on their face, seem too dependent on contentious principles of Thomistic metaphysics—such as the pure potentiality of prime matter—to be persuasive. Ultimately, though, the case for unitarianism rests largely on the claim that only this form of hylomorphism will yield genuine substantial unity. Zabarella, for instance, would describe this argument as “that which above all else is offered against this [pluralist] position, and that seems to have persuaded many” (De rebus nat., De gen. ch. 2, col. 398). Aquinas sets the argument out with characteristic clarity and concision:

One thing *simpliciter* is produced out of many actually existing things only if there is something uniting and in some way tying them to each other. In this way, then, if Socrates were an animal and were rational in virtue of different forms, then these two, in order to be united *simpliciter*, would need something to make them one. Therefore, since nothing is available to do this, the result will be that a human being is one thing only as an aggregate, like a heap, which is one thing *secundum quid* and many things *simpliciter*. (Quaest. de an. 11c)

Aquinas wants to distinguish between what is one thing in the fullest sense (*unum simpliciter*) and one thing in a secondary, derivative sense (*unum secundum quid*). A heap is an egregious case of the latter; a less obvious case would be pale Socrates, which is an instance of the sort of thick substance (the substance with its accidents [§6.1]) that scholastic authors agree is not one thing in the fullest sense. So Aquinas is focusing on Socrates himself, conceived thinly, and contending that even such an entity, which is after all a paradigmatic case of a genuine unity, counts as truly one thing only if it is nothing more than a composite of prime matter and a single substantial form. If there were multiple substantial forms, the argument here goes, then there would need to be something further, above these forms, to make them one. But “nothing is available to do this” (line 4).

Although this is a relatively detailed instance of the sort of argument Aquinas makes over and over for his unitarian position, it is nevertheless all too compressed to be really persuasive. To see the force of his position, two crucial issues have to be explored further. First, just how is it that a single substantial form, together with prime matter, constitutes a genuine unity? Second, why exactly could multiple substantial forms not yield this same result? I will return to this second question in §25.4. Here I consider the first question. Although the core idea is present in Aquinas, later scholastic treatments bring out the issues both more explicitly and in greater detail. By far the most detailed discussion I know of is Suárez’s, whose exhaustive discussion of substantial form in the fifteenth of his *Disputationes metaphysicae* (1597) is very clear about one kind of basis for

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this argument from unity. As we should expect given the discussion of the previous chapter, Suárez focuses on the physical aspect of substantial form, and develops the argument from unity in that way. The case for unitarianism can be made, he argues, on the basis of the same considerations used to argue for substantial forms in the first place, and in particular on the notion that “all the faculties and operations of a natural being are rooted in one essential principle” (Disp. meta. 15.10.64—quoted at greater length in §24.4). This line of thought leads directly to unitarianism. For if a single substance were to contain multiple substantial forms, then we could not say that its various properties are “rooted” in a single source. Some features of the thing—even some essential features like corporeality and rationality—would have their root in one substantial form, and some in another, and there would be no one principle ruling over the whole. Hence he says that as soon as we accept that substantial unity requires this kind of tight connection, we can conclude that “the plurality of forms is entirely alien to the constitution of nature” (ibid.).

Physical considerations such as these interact with a more metaphysical version of the argument from unity, grounded in substantial form’s role in individuating substance. We saw in §24.2 how substantial form accounts for both the synchronic and the diachronic identity of a whole substance. The theory is supposed to do more than account for the identity of the whole substance, however; it is also supposed to account for the identity of each part of a substance. All parties to the dispute agree that the substantial form of a substance informs every part of a substance, making each of those parts be a thing of a certain kind. So on the unitarian picture, since there is just a single substantial form, that form can be understood to “rule over” (Suárez’s phrase) the whole substance not just as its physical cause, but as that which, by informing each part of the substance, gives that part its identity. This, for Aquinas, was one of the defining features of substantial as opposed to accidental forms: “both the whole and the parts take their species from it, and so when it leaves, neither the whole nor the parts remain the same in species. For a dead person’s eye and flesh are so called only equivocally” (Summa contra gent. II.72.1484; see Aristotle, De an. 412b20–22).

This more metaphysical argument for substantial unity, already important in Aquinas, would be developed in various ways by later authors. Buridan, for instance, uses such considerations to deal with a pluralist argument for postulating a substantial form for each sub-structure within a living body. According to his opponent—advancing a line of argument we will consider more closely in the following chapter—the integral parts of a substance are themselves substances, and so require their own substantial forms. This must be so even in the case of living things, the argument goes, because the parts of an animal remain apart from the soul. Buridan replies by appealing to the functional character of terms like ‘bones’ and ‘nerves’:

These are names for offices, like ‘dean’ and ‘prefect.’ Thus Aristotle says in many places that those names are necessarily defined by the tasks (opera) to which they are assigned and as they require various complexions of qualities and various qualities and shapes on account of the various offices to which they are assigned. . . . It can be granted, however, that in the case of dead things the names ‘bone,’ ‘flesh,’ and ‘nerve’ are used as substance terms, because they no longer connote a task nor are they names for offices. And so in Metaphysics VII [1035b22] and Meteorology IV [389b29] those names are said to be equivocal when used for the living and the dead. Thus it is certain that if in something alive the flesh is animated and later flesh gets pointed
to in something dead, it is not true to say of the flesh in the living thing that it is the same as what was pointed to in the dead thing, since what is animated will never be the same as what is not animated. It is, to be sure, possible that the same or a similar mixture remains in something living and in something dead, but it does not follow that therefore the same substantial form remains. (In Gen. et cor. I.8 ad 4)

This passage is particularly useful because it makes clear just how Buridan understands the metaphysical status of such functional parts. They do not supervene on the primary-quality mixture that gives flesh, say, its various sensible qualities (§21.2)—this gets ruled out when Buridan remarks that “the same or a similar mixture” might remain before and after death (lines 11–12), and yet the part would not remain. And it of course does not matter that we are inclined to speak in both cases of ‘flesh’ or ‘bones.’ Those usages are equivocal, Buridan insists, appealing to Aristotle’s principle of homonymy in such cases.6 What matters—that by which such parts are “necessarily defined” (line 2)—is the function that these parts play in a living thing. Although bones and other parts require a certain sort of elemental complexion in order to play their assigned role (lines 2–4), it is their playing that role within a living thing that gives them their identity. Hence ‘flesh’ is equivocal in living and dead things, because “what is animated will never be the same as what is not animated” (lines 10–11).

Based on these considerations, Buridan rejects the notion that the various integral parts of a substance must have their own substantial forms. If that were right, then these parts could exist independently of the whole organism, and their functional role in the system would no longer be necessary. To the objection’s claim that we grasp substances on the basis of accidents (§7.1), and so should treat the very different accidents of flesh versus bone as grounds for a difference in substance, Buridan grants the methodological principle, but denies that it always requires postulating distinct substantial forms: “a difference of accidents in the same supposit implies only that the substantial form is organized so as to be capable of various operations requiring different instruments of different complexions” (ibid.). Although Buridan does not explicitly use this sort of functional argument to argue for the greater substantial unity of the unitarian account, he is in effect making just that connection. The parts of substances are unified, he here contends, by the sorts of functional interrelations that make it impossible for those parts to endure without the whole. To treat a substance as a composite of multiple substantial forms would be to violate this unity, because it would then be possible for some parts of a substance, with their distinct substantial forms, to exist apart from the rest of the substance.

It is an intriguing feature of this more metaphysical development of the argument from unity that it might run independently of the physical aspect of substantial form described in the previous chapter. One could reject that physical aspect as empirically false—on the grounds that there is no such centralized power within a substance—and still think that any genuine substance requires a form of some more abstract kind, one required not for a complete physical explanation of the universe, but for a full metaphysical understanding of how things are. This, in effect, was Leibniz’s view

6 See Meteor. IV.12, 389b11–390a19; De an. II.1, 412b20–22; Metaphys. VII.10, 1035b22–25, and the discussion in Shields, Order in Multiplicity ch. 5.
and something like it might be endorsed by the modern Aristotelian. It is not, however, how scholastic authors seem to conceive of the situation. For them, it is the physical aspect of substantial form that accounts for its metaphysical role in individuating a substance and its parts. This is apparently so even in Buridan. Although his remarks above are not perfectly clear about why a substantial form should be tied to the functional structure of a complex organism, he is elsewhere very clear about the concrete, causal role played by such forms (§24.4). I take his view here, then, to be that the substantial form holds a substance together by being responsible for the varying elemental mixtures of a thing’s distinct parts, and for the way those parts are organized. In effect, then, it is because the substantial form plays this organizing causal role that those parts are capable of certain functions. The proper function of bone may not supervene narrowly on its elemental mixture, but such facts do supervene on the complex of elemental mixtures that constitutes the whole organic body, a structure that in turn arises from the substantial form.

Whatever the relationship between these two ways of developing the argument from unity, their conjunction makes for an extremely robust account of why substances are one thing in a special sense. For the unitarian, both the whole substance and each of its parts and intrinsic properties flow from a single physical cause, and are sustained in existence for only as long as they remain part of that substance. The parts of such an entity are, in a very strong sense, inseparable from the whole. Hence material substances, despite their complexity, are unified to a degree that justifies their traditional status as unum per se, or unum simpliciter. Indeed, short of perfectly simplicity, it is hard to conceive of a more robust form of unity.

25.3. Generation and Corruption Puzzles

Before considering the lesser sort of substantial unity attained through pluralism, it will be good to understand why these authors were driven to reject unitarianism in the first place. They too advance an overwhelming range of both philosophical and theological arguments. Almost all of these arguments, however, are variations on a single complaint: that the unitarian account makes substances too unified, and so results in an implausibly rigid conception of change.

Consider Scotus. He concedes that, in the absence of reasons to the contrary, the unitarian account is preferable—not because of any argument Aquinas gives, but simply because it is more parsimonious.7 There is, however, reason to prefer pluralism: the fact that the body of a living thing can exist without the living thing. This entails that the soul of a living thing can go out of existence while the form by which the body is a

7 Naturally, Ockham was not the only or even the first scholastic to make arguments from parsimony. Scotus remarks of the argument from parsimony for unitarianism that it “plus valet omnibus precedentibus” (Ord. IV.11.3; Wadding VIII n. 27), where the preceding arguments were all drawn from Aquinas. Earlier still, Henry of Ghent remarks that “omnia enim operationem attribuendum composito per plures formas aequo conveniuntur positum ponere per unam simplicem, etiam in homine, nisi in ipso alius repugnaret, ut infra videbitur. Quod autem potest fieri per unum natura nunquam agit per plura, quia nihil agit frustra neque deficit in necessariis, secundum Philosophum” (Quad. IV.13 [ed. 1518, I:106rS]; see also ibid., I:106vS). Not everyone, however, accepted that parsimony had a role to play here. Zabarella’s remark that if four then why not a hundred, as quoted earlier in the main text, seems to disavow such considerations.
body remains in existence. Applying the indiscernibility of identicals (§6.2), Scotus concludes that “if this is, and that is not, then they are not the same entity in being” (Ordinatio IV.11.3 [Wadding VIII n. 54]). Pluralists make this argument over and over, attacking the unitarians for their insistence that the death of a living thing entails that all its parts go out of existence. Scotus and many others regard this as absurd. How could a body that seems to have so many of the same accidental properties have undergone so thorough a substantial change that none of its parts or properties are in fact the same? Scotus simply takes it for granted that this is false, remarking without argument that “though the form of the soul does not remain, the body remains” (ibid.). Others tried to motivate this claim in various ways. Zabarella, for instance, appeals to the way that herbs and plants retain the same flavors and smells long after they are picked (De rebus nat., De gen. ch. 2, col. 397). Is it really plausible to think that, in fact, these plants have numerically distinct sensible qualities, supervening on numerically distinct primary qualities, arising from a distinct substantial form? Post-scholastic authors sometimes appeal to these arguments as an indictment of substantial form in general, but their true target is the unitarian version of the theory.

Does the unitarian have a reply? Richard Cross describes the claim that a body remains the same through death as “a fairly safe empirical observation” (Physics of Duns Scotus p. 56). The only thing we can observe in such circumstances, however, is that qualitatively the same body remains through death. That is a fairly safe empirical observation, but it is not what the pluralists need. They need to establish that numerically the same body remains through death. That, however, is a metaphysical claim, and it is not clear that any observations could settle the matter. As Richard Knapwell put it very early in this debate, in his defense of Aquinas from circa 1283, it is reason alone that sees the need to distinguish between the body before and after corruption: “the senses, through apprehending similar accidents (these being the only things that make an impression on them), cannot go deep enough to recognize that distinction” (Correctorium art. 32, p. 153). This suggests a general strategy for the unitarians: they can insist that their thesis is a purely metaphysical one, and deny that any such empirical observations directly count against it. On this approach, the debate over substantial form takes on the aspect of a debate over diachronic identity. Just as no one arguing over personal identity would appeal to such things as hair color or personality traits, so the unitarian might regard as irrelevant the fact that the skin and eyes of a corpse look the same. What matters, according to the unitarian, are metaphysical considerations regarding substantial unity.8

Whether or not the advantages of such unity are worth the price is something I will try to get clearer about as this chapter progresses. There should be no mistaking, however, just how high the price is. The unitarian must hold that, for any substance,

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8 On numerical identity as a question for reason rather than the senses, see also Fonseca, In Meta. VIII.1.2.6 (IV:458bbBC): "Ad septimum dices in eis quae non sensu sed ratione examinanda sunt, quales est identitas et diversitas numeralis rerum, maxime vero simuliam... ut in duobus eiusdem gallinae ovis omnino similibus, si quis successice ea videat, neque enim evi visionis ea poterit numero distinguere, quae tamen diversa esse ratione demonstrabunt ei, qui noverit eam gallinam bis tantum perperisse et ovum quod idem homo prius viderat ab alio comestum esse."

There was a difference of opinion regarding whether the cadaver should be thought to have just one new form of the whole or many separate substantial forms. The former was Suárez’s view (Disp. meta. 15.10.15), the latter Zabarella’s (De rebus nat. De gen. et int. ch. 3, col. 401E), on the grounds that a corpse is not a substance. Leibniz would later make a similar claim, in correspondence with Arnauld (Phil. Schriften II.75; tr. Ariew and Garber p. 78).
when it is corrupted, nothing other than its prime matter remains. My body ceases to exist when I cease to exist. If a stone goes through substantial change when it is split in half, then neither “remaining” half in fact remains. Each half, and every part of each half, is a wholly new entity. The same issues arise for the generation of substances. Whenever stuff comes together to compose a new substance, that stuff (aside from its prime matter) must cease to exist. All of this looks counterintuitive. Pedro Fonseca tries to make a virtue out of these results, remarking that the pluralist must treat a living thing’s death not just as a single corruption, but as one corruption after another, such that (for instance) first the thing ceases to be rational, then it ceases to have nutritive operations, then it ceases to be a body at all. The same will be true of generation, inasmuch as, for the pluralist, “there are as many generations of substantial things as there are substantial forms introduced to denominate the whole thing” (In Meta. VII.12.1.2 [II:364aD]). Fonseca means this to sound odd, but it is in fact a far more intuitive way of thinking about generation and corruption, because it recognizes our inclination to say that things ordinarily come into and go out of existence piece by piece, rather than all at once. To think otherwise—to think that substances come and go as a whole without remainder (aside from prime matter)—one would have to be in the grip of some sort of powerful metaphysical thesis. And so it is. The unitarian is driven to this counterintuitive result by the idea that genuine substances must be robustly unified, in such a way that none of their parts (other than prime matter) is capable of surviving apart from the whole. This immediately entails the consequences so derided by pluralists.9

One way to moderate the unitarian’s position here would be to delimit sharply the range of things that count as substances. This is a natural thought to have at this juncture, because once one gives a rigorous account of what substantial unity involves, it is to be expected that some traditional substance candidates fall by the wayside. Certainly, artifacts like chairs do not count (§24.5). It may be, too, that a stone is not a substance, or that an alloy like bronze is not a substance, or that at any rate not just any lump of bronze is a substance. Sometimes it is even suggested that the Aristotelian should recognize no non-living substances at all. Of course, if the end result is that nothing counts as a substance then the unitarian agenda will have been self-defeating. But it is clear that living things, at any rate, are supposed to be paradigmatic substances, and so the unitarian has to accept these implausible all-or-nothing results at least in those cases. Moreover, scholastic authors seem committed to the substantiality of

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9 Aquinas describes the sequence of generations and corruptions that lead to an animal as follows: “cum generatio unius semper sit corruptio alterius, necesse est dicere quod tam in homine quam in animalibus alius, quando perfectior forma advenit, fit corruptio prioris: ita tamen quod sequens forma habet quidquid habebat prima, et adhuc amplius. Et sic per multas generationes et corruptions pervenitur ad ultimam formam substantialiem, tam in homine quam in alius animalibus” (Summa theol. 1a 118.2 ad 2). The view was quite widespread. See also, e.g., Gregory of Rimini, Sent. II.16–17.2, p. 345: “sensitiva prius introducitur et deinde, facta ulteriore dispositione ad intellectivam, simul corruptitur sensitiva et infunditur intellectiva, sicut dicendum est de alius formas substantialibus quae praecedunt animam intellectivam, et similiter sensitivum et vegetativum in materia, quae disponitur ad intellectivam.” Even pluralists would be likely to agree with these remarks, since only the most profligate pluralists postulate a distinct, overlapping substantial form for each stage of embryonic development. I discuss Aquinas’s view, in the context of the modern debate over abortion, in Thomas Aquinas on Human Nature ch. 4.
non-living things. They take for granted that the genus *substance* divides into *living* and *non-living*, and indeed *stone* (*lapis*) is a paradigmatic example of the latter. Now perhaps *lapis* is merely a genus term extending to various kinds of minerals, which would leave open whether a lump of stony stuff counts as a substance, or whether instead a lump of stone is an aggregate composed of myriad micro stones. One can only speculate, or at best draw inferences from various other theoretical commitments, because—amazingly—scholastic authors made no sustained attempt to come to grips with the problem of what non-living substances there are.\(^\text{10}\)

Whereas unitarianism invites a narrow construal of the category of Substance, pluralism looks most attractive when viewed as a broader strategy for explaining change over time. Intuitively, it seems that in many cases where a thing goes out of existence, part of that thing remains. An animal dies, but its body remains. A statue is smashed, but the clay remains. Modern philosophers are tempted to deal with these sorts of cases by holding either that there is no real substantial change (§28.4) or that in fact there were two substances overlapping for a time (the statue *and* the clay), only one of which remains. The first strategy might be tenable in some cases, such as artifacts, but seems implausible in others (such as living things). The second strategy seems to diminish the unity of substance to a degree that courts absurdity. Dogs and statues are not one substance but two? or maybe more? Pluralists are able to say something less strange: that there is only one complete substance, but that it is composed of parts capable of surviving apart from the whole. The animal is a single substance, then, and it goes out of existence when it dies, but nevertheless part of it endures, in virtue of its corporeal form. So whereas the unitarian collects the whole substance at a single focal point, and so makes substantial change an all-or-nothing affair, the pluralist conceives of substantial identity as turning on two axes, around one or the other of which the substance’s various properties revolve. This has its appeal. There certainly are cases, like the statue and the clay, where we want to be able to say that it endures in one aspect (as clay) but not in another (as statue). The unitarian purposefully rejects the very possibility of such an analysis, insisting that true substances cannot be divided up in this way. If the clay can survive the destruction of the statue, then that shows that the statue was not a substance at all, and that its shape (or whatever it is that made it be a statue) is merely a passing accident. Inasmuch as all the scholastics are in agreement that artifacts are not substances, the statue–clay case is of merely illustrative value for

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\(^{10}\) Albert the Great makes an interesting remark about the status of stones as substances: “De formis autem quae sunt substantiales lapidum, dubitare dementis esse videtur, quoniam visus certificat de his quod coagulati sunt omnes, et materia in ipsa ad speciem certam est determinata” (*De mineralibus* I.1.6; tr. Wyckoff pp. 24–5). He goes on to contrast their status with that of clouds, rain, and snow, which evidently arise only because of “dispositiones elementorum.” As for the character of these substantial forms, “sunt autem hae formae secundum plurimum innominatae, sed tamen differentiae earum innuuntur diversis nominibus lapidum, cum vocantur tofus, pumices, silices, marmor, saphirus, smaragdus, et huiusmodi: quae, cum nobis occultà sunt, ideo propria diffinientia lapidum non habemus nisi circumlocuendo accipientio accidentia et signa loco diffinientium” (ibid.). This suggests that *lapis* refers to a class of minerals, rather than to rocky stuff of a certain shape.

The narrow conception of what counts as substances for the scholastics is taken for granted by Ayers, who treats “a piece of stone” and “a lump of lead” as accidental unities (*Locke* II:127) and suggests that for Aristotelians only living things will count as genuine substances (II:229). I have elsewhere argued that Aquinas is implicitly committed to allowing only minimal-sized bodies as substances, among non-living things, which is to say that the only piece of lead that counts as a substance is a piece so small that, if it were any smaller, it would cease to be lead (*Thomas Aquinas on Human Nature* ch. 3).
how pluralism was in fact deployed. Modern-day Aristotelians, however, might wish to
deploy the view more broadly.\footnote{Zabarella provides a particularly clear example of how pluralism amounts to an alternative strategy for accounting for the multiple identities of substances—as, e.g., statue and clay. Against the Thomistic singular existence thesis (§26.5), he responds that “licet unius rei unum sit esse, per hoc tamen non stare quin eadem res sit et corpus et mixtum et vivens et animal et homo, licet alid sit esse hominem alid sit esse corpus et caetera” (De rebus nat., De gen. ch. 2, col. 398). Such distinct existences are what allow the pluralist to account for the variable identity conditions of a thing qua body or qua animal or qua human. Still, as Zabarella stresses, it is a single thing, under a single unifying, specifying form.}

The dispute between unitarians and pluralists lends itself to these sorts of metaphysical musings, but in practice—as I have been stressing—the debate’s orientation was physical (§24.4). Viewed from this aspect, the situation for the unitarian becomes much worse than I have yet indicated. Metaphysically, the problem for the unitarian is simply to justify the implausible claim that post-corruption remnants and pre-generation ingredients, despite being qualitatively identical to the substance that was or will be, are in fact numerically distinct. Substantial forms are not, however, merely abstract metaphysical principles; they are also (or instead) the principal causal explanations of the various intrinsic accidents of a substance. Accordingly, the unitarian must account for why the corpse has accidental properties that are even \textit{qualitatively} the same as those of the living body. If the living body’s accidents were a product of its substantial form, then it seems nothing short of miraculous that, without that form, the corpse retains so many exactly similar accidents.

This further dimension of the problem is especially clear in Ockham’s discussion in \textit{Quodlibet} II.11. His principal argument for a further \textit{forma corporeitatis} in living things, beyond a rational and sensory soul, goes as follows:

1. “Numerically the same accidents as before remain when a human being or brute animal dies.”
2. “Accidents do not naturally migrate from subject to subject.”
\therefore 3. “Those accidents have numerically the same subject.”
4. “That subject is not prime matter.”
\therefore 5. “Some prior form remains” [actualizing the enduring body that is the subject of these accidents].
6. “Not the sensory soul” [since the animal has died].
\therefore 7. “The form of corporeity remains.”

The inferences are unexceptionable, and most unitarians would accept all the premises but the first. Ockham knows that he has to argue at some length for that first premise, and his argument is cast entirely in terms of the impossibility of any physical explanation for the generation of numerically distinct but qualitatively identical accidents:

If the accidents are distinct [i.e., if the first premise is false], then at least they are of the same kind as the accidents of the living animal: this is clear from the fact that they are so much alike that one cannot distinguish between them. So if these accidents are new, then I ask what caused them. Not air or any other element, or a heavenly body, because then every accident of every corpse would be of the same kind, which runs contrary to what we see. [This inference holds] because, given that these are natural agents, they by nature always cause accidents of the same character in subjects (\textit{passis}) of the same character. But matter is of the same character in every corpse. Therefore etc. (\textit{Quod.} II.11 [Op. theol. IX:162–3])
The argument continues on, ruling out other possibilities, but this is enough to get a sense of how the debate goes. Ockham wants the unitarian to give a physical explanation for why a corpse has accidents that are indistinguishable from those of the living body. If numerically the same accidents could endure, then this would not be so puzzling, but since there is no enduring subject for those accidents, the accidents cannot endure. Hence Ockham demands an explanation for the otherwise amazing coincidence that the body of a corpse looks very much like the body of a living thing. Could there be some explanation in terms of primary qualities, or a heavenly body? (lines 4–5) Nothing like that will work, because—remember—for the unitarian the only thing that endures through the corruption of the substance is prime matter. But of course “matter is of the same character in every corpse” (lines 7–8). Hence we can apply the fundamental principle that in cases of natural agency, if the agent is the same and the subject is the same (and, tacitly, the surrounding conditions are the same), then the effect will be the same (lines 6–7). The unitarian needs one cause to account for the distinctive enduring features of one corpse, and another cause to account for the distinctive enduring features of another corpse. What plausible option is there, other than to suppose that something more than prime matter endures through substantial change? This is another example of how the demand for an underlying substratum of change, first encountered in Chapter 2, becomes a kind of Trojan horse for a much more robust ontology. The considerations that support the need for an enduring substratum tend to require not just bare, indeterminate matter, but ingredients of a certain kind, suitable for bridging the gap between the thing corrupted and the thing generated. The strictest unitarians resisted all such arguments, but the pluralists thought that such “ingredients proofs” showed why something more than bare prime matter endures through substantial change.12

Pluralists retained an abiding animosity toward what they regarded as the absurdity of the unitarian position. Peter John Olivi, an early critic, referred to it as a “brutal error” (Summa II.71, II:637). Franco Burgersdijk, 350 years later, was still lambasting it as “utterly absurd” (Collegium physicum 20.9).13 Even so, more temperate authors

12 Adams, William Ockham ch. 15, provides a full account of Ockham’s arguments for pluralism, including the theological arguments. See also Zavalloni, Richard de Mediavilla.

The text of Ockham’s main argument in Quad. II.11 for a forma corporeitatis runs as follows (inserting a full stop at one crucial juncture where the editors seem to have misunderstood the logic of the argument): "mortuo homine sive bruto animali, remanent eam accidente numero quae prius; igitur habent idem subiectum numero. Consequentia patet, quia accidens naturaliter non migrat a subiecto in subiectum. Sed illud subiectum non est materia prima, quia tune materia prima immediate reciperef accidentia absoluta, quod non videtur verum; igitur remanet aliqua forma praecedens, et non sensitiva; igitur corporeitas." The argument is discussed in more detail in Adams, William Ockham II:649–50.

Cajetan responds in some detail to arguments such as Ockham’s at In De ente q. 18, contending that the agent that corrupts the old substance is what causes the new substance to have qualitatively similar features. This is perhaps plausible in some cases, but strikes me as clearly untenable in other cases, such as the corruption of living things. Adams decisively remarks of such a view that “the same agent may use the same instrument to kill a black and white cow and a brown cow, and yet the accidents of the first corpse will differ in species from those of the second” (William Ockham II:650).

13 Seventeenth-century anti-scholastics sometimes latch onto the arguments against unitarianism as an argument against substantial forms in general. See, e.g., the Boate brothers (Phil. nat. reformata 1.3.32), although they are aware that not all scholastics are vulnerable to the objection: “Sane res haec de qua nunc agrimus (nimrum unamquamque partem in cadavere esse idem, eiusdemque naturae, ac erat durante vita) adeo est clara ut multis ipsorum Peripateticorum, quibus saltum aliqua sensuum et rerum phaenomenon cura, eam negare puduerit” (p. 104). They go on to refer specifically to the pluralism of Zabarella, Ghent, and Scotus. Boyle would later use an example just like Zabarella’s—he appeals to the lingering flavors of fruits plucked from a tree (Origin of Forms [Works V:348; Stewart pp. 63–4])—in arguing against
recognized the obscure and doubtful character of this debate. Ockham, for instance, prefaces the above argument with the remark that although he endorses pluralism, “this is difficult to prove through reason.” The core problem is the unobservability of substantial forms, which can be grasped only inferentially, via accidents, in just the way that the thin substance as a whole can. If anything, however, this methodological observation makes things worse for the unitarian, since if we let the accidents be our guide, we should certainly be pluralists. Even Suárez has to admit that “we experience substantial form only from its effects, or accidents. But often there is no effect that evidently points to the introduction of a new form after the earlier one leaves, as with the death of a human being” (Disp. meta. 15.8.16). Suárez in fact considerably understates the difficulty for his side: it is not just that there is no evidence of a new substantial form after death, but also that there are many signs of the presence of the same form. The same sorts of arguments considered in §24.4 as evidence for the existence of substantial forms—based on the endurance and stability of accidents over time—point toward there being multiple such forms.

For the strict Thomist, there is no obvious way to handle these difficulties regarding substantial change. At the same time, the metaphysical advantages of unitarianism were clear. Unsurprisingly, then, many scholastics gravitated toward a non-Thomistic version of unitarianism that sidesteps these generation and corruption puzzles. To escape an argument like Ockham’s, one must find a way to allow numerically the same accidents to endure through generation and corruption. This would remove the need to answer Ockham’s pivotal question (lines 3–4 above): “if these accidents are new, then I ask what caused them.” To retain numerically the same accidents, without abandoning unitarianism, one must deny either premise 2 or premise 4 above. One might suppose that real accidents, on their robust, later scholastic understanding, should be able to migrate from subject to subject, contrary to premise 2. I am, however, unaware of any scholastic who was willing to countenance this as a naturally occurring event. So this leaves premise 4, and the possibility that accidents might endure through substantial change by inhering in prime matter. This became an increasingly prominent position among later scholastics, embraced at first by independent fourteenth-century authors such as Peter Auriol, Gregory of Rimini, and John Buridan, and ultimately given the imprimatur of orthodoxy by Suárez and other Jesuits. As we saw in §§6.3–4, this approach faces various difficulties, but scholastics increasingly saw its advantages as outweighing its disadvantages, inasmuch as it offered a way to account for the continuity of change. Thus Rimini, after quoting Ockham above verbatim, replies that “I grant that many accidents often remain numerically the same, and in the same subject, and I say that matter alone is their subject” (Sent. II.16–17.2, V:352). One could be a unitarian then, like Rimini, and still allow accidents to endure through substantial change. Indeed, even a pluralist like Zabarella takes this view, because for even the pluralist there will be cases—especially substantial change involving non-living things—where none of the substantial forms endure, and yet there is some continuity in sensible qualities. From the fourteenth century forward, the strict Thomistic doctrine according to which nothing other than prime matter endures through substantial forms. Of course Boyle would not have welcomed the response that we therefore need multiple substantial forms; he seems entirely unaware of the unitarian–pluralist debate.
change is not a popular position. Here, and elsewhere, it is good to keep in mind that Thomism—contrary to what is often supposed—was always a minority view during the scholastic era.14

25.4. Dualism and Mind–Body Unity

The advantages of pluralism are clear enough. From a physical point of view, it better accounts for the seemingly gradual process of substantial change. From a metaphysical point of view, it offers a powerful tool to explain the seemingly multiple foci of substantial identity—being both statue and clay, human being and body. Pluralism remained controversial, however, because of its difficulties in accounting for substantial unity. The tradeoff is clear enough: either one can have robust substantial unity, at the cost of a rigidly all-or-nothing conception of substantial change, or one can have a flexible, layered conception of substantial change, but at the cost of substantial unity. The ideal solution, if it could be had, would be to find room for robust substantial unity within the pluralist framework. The following section will take up that issue, but it will be helpful first to highlight the difficulties of pluralism by considering in more detail the special case of human beings, and the way pluralism threatens to lead to one or another unacceptable version of dualism.

Let ’dualism’ refer to the view that the world in general, and human composites in particular, contain two fundamentally distinct kinds of entities—material and immaterial, or corporeal and spiritual. One should be cautious in supposing that such binary distinctions are fundamental for scholastic authors in the way they plainly are for, say, Descartes, but in some sense it is surely true that almost everyone throughout our four centuries is a dualist in the sense just defined. (Hobbes is the outstanding exception [§16.2].) Although dualism so conceived is not much in dispute during this time, there are forms of dualism that were highly contested. Let ’platonic dualism’ refer to theories on which human composites contain two substances, a mind and a body, each of which is in its own right a complete entity, and whose composite is a mere aggregate. In scholastic terms, the platonist dualist treats the human composite as an accidental unity—an ens per accidens rather than an ens per se. This might mean that the soul alone, rather than the soul–body composite, is the human being, the person, or the self. Alternatively, the platonist dualist might identify the human being (the person, the self) with the composite, which would imply that human beings (persons, selves) have at best derivative existence. In any case, for the platonist dualist, the fundamental entities, the entia per se, are soul and body.

Whether or not this “platonic” dualism is properly and truly Platonic, it was certainly the view attributed to Plato by scholastic authors, who of course generally reject it in

14 The extent to which one can rightly speak of Thomism among later scholastics remains a surprisingly neglected topic. Contrary to what is often said, the Jesuits are not Thomists, and when they discuss the Thomists are not including themselves. One gets an interesting perspective on the status of Thomism in Oxford in the later fourteenth century from Wyclif’s criticisms of those who blindly accept the “scripta Thomae” and assume that “si ipse sic asserit, ergo verum” (De eucharistia ch. 5, p. 158). Wyclif urges that in philosophical matters it is better to follow Scotus: “Nam Doctor Subtilis cui plus credendum est in speculationibus…” (ibid.).
favor of Aristotelianism. In general, as we will see, only a few authors during our period expressly defend platonic dualism; the view looms more as a threat to be avoided than as a competing alternative. This is so partly for theological reasons: although in principle platonic dualism seems compatible with Christianity, in practice this possibility was not accepted. The Council of Vienne (1312) declared it a heresy to hold that “the rational or intellective soul is not per se and essentially the form of the human body” (§20.2), and this was understood to prohibit platonic dualism. Moreover, quite apart from theological considerations, the disreputability of platonic dualism is obvious enough to commonsense. We are well acquainted with the case of human beings, and it seems seriously counterintuitive to regard ourselves as merely an aggregate of two distinct substances, each of which is itself an entity in some more basic sense. To be sure, human beings have parts, integral and perhaps also metaphysical. But we regard those parts as subsumed under a larger whole, and we regard the whole as that which exists in the primary sense. Still, disreputable as it is, this form of dualism constantly looms over discussions of soul and substantial form throughout our four centuries. And among the many aspects of the mind–body problem during the seventeenth century, none is more serious than the problem of how to unify the mind–body composite without the metaphysical apparatus of scholasticism.

No scholastic author, so far as I know, embraces platonic dualism. Some views, however, are more prone to the risk than others. Least at risk are the unitarians. Although the unitarian’s rational soul is a substance, capable of existing on its own, there is no corporeal substance—no body—to serve as its counterpart. Instead, for the unitarian, the counterpart of the rational soul is prime matter, which is not a body at all, but the stuff that, together with a substantial form, constitutes a body. Strictly speaking, prime matter falls into the category of Substance (§26.1), but since such matter cannot exist without form, there is no temptation to regard the human composite as a mere aggregate of complete, independent substances.

Pluralism, in contrast, inevitably flirts with platonic dualism. The body informed by the rational soul not only is fully actual, but also is naturally capable of existing apart from the soul. As we have seen, this is a result that the pluralist wants, but one that

15 The locus classicus for the early scholastic understanding of Plato’s own form of dualism is Nemesius, De natura hominis, a work wrongly ascribed to Gregory of Nyssa: “Therefore Plato . . . did not hold that an animal is made up of soul and body, but that it is the soul using the body and (as it were) wearing the body. But this claim raises a problem: How can the soul be one with what it wears? For a shirt is not one with the person wearing it” (ch. 3, pp. 51–2). Aristotle refers in passing to the sailor–ship model of soul and body, but without ascribing it to Plato and even without clearly rejecting it (De an. 413a8). The Condemnations of 1277 condemns the thesis “quod intellectus non est actus corporis, nisi sicut nauta navis, nec est perfecto essentialis hominis” (n. 7).

For a detailed discussion of the “Platonic” option, see Aquinas, Summa contra gent. II.57. See also Arnauld’s Fourth Set of Objections to the Meditations, which characterizes as “Platonic” the view that “nilh corporeum ad nostram essentiam pertinere, ita ut homo sit solus animus, corpus vero non nisi vehiculum animi; unde hominem deinfinit animum utentem corpore” (VII:203). Notably, Arnauld acknowledges that Descartes rejects this view.

If any scholastic author approaches platonic dualism, it is perhaps Olivi, at Summa II.59 (II:525–6)—a text called to my attention by Calvin Normore.

16 Although the unitarians are dualists, it is misleading to say—involving modern terminology—that they are substance dualists. To be sure, they regard the soul as a substance, and they also regard human beings as composed of multiple substances, as the following chapter will discuss. What the unitarian crucially does not countenance is that there is any corporeal substance apart from the soul, which together with the soul constitutes a living thing. Apart from the soul, says the unitarian, no part of the human being exists. Pluralists, in contrast, clearly are substance dualists. For discussion focused on Aquinas’s case, see my Thomas Aquinas on Human Nature pp. 65–72.
immediately raises questions about substantial unity. Pluralists invariably reject plato-
ic dualism on the grounds that the rational soul is still a substantial form of the body, and so gives rise to a genuinely unified whole, \textit{unum per se} rather than \textit{per accidens}. Yet even if this is what the pluralist says, it is unclear just how much such talk explains. There is, moreover, a class of pluralists, beginning with Ockham, who face a special difficulty. On Scotus’s less problematic version of pluralism, the rational soul is responsible for all vital operations of the organism. In a very clear sense, then, it counts as a form of the body, given that it actualizes the bodily organs that sustain life (heart, lungs, eyes, brain, etc.). Pluralists who take Scotus’s line can therefore make some appeal to the physical aspect of substantial form that unitarians make so much of: that the soul–body composite is unified in virtue of the soul’s role as an internal cause. Ockham, in contrast, postulates a distinct sensory soul, and it is this soul that bears the responsibility for actualizing all of these animal operations. His rational soul is responsible only for the high-level cognitive and volitional operations that do not require an organ, making its status as the form of the body especially problematic. Subsequent pluralists split between these two kinds of view. Although Scotus’s position was influential, prominent authors like Oresme and Zabarella—although disagreeing about the total number of substantial forms to be posited—follow Ockham in limiting the rational soul to intellectual operations. Anticipating the terminological switch that Descartes would later bring into prominence, we might say that the rational soul, for these authors, is simply the mind. Indeed, Zabarella himself makes this terminological switch, preferring the term ‘mind’ (\textit{mens}) rather than ‘intellect’ or ‘rational soul’ in talking about these issues. Since such pluralists postulate both a sensory soul and a mind, I will call this view soul-and-mind pluralism, in contrast to Scotus’s body-and-soul pluralism.  

Ockham and other soul-and-mind pluralists stoutly insist that the rational soul actualizes the body, and so counts as the form of the body. But given that their account completely divorces the rational soul from its usual physical role in explaining the body’s various properties, it is quite unclear how far such an explanation goes. Such views were commonly criticized, indeed, for their inability to preserve the hylomorphic framework. Here, for instance, is Suárez:

If a sensory soul were to intercede [between matter and the intellectual soul], then the intellectual soul would be a pure principle of thought. A pure principle of thought, however, is not suited to inform the body. . . . Therefore for the rational soul to be a true form of the body, it must be the principle not only of thinking but also of the operations that are exercised by the body. (\textit{Disp. meta.} 15.10.25)

Suárez is claiming that soul-and-mind pluralists cannot account for the unity of the human composite in hylomorphic terms. This suggests that their view will inevitably...
lapse into platonic dualism—effectively, a *reductio ad absurdum*. But is this fair? To be sure, a rational soul conceived of along Ockham’s lines does not perform the functions of a substantial form as envisaged by the unitarian, either metaphysically or physically. But does this mean it cannot be a substantial form at all?  

Such charges are difficult to resolve because—as we have seen already in so many different contexts—there is no one clear notion of what it is to be a form. It is easy, in discussing such issues, to fall into a kind of Aristotelian mysterianism, treating talk of form and matter as a magical incantation that, simply by being invoked, but in ways we cannot understand, solves various philosophical problems. The risk is especially grave in the present context, where it is tempting to suppose that postulating form–matter composition immediately solves the problem of substantial unity. Nothing is more important to the study of our four centuries than to understand that this sort of hylomorphic talk is, by itself, JUST TALK. The range of possibilities for what it might mean for the soul to be the form of the body is so vast that the bare claim by itself is literally meaningless. If this is not yet clear, then consider that it is even possible to hold that the soul is the form of the body without supposing that the two together constitute a genuine unity. Daniel Sennert’s *Epitome naturalis scientiae* (1618), for instance, remarks that “no sane philosopher denies that the rational soul is the form of a human being,” but then goes on to observe that one might still regard it as merely an “assisting form” joined to the body as a sailor to a ship (VIII.1, p. 513). To rule that sort of thing out, one needs to choose one from the vast number of possible theories of how soul and body relate.

Hylomorphism does not do its work, then, by some sort of primitive, ineffable magic. When unitarians claim that the rational soul is the form of the body, they have—as we have seen—a very specific and well-developed account of exactly what this means, and why it accounts for substantial unity. When pluralists offer their own accounts of substantial unity, they owe us a similar story, and of course the same is true among post-scholastic authors. To treat the soul as the form of the body is one thing. To have a theory of soul–body unity is quite another.

### 25.5. Unification Strategies II: Pluralism

Pluralists devoted considerable ingenuity to account for substantial unity. As ever, we might begin with Scotus, who offers a particularly forthright discussion. He accepts that substances should have a special sort of unity, remarking that “it seems absurd” for there to be “no difference between a whole that is one thing *per se* and a whole that is one thing by aggregation, like a cloud or a heap” (*Ordinatio* III.2.2; Vat. IX n. 73). Whereas unitarians treat living things as a composite of soul and prime matter, on Scotus’s analysis they are a composite of soul and body—an *actual* body, actualized by another substantial form, a *forma corporeitatis*. Unitarians reject this approach, because

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18 Aquinas foresees the sort of difficulty that Ockham’s form of pluralism encounters: “cum intellectus non habeat determinatum organum in corpore, quo mediante exerceat operationes suas; ad quid uniretur corpori nisi esset eiusdem essentiae cum anima sensitiva?” (*Quod*. XI.5c). This succinctly captures why platonic dualism would become such a risk for both soul-and-mind pluralists and for post-scholastic dualists such as Descartes. Suárez discusses the issue of a pure principle of thought’s informing a body at more detail in his disputation on the angels (*Disp. meta.* 35.3.12).
the potentiality side of Scotus’s composite is already too actualized to admit of any further substantial union with another form. According to Scotus’s body-and-soul pluralism, however, the human composite is sufficiently unified provided that the soul stands as actuality to the body’s potentiality. Scotus criticizes Henry of Ghent’s version of body-and-soul pluralism for failing to unify human beings in this way, remarking that “out of two actualities, of which one is not in potentiality with respect to another, nothing can be produced that is one per se” (Ordinatio IV.11.3; Wadding VIII n. 39). Scotus, in contrast, can insist that human beings and other living things, despite their multiple substantial forms, are unified in just the way the unitarians want, by a single substantial form that actualizes and unifies the whole substance.

This is the jargon. The question is what it actually amounts to, as a theory of substantial unity. Characteristically, Scotus recognizes the question and boldly confronts it:

If you ask why there is one thing per se in one case more than in another, I reply that just as, according to Metaphysics VIII [1045a23–25], there is no question of why one thing is made from actuality and potentiality, except that this is actuality per se and that potentiality per se, so too there is no cause for why one thing per se is made from this actuality and that potentiality, either in things or in concepts, except that this is potentiality with respect to that, and that is actuality... The same is likewise true for one thing per accidens, for this is this and that is that, and so this is actuality per accidens and that potentiality per accidens. So from this and that is made one thing per accidens. (Ordinatio IV.11.3; Wadding VIII n. 53)

This is of a piece with Scotus’s broader pessimism regarding the possibility of deep philosophical explanations. In §24.1, we saw Scotus argue that the difference between substantial and accidental forms is basic and unanalyzable. Now we can see a consequence of that attitude: because Scotus thinks there is no analysis of what distinguishes substantial forms, he likewise is forced to conclude that there is no analysis of how substantial forms bring about substantial unity. That is just what substantial forms do. In support of this claim, Scotus appeals to an often-cited passage from Aristotle: “If, as we say, one is matter, the other form, in potentiality, the other in actuality, then the question will no longer appear to be puzzling” (Meta. VIII.6, 1045a23–25). Aquinas and other unitarians take this to mean that hylomorphism points toward an explanation of what gives substantial unity to a human being. The question gets answered, for the unitarian, in terms of their robust conception of substantial unity, physical and metaphysical. For Scotus, in contrast, the question no longer poses a difficulty because there is nothing more to be said. The question is not answered, because there is no question to be legitimately asked.19

19 Scotus’s appeal to substantial unity as a primitive fact, analogous to the case of heat, appears often in his work, as at In Meta. VIII.4 (Opera phil. IV n. 54), Ord. III.2.2 (Vat. IX n. 84), Sent. II.12.1 (Wadding VI nn. 12–15 [not in Ordinatio]), Lec. II.12 (Vat. XIX nn. 50, 67).

Cross praises Scotus for his frank and principled answer, remarking that “this is perhaps indicative of the general inability of substantial form to do any genuinely explanatory work... It seems to be the only philosophically principled answer that can be given to the question of the explanatory value of a theory of substantial form” (Physics of Duns Scotus p. 91). I hope to have shown that substantial forms have more explanatory value than Cross allows.

Scotus discusses the detail of his pluralist conception of unity at Ord. IV.11.3 (Wadding VIII n. 46): “Concedo quod formale esse totius compositi est principaliter per unam formam, et illa forma est qua totum compositum est hoc ens. Ista autem est ultima adveniens omnibus praecedentibus, et hoc modo totum compositum dividitur in duas partes essentiales, actum proprium, scilicet ultimam formam, qua est illud quod est, et propriam potentiam illius actus, quae includit materiam primam cum omnibus formis praecedentibus. Et isto modo concedo quod esse illud totale est completive ab una forma, quae dat toti illud quod est: sed ex hoc non sequitur quod in toto includatur praecepe una
Scotus’s verdict on the prospects for a theory of substantial unity is more pessimistic, or at least more frank, than that of other pluralists. Even in Scotus’s case, however, it is not exactly the case that there is nothing more to be said about substantial unity beyond the bare invocation of potentiality and actuality. Scotus thinks that we can no more explain why a given substantial form unifies than we can explain why the quality of heat heats. But just as there is quite a lot to be said about heat, so there is quite a lot to be said about unity. Substantial unity is not easy to talk about, however, because it is not easy to know what it involves. The standard scholastic expressions are the extensionally equivalent pair ‘unum per se’ and ‘ens per se.’ Although I have used these phrases several times already, I have not yet tried to give an account of what they require. Essentially, to describe something as an ens per se in the present context is to describe it as an individual substance. Strictly speaking, however, this way of understanding ‘ens per se’ requires combining two distinct senses of that phrase. In one sense, the phrase picks out entities in the category of Substance, and so contrasts with accidents, which inasmuch as they are essentially apt to inhere in other things are conceived of as entia per alia (§6.1). In another sense, an ens per se is contrasted with a mere aggregate that fails to be an individual. Understood in this second way, an ens per se can be either a substance or an accident. In the present context, these two senses are effectively fused together, so that an ens per se is an individual substance, neither a mere aggregate of multiple substances nor an accident or mode inhering in a substance.20

With this terminology in mind, we can now ask what makes a human being, or any material substance, be an ens per se. To be sure, the answer is not that an ens per se is simple or indivisible. Indeed, often an ens per se will be composed of other substances. Strictly speaking, as we will see in the next chapter, both prime matter and substantial forms count as substances, as do the integral parts of a material body. So, although an ens per se is not a mere aggregate, it will often be an aggregate—an aggregate with the proper sort of unity to count as a substance.

What then is the proper unity? What distinguishes those aggregates that are substances from those aggregates that are mere heaps or otherwise insufficiently unified? One standard way to draw this distinction is to describe an ens per se as something that has its own nature or essence—something, in other words, that is a member of some

forma, vel quin in toto includantur plures formae, non tanquam specifie constitute illud compositum, sed tanquam quaedam inclusa in potentiali istius compositi.”


20 On the two senses of ‘ens per se,’ see e.g. Aquinas, In Meta. V.9.885 and Suárez, Disp. meta. 4.3.3. On these issues in general see Rozemond, Descartes’s Dualism pp. 167–9. Olivo, “L’homme en personne,” puts great weight on the distinction between these two senses, using it to contend that although Descartes treats a human being as an ens per se in one sense (as a unity), he does not in the other sense (as a substance). Hence “on ne peut tirer partie de ce que Descartes affirme que l’homme est ens per se pour en conclure, dans un sens ou dans l’autre, à propos de sa substantialité” (p. 76). But this makes no sense. For scholastic authors, anything that is an ens per se in the first sense is a basic entity, falling directly under the genus being. Such things need not be substances, but in that case they will be accidents. For Descartes, the only basic entities are substances and modes (§13.5). So the only logical space Olivo opens up here in the context of Descartes’s thought is the possibility that the human composite could be a mode, a view he expressly rejects when it appears in Regius (see note 24 below). More worthy of consideration is Olivo’s proposal that Descartes’s human composite should be understood on the model of Christ’s hypostatic union. But although such unity has interesting affinities with Descartes’s conception of mind and body, there is no reason to think he himself would have wanted mind–body union to be understood in this way.
species of substance. The Coimbran catalogue of the different kinds of unity (§24.2) holds that “the per se unity of composite things results from the composition of parts that are collected in some third nature” (In Phys. I.9.11.2). Eustachius a Sancto Paulo similarly defines an ens per se as “what belongs to a single nature and essence” (Summa I.1.3b.1,3, I:48). This line of thought in effect adds to the previous characterization of an ens per se, ruling out not only accidents and aggregates, but also substantial parts of a whole. The part is not an ens per se, strictly speaking, because it does not properly have a nature of its own, but contributes to the nature of some whole. Thus, according to Christoph Scheibler, “a composite entity is unum per se if the partial entities that are in it are contained under one common essence” (Metaphys. I.4.1 n. 9). Thus water counts as unum per se, and so an ens per se, even though it is composed of various parts—matter and substantial form, and sundry portions of water—“because all those parts are contained under the one essence of water” (ibid.). In contrast, water mixed with wine is an ens per accidens. (The strict unitarian could hardly welcome a pool of water as an ens per se, unless, rather implausibly, that pool were thought to have a single substantial form, and the sundry portions of water were thought to exist only when contiguous with the whole. Scheibler, however, is no unitarian.)

This appeal to natures suggests a line of argument that any pluralist, including the soul-and-mind pluralist, might deploy to avoid platonistic dualism: that the mind–body composite is a single, per se unity because the rational soul does not have its own distinct nature, but contributes to the nature of the whole composite, the human being. Scotus, among many others, suggests this approach: “I grant that the total existence [of the composite] is completed by a single form that makes the whole be what it is. But it does not follow from this that precisely one form is contained in the whole, nor that there are not multiple forms contained in the whole” (Ordinatio IV.11.3 [Wadding VIII n. 46]). Multiple substantial forms do not preclude substantial unity, on this line of thought, provided that there is a story about what “makes the whole be what it is”—in other words, that gives the composite its nature.

This approach captures a defining mark of what it is to be an ens per se, inasmuch as every ens per se falls into some one species. Yet even if this points toward what makes the soul–body composite a genuine unity, it is not nearly as helpful a strategy as one might suppose, because it identifies a consequence of substantial unity rather than the

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21 For other examples of the link between per se unity and belonging to a natural kind, see Zabarella, De rebus nat., De gen. ch. 2 (col. 398), and also Henry of Harclay, Quaest. ord. 8 n. 83: “quia ultima forma dat nomen et speciem, quia illa est unica, ita totum compositum unum ens et non duo entia”; Scipion Dupleix, Métaphys. III.2.3: “L’étant qui a cause par soi a son être réglé à l’ordre de nature. L’étant par accident a son être incertain, fortuit ou artificiel.” See also Scheibler’s further remarks at Metaphys. I.12.1 n. 13 and I.12.3 n. 57.

For the idea that an ens per se can be composed of parts so long as they share the same nature, see Ockham, Quaest. var. VI.2 (Opera theol. VIII.213–14): “totum per se componitur ex partibus essentialibus, quarum una est potestia essentialiter et alia actus, et neutra est per se in genere sed solum per reductionem. Totum per accidens, licet componatur ex partibus talibus quarum una est in potentia ad aliam [viz., accidents to a subject], tamen utraque pars talis entis est per se in genere, quia tam accidens quam eius subjectum”; Robert Alyngton, In Praed. p. 263: “Aliae tamen substantiae, scilicet materia et forma, quae sunt principia substantiarum materialium, et partes quantitativae substantiarum, sive sint minima naturalia sive majora minus minimus naturalibus, ut dicit haeque via, sunt per se in prae dicamento substantiae sicut sunt per se entia. Verumtamen sicut sunt entia secundum partem et non complete per se, sic non sunt primo et principaliter in prae dicamento substantiae, sed per se secundo.” On this line of thought, a substance–accident composite (a thick substance) cannot be an ens per se because its parts are not even in the same category (the same highest genus), let alone in the same species.
cause of such unity. As before, it is not enough simply to stipulate that this is what the rational soul does. The problem is to explain the sort of union the rational soul has with the body, such that we properly categorize the whole composite as a substance in the species human being. To be sure, as noted earlier, common sense tells us that the soul–body composite is a single substance. But one might also follow common sense in supposing that a car (or other artifact) is a single substance, and we might imagine that its engine is analogous to the rational soul. Why is that a false analogy? Why is car not a species of substance, whereas human being is?

The closest thing to a solution I have found among scholastic pluralists rests on an appeal to teleology, which gets expressed in claims such as that soul and body are incomplete relative to the human composite, and that body and soul are ordered to one another. Versions of these ideas can be found all the way through the scholastic era, from Henry of Ghent in the late thirteenth century to Franco Burgersdijk in the early seventeenth. Burgersdijk, for instance, gives the standard pluralist account of how, when the ultimate substantial form in a substance is introduced in the process of generation, “the more imperfect form is not abolished, but ceases to be a specifying form, and becomes a disposition.” Then he adds the crucial explanatory clause: “And because the imperfect form was ordered to the more perfect form, and apt to receive it, that [more perfect] posterior form, when tied to the imperfect form, does not make one thing by aggregation, but one thing per se” (Collegium phys. 20.10, pp. 206–7). This is teleological language: the less perfect is “ordered” to the more perfect, and “apt” to receive it. Even the language of the lesser form becoming a mere “disposition” for the more perfect form suggests the picture of a process working according to the intention of nature, where the lower-level substantial forms work to prepare a body that then gets perfected by the introduction of the rational soul, which is the culmination of the process of generation. This same approach is even more starkly on display in Oresme, a soul-and-mind pluralist. When he confronts the objection that on his account a human being would not be unum per se, he responds in a sentence: “this is denied, because the material sensory soul disposes [the body] for the intellective soul” (In De an. II.5, p. 155).

The force of the argument is again teleological: the purpose of the body informed by the sensory soul is to serve as part of the composite perfected by the rational soul. Oresme allows that it would be within God’s power to separate off the rational soul from this animal body, leaving the animal to roam free. What would we call such a non-rational quasi-human being? Oresme’s answer is that it would belong to a new, hitherto unseen species (p. 154). Ockham, while admitting the same possibility, had denied that such a creature would count as an animal at all, except equivocally, because “it is not a complete being existing per se in a genus, but is naturally suited to be an essential part of something existing per se in a genus” (Quodlibet II.10 [Opera theol. IX:161]). For both Oresme and Ockham, facts about the natural order of things—rather than about abstract metaphysical possibilities of independence—determine the ultimate constituents in nature. Human beings count as per se unities because they are aimed at by nature in a way that artifacts and other per accidens unities are not.  

22 The idea that unity can be given a teleological account is evident in Aristotle’s initial definition of ‘whole’ at Meta. V.26: “We call a whole that from which is absent none of the parts of which it is said to be naturally (φύαν) a whole” (1023b26–27). It can be readily found in a great many scholastic discussions. Henry of Ghent, for instance, characterizes
Perhaps surprisingly, this is the first appearance of teleological reasoning in the whole course of this study. It is moreover particularly interesting that scholastic pluralists appeal to teleology here, because this is precisely the sort of context where teleology retains a foothold today: in explaining the systematic features of living organisms in terms of the functions that those systems perform. There remains something plausible in the idea that the mind–body composite should be regarded as a single organism just because the two are designed to function together, as a unit—even if we were to decide they are very different in nature. Even so, such explanations were generally rejected by post-scholastic authors of the seventeenth–century, who notoriously turned their back on final causes. This should lead us to wonder just what sorts of unification strategies might be deployed in the post-scholastic context, and it is to this vexed topic that I finally turn.

25.6. Unification Strategies III: Descartes

Recent scholarship has paid considerable attention to whether the mind still counts as the form of the body, in Descartes and other post-scholastic authors. This, as I have been stressing, is the wrong question. Anyone can say that the mind is the form of the body, and the notion of form is so capacious that there is bound to be some sense in which that claim comes out true. Quite regardless of whether post-scholastic authors wish to retain the vocabulary of hylomorphism, they need to account for what makes the mind–body composite one thing.

Some seventeenth-century authors, such as Pierre Gassendi and Robert Boyle, are happy to speak of the mind as the form of the body, but without gaining any the pluralist view as holding that “in qualibet re naturali et individuali sunt plures formae substantiales naturae ordinem et colligiantiam naturalem adinvicem habentes, simul per suam substantiam existentes in eodem, quorum illa quae est ultimo adveniens completiva est entis illius, et hoc secundum alios ex eis tanquam formalis et completiva respectu praecedentium” (Quod. IV.13; ed. 1518 I:104vK).

Unitarians just as much as pluralists invoke such teleological considerations (even if the pluralists have to put more weight on them). Aquinas, in the following passage, appeals both to species membership and to teleology to ward off the charge that body and rational soul make an accidental unity: “etsi possit per se subsistere non tamen habet speciem completam, sed corpus advenit ei ad complementum specier” (Quaest. de anima 1 ad 1). See also Summa theol. 1a 75.2 ad 1 and 76.1 ad 6: “...est anima humana manet in suo esse cum fuerit a corpore separata, habens aptitudinem et inclinationem naturalem ad corporis unionem.” At Summa contra gent. II.56.1319, Aquinas distinguishes three possible ways of being unum simpliciter: “unum autem simpliciter tripliciter dicitur: vel sicut indivisibile, vel sicut continuum, vel sicut quod est racione unum.” The soul and body do not make a unity in the first way, since they are a composite, nor in the second way, since that applies only to material parts. The critical question, then, is whether soul and body make something that has a single ratio or nature.

The Coimbrans also appeals to the parts’ aptitude for union: “quandoquidem anima et corpus sunt actus et potentia eiusdem generis, habentes inter se naturalem habitudinem et proportionem ad coniunxendum unum quidpiam substantiale” (In De an. II.1.6.3). See also Suárez: “In anima vero secus res se habet, nam, etiam si sit separata, est pars secundum positam aptitudinem et naturam, et non tantum per non repugnantiam. Est enim pars non integralis, sed essentiae, habetque incompletem essentiam, natura sua institutam ad complendam aliam, et ideo semper est substantia incompleta” (Disp. meta. 33.1.11); “Cum enim neque materia neque forma per se sint entia completa et integra in suo genere, sed ad illud componendum natura sua institutae sint, merito illud quod ex eis proxime componitur, essentia et natura per se una dictur et est” (Disp. meta. 4.3.8).

For a helpful general discussion of late scholastic conceptions of substantial unity, see Des Chene, Physiologia pp. 134–8. The importance of teleological considerations has received little attention in the secondary literature. The closest I have found is in Rozemond, who in several places describes the scholastic account of substantial unity as “teleological” (Descartes’s Dualism pp. 160, 161). But her discussion is not as helpful as it might be, because she assimilates this way of describing the situation to the much stronger, and incorrect claim, regarding matter and soul, that “it is part of their very essence to belong to a composite” (ibid., p. 156). This is never true of scholastic conceptions of the rational soul, and for pluralists it is not true even of the human body.
explanatory advantage from so doing. Others think it best to reject such Aristotelian language, and think they can avoid platonist dualism without it. Gerard and Arnold Boate, for instance, in their *Philosophia naturalis reformata* (1641), reject both substantial forms and prime matter. Yet although they insist that both body and mind are complete substances in their own right, they hold that nevertheless the two can be joined together to make a genuine unity:

We grant that the soul does not assist the body as a sailor assists a ship. . . . But it by no means follows that for this reason it ought to inform the body in the way that the peripatetic dreams it does, when other, truer modes are available for two or more distinct substances to be connected so as to constitute one thing. We have innumerable examples—or, rather, models (imita-
menta)—for this sort of thing in the case of artifacts (artibus). For in works of this sort distinct substances—sometimes very different from each other—are accustomed to be joined so as to constitute a single body. Yet the force and industry of natural agents goes far beyond all the industry of artists, and so results in distinct substances tied together and aptly joined so as to constitute one thing—not as one thing actualizes or informs another, but as each one to itself and through itself is this that it is and exhibits to the whole the complete character of the part. (I.3.33)

The Boates here reject platonist dualism, spurning the sailor–ship analogy (line 1) and instead working toward the conclusion that soul and body stand to one another as parts of a whole (line 10). They claim to be able to get this result without appealing to hylomorphism. Resisting the temptation to treat artifacts as genuine substances, they instead refer to such cases as “models” (line 4), and contend that if an artisan can create something substance-like by (say) sticking marble eyes into the clay image of a man, then nature—which is much more powerful—ought to be able to generate true substances from equally disparate ingredients. It is, however, wholly unclear how they think nature does this. If they think that, as in artificial cases, spatial contiguity or causal connections are enough to ensure unity, then they ought to think that artifacts are genuine substances. If this is not enough, then they owe us some account of what substantial unity does amount to, and they are even farther than the pluralists from providing any answer.

Very occasionally, one finds post-scholastic authors denying that the mind–body composite is a *per se* unity. The most striking example from our period is David Gorlaeus, whose *Exercitationes philosophicae* (circa 1611) offers up a shockingly explicit version of platonist dualism:

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23 Gassendi makes it clear that the rational soul is not included in his critique of substantial form: “merito iure et substantia et substantialis forma censetur [anima rationalis seu mens]. Agimus autem de caeteris solum . . .” (*Syntagma* II.1.7.3, I.466b). Boyle makes a similar qualification: “whenever I shall speak indefinitely of substantial forms, I would always be understood to except the reasonable soul that is said to inform the human body; which declaration I here desire may be taken notice of, once for all” (*Origin of Forms* [Works V:300; Stewart p. 15]).

Gassendi is unusual among post-scholastic authors in being willing to postulate not just a rational but also a sensory soul. This is, in large part, just a terminological concession, in that he makes it clear that his sensory soul can be given a reductive account in atomistic terms, along the lines of other essential forms (see §27.6 for Gassendi’s retention of essences). A sensory soul, according to Gassendi, “textura sit ex tenuissimis atomis.” In virtue of organizing these “subtilissima” and “tenuissima” corpuscles, such a soul mediates between the body and the rational soul (*Syntagma* II.1.7.4, I.472a). This view makes its way into the preface of Charleton’s *Natural History of the Passions*, as well as into various still more obscure works. For details, see Michael, “Averroes and the Plurality of Forms” p. 181; Garber, “Soul and Mind” pp. 771–2; McCracken, “Knowledge of the Soul” p. 823.
We gladly concede that there are composites, but we do not recognize any one being that should be called the composite. Instead, there are many beings. For it is indeed the composing parts that we call composites, inasmuch as they are the things composed. We hold that each part has its essence before composition and also retains it afterwards, nor is any being made that is numerically one, or one being made from these parts. Instead, they are united and mixed so that one continuous thing is made, which is one being by aggregation and not by essence. Thus in a human being there is a soul and also a body, and these two are united in such a way that the body is made the soul’s residence, vehicle, and instrument through which the soul exercises its operations. But these two are not made into one being, called a human being. Instead, each retains its complete and perfect essence, by which it is what it is. Still, the human being is not the same as the soul, nor the same as the body; rather, it is the same as the soul and the body taken together and aggregated. If, however, the human being is to be considered not as a being by aggregation, but as one thing per se, then it will be the same as the soul existing in the body.

As we should expect, Gorlaeus stresses that the parts of the composite exist prior to the composite, each with its own independent essence (lines 3–4, 9–10). With this he rejects the unitarian conception of how a form–matter composite is unified. And whereas the scholastic pluralist insists that what results from composition is a new entity, with a new essence, Gorlaeus insists that even after composition there remain two things, continuous and so unified by aggregation (line 6), but with no new essence (line 6) and so not one thing per se (line 13). The point holds in general for form–matter composites (lines 1–6) and in particular for human beings (lines 6–13), which can be regarded either as nothing more than the aggregate of soul and body or—if one wants to hold onto the idea of a human being as per se unum—as simply the soul.

Gorlaeus argues for this sort of platonic dualism at some length, but here I will content myself simply with noting his bold claim—a claim so bold, indeed, that hardly anyone in the seventeenth–century was willing to follow him. When Descartes’s disciple Henricus Regius dared to do so in 1641, he created an immediate scandal. News of this quickly came to Descartes, who reproached Regius with the remark that “you could scarcely have said anything more objectionable and provocative” (III:460). It

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24 Regius defended the following theses in a disputation at Utrecht from December 1641: “VIII. Forma specialis est mens humana, quia per eam cum forma generali in materia corporea homo est id quod est. Haec ad formam generalem seu materialem nullum modo potest referri: quoniam ipsa (utpote substantia incorporea) nec est corpus, nec ex motu aut quiete, magnitudine, situ aut figura partium orrit potest. IX. Ex haec et corpore non fit unum per se, sed per accidens, cum singula sint substantiae perfectae seu completeae. X. Cum autem dicuntur incompletae, hoc intelligendum est ratione compositi, quod ex harum unione oritur” (as quoted in Bos, Correspondence p. 93n.). Regius would subsequently apologize to the Utrecht theology professor Gisbertus Voetius, and offer the excuse that he had gotten the idea from Gorlaeus, without realizing how controversial it was (ibid., p. 93). In subsequent works, Regius would abandon this controversial idea for the perhaps equally controversial idea that the mind is simply a mode of the body (see Clarke, “Henricus Regius” sec. 4), a move that Descartes would later describe to him as “multo peior” (IV:250).

Voetius suggests that Gorlaeus’s own source for the doctrine that a human composite is an ens per accidens is Nicholas Taurellus, the German Protestant whose Philosophiae triumphus (1573) does indeed contend that “homo non est unum per se, quod duabus immutatis constitutatur formas” (axiomata f. d6r). For further information on Taurellus, as well as evidence for the link to Gorlaeus, see Lüthy, “Gorlaeus’ Atomism” pp. 271 and 278–90. It is unfortunately not at all clear why Taurellus wants to deny the unity of the human composite; the above remark appears as an unargued axiom. Lüthy makes the interesting suggestion that this thesis is connected to Taurellus’s overarching concern to introduce some distance between the soul and the corrupting influence of the body, as suggested in this passage: “Nos enim ex corpore et anima constituiumur, sed voluntas per se considerata simplex est animae facultas, quae sine corpore intelligi atque consistere potest, qua ratione bonum quid existimanda est, licet ob corporibus affectus praebat bona malum apprehendat” (Philosophiae triumphus p. 36).
is, however, maddeningly difficult to determine exactly what Descartes’s own view is, with the result that recent scholars have variously assimilated his view to platon-ic dualism, scholastic pluralism, and various -isms in between. Although this and the preceding chapter are intended to help situate Descartes’s thought in the proper context, his own views remain elusive. To be sure, he does not want to be read as defending platon-ic dualism along Gorlaeus’s lines. But is this because he does not believe it to be true, or because he does not dare say it, even if he thinks it?

If one takes Descartes at his word, ingenuously, one must conclude that he rejects platon-ic dualism. He is quite clear about this not just in his correspondence with Regius but also in the Meditations: “I am present in my body not merely as a sailor is present in a ship; rather, I am so very closely joined and, as it were, intermingled with my body that with it I compose one thing” (Med. VI, VII:81). Throughout our period, the sailor–ship image is a shorthand image for platon-ic dualism, which Descartes here rejects in favor of the view that mind and body make one thing (unum quid). The Fourth Replies appeals to a more scholastic set of terms to reach this same conclusion:

Substances can be called incomplete in that they have nothing incomplete about them as substances, but only when referred to some other substance with which they compose something that is one per se. So it is that a hand is an incomplete substance when referred to the whole body of which it is a part, but it is a complete substance when considered alone. In exactly the same way the mind and the body are incomplete substances when referred to the human being that they compose, but considered alone they are complete substances. (VII:222)

The passage shows every sign of understanding per se unity in the scholastic sense. Such unities need not be simple, and are even, ordinarily, constituted out of other substances. (Aquinas himself had offered the hand as an example of an incomplete substance [Summa theol. 1a 75.2 ad 1].) The crucial point is that the parts of an ens per se are somehow incomplete, and dependent on the whole for their completion.

Yet granted that this is how Descartes wants to be understood, the question remains of whether such a conception of the mind–body composite is consistent with his broader views. Here I will focus in particular on whether he has any basis for treating mind and body as something more than an aggregate of two substances in close causal interaction. (The question of interaction is of course a further problem in its own right, but is not my concern here.) As we saw in §24.5, Descartes does sometimes describe the mind as the form of the body. It should be clear by now, however, just how little that matters. More important is Descartes’s willingness to treat the mind–body composite as having a nature of its own, in the way that the sailor–ship composite does not. This underwrites the following argument, which Descartes recommends to Regius, for the human composite as an ens per se:

Inasmuch as a human being is considered in himself as a whole, we certainly say that he is unum ens per se, and not per accidens, because the union that joins a human body and soul to each other is not accidental to a human being, but essential, since a human being without it is not a human being. (III:508)

The point of such talk of essences, I take it, is that human being is a kind, and that both body and soul, as well as their union, are essential to a thing’s belonging to that kind. But although this furnishes more evidence regarding the conclusion Descartes is after—
the rejection of platonic dualism—it does nothing to explain how soul and body are unified. As stressed in the previous section, the judgment that a certain thing is a substance, with its own nature, is a consequence of its having a certain sort of unity, and does nothing to explain that unity.25

As some recent commentators have observed, Descartes’s position is analogous to that of the scholastic pluralists. More precisely, it is like that of the soul-and-mind pluralists, who similarly want to call the mind the form of the body, but without being able to treat the mind as a substantial form of the usual sort. One might suppose that mind and body, in Descartes, are each too complete and independent to be credibly compared with the views of any scholastic author—in effect, one might suppose that Descartes is too much of a substance dualist. This is not the case. Pluralists, especially soul-and-mind pluralists, treat both sides of the composite as genuine substances in just the way that Descartes does.26 What makes his position trickier is not that he regards the parts as any more complete or substantial, but that he lacks any powerful explanation for the unity of the composite. This is not to say that Descartes has no explanation. On the contrary, I believe that he has two of them, but that the unity they purchase is not as strong as what scholastic authors seek.

Descartes’s first strategy—his official strategy—gets set out quite explicitly in the Sixth Meditation as the reason why he “composes one thing” rather than being merely “present in my body as a sailor in a ship” (VII:81, as above). This reason is that events in the body register in the mind as “confused sensations” rather than appearing as they are, as bodily motions. So, tear a piece of paper and I register this as the mere dislocation of corpuscles; tear my skin and I register this as pain. There is, I think, no more to this argument than meets the eye. The point is simply that mind and body are two things that, when put together, give rise to a unique sort of phenomenon, and to

25 On Descartes’s mind–body composite as having its own nature, see also the Fourth Replies: “ille qui brachium hominum diceret esse substantiam realiter a reliquo eius corpore distinctam non ideo negaret illud idem ad hominis integri naturam pertinentem” (VII:228). I take the Sixth Replies to be making the same point when Descartes remarks that mind and body “dicantur tantum esse unum et idem unitate compositionis, quatenus in eodem homine reperiantur, ut ossa et carnes in eodem animali” (VII:424).

26 Adams is clearly wrong—as the following chapter will make clear—when she writes that “medievals followed Aristotle in denying that any substance could be constituted (wholly or partially) from another substance or substances” (William Ockham II:634). She does seem to be right in general, however, in her claim (ibid.) that an ens per se cannot be composed of other entia per se. This principle has been used to distinguish Descartes’s views from those of the scholastics, especially in Kaufman’s excellent “Descartes on Composites.” I agree that this is a promising line of inquiry for anyone who would deny that Descartes treats the mind–body composite as a substance, and I lack the space to investigate the issue further here. Anyone seeking more details should visit us in Boulder.

The comparison of Descartes to the scholastic pluralists came into prominence in Hoffman, “Unity of Descartes’s Man” pp. 363–64, and can found as well in Des Chene, Physiologia p. 65 and Rozemond, Descartes’s Dualism p. 145, who notes the similarity to Ockham in particular. Before this flurry of interest, Gordon Wilson, “Henry of Ghent,” had argued for a similar thesis.

On Descartes’s form of dualism as fundamentally distinct from the scholastics see again Kaufman, “Descartes on Composites” and also Rozemond, Descartes’s Dualism ch. 5, who holds that “Descartes simply never proposes that the mind is the form of the body as an account of their union” (Descartes’s Dualism p. 152). Hoffman, in contrast, has argued for the continuity between Descartes and scholastic pluralism regarding the human composite, first in “Unity of Descartes’s Man,” then in “Cartesian Composites,” and finally in “Union and Interaction” where he writes that “it is my controversial contention that Descartes’s solutions to these three problems of the union of mind and body are based on his retention of two fundamental Aristotelian metaphysical doctrines. The first doctrine is that of hylomorphism . . .” (p. 391). As for how hylomorphism achieves substantial unity, Hoffman embraces just the sort of mysterious strategy I wish to reject, remarking that “the relation between form and matter is a primitive and unanalyzable notion” (ibid., p. 392). Maybe so, but then instead of invoking hylomorphism we might as well say that mind stands to body as warp to weft, or as yin to yang.
that extent can be regarded as a kind of unit. Descartes subsequently reiterates this argument on many occasions. He points out to Regius, for instance, that an angelic mind, even if causally connected to a human body, would not experience the same sort of bodily sensations (III:493); it would, instead, simply observe flesh being torn, like a piece of paper. Hence an angel–body composite would not be an *ens per se*. Particularly telling is this remark to Arnauld, who had specifically accused Descartes of committing himself to a form of platonic dualism:

> It seemed to me I was sufficiently careful to guard against someone’s supposing that a human being is simply a soul using a body. For in that same Sixth Meditation in which I dealt with the mind’s distinction from the body, I also proved at the same time that it is substantially united with the body. And the arguments that I used to prove this are as strong as any I remember having read elsewhere. (Fourth Replies, VII:227–8)

Unless one supposes that Descartes is being utterly disingenuous here, one should conclude that Descartes rejects platonic dualism (lines 1–2), that he instead thinks mind and body make a single substance (lines 3–4), and that the reason they are a substance is not that they are a hylomorphic composite, but that they yield sensations of a certain distinctive kind.²⁷

Although this argument from confused sensations has been much maligned by critics, on the grounds that it does nothing to account for genuine substantial unity, it seems to me an accurate reflection of just how much unity Descartes thinks there actually could be between two substances of such wholly different natures. In *Principles* I.60 he remarks that “even if we suppose God has joined a corporeal substance to a thinking substance so closely that they could not be more closely conjoined, and so compounded these two into some one thing, they nonetheless remain really distinct.” I take it that he accepts the protasis, and does so not because he envisages some sort of magical, ineffable, hylomorphic union between two very different kinds of substances, but because he thinks that not even God could produce all that much unity from two such very different things. A mind and body connected in such a way that bodily events

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²⁷ As many commentators have noted, Descartes never calls the human composite a substance (e.g. Olivo, “L’homme en personne” p. 70). This is an interesting fact, inasmuch as human beings are usually treated as paradigmatic substances, throughout our four centuries. Even so, Descartes does here use the phrase “substantialiter unitam” (VII:228). And although some scholars have raised doubts about what this expression might mean for Descartes (e.g., Rozemond, *Descartes’s Dualism* p. 165), it seems to me quite implausible to deny that it commits Descartes to treating the human composite as a substance. Descartes also, as discussed in §24.5, describes the soul as “vera forma substantialis hominis” (III:305), which would similarly seem to entail that a human being is a substance, no matter how attenuated Descartes’s notion of substantial form.

A further notable reason not discussed in the main text for reading Descartes as a platonic dualist is that he seemingly recognizes only two kinds of substances, thinking and extended, and so has nowhere to put the human composite. (For a forceful statement of this worry see Kaufman, “Descartes on Composites.”) Given the connection between being an *ens per se* and belonging to a kind, this worry is particularly serious. One reason I relegate the issue to the notes is that it is not clear this is a distinctive problem for Descartes. The scholastic Porphyrian tree for substance, after all, similarly divides substance into corporeal and incorporeal. So the scholastics too might wonder where the logical space is for human beings. (In fact, they unanimously agree that human beings are corporeal substances.) A second reason I think the issue not decisive is that although *Principles* I.48 recognizes “non plura quam duo summa genera rerum,” a later passage in the *Comments on a Certain Broadsheet* (VIII:B:349–50) seems to recognize the problem and expressly leaves room for composite substances—i.e., human beings—that have two principle attributes. Olivo rightly stresses this text in “L’homme en personne” p. 79, as does Hoffman, “Cartesian Composites” p. 269.
in the latter yield thoughts of a certain unique kind in the former are unified in a certain sort of way, and for Descartes this is as much unity as the situation admits of.  

So much for the official argument. I think that Descartes also has an unofficial argument, however, one that he shares with the scholastic pluralists. This is the appeal to teleology: that soul and body constitute a substantial union because they are naturally suited to one another. This is a surprising conclusion to reach, inasmuch as Descartes is famously hostile to teleology, proclaiming in the French edition of Principles I.28, for instance, that “we shall entirely banish from our philosophy the search for final causes.” Even so, his discussions of the workings of mind and body are full of teleological language. He speaks, for instance, of the body’s organs as “designed to satisfy our natural needs” (Principles IV.190), and offers an account of “the true function of respiration” (Discourse pt. 5, VI:53). Such facts get applied to the question of unity, as when he writes that “the body is one thing, and in a way indivisible, because of the disposition of its organs, these being so related to one another that the removal of any one of them renders the whole body defective” (Passions I.30). Even the union of mind and body gets described in teleological terms, as in a letter that attempts to explain away Regius’s embarrassing embrace of platonic dualism by insisting on the “natural aptitude” of mind and body for substantial union (to Dinet, VII:585). Indeed, his entire theory of sensation bears witness to this sort of teleological perspective on the mind–body union. The senses do not show the external world as it is, because that would not be as useful to us as what in fact they do: “properly speaking, nature has furnished sensory perceptions only so as to inform the mind of what is beneficial or harmful for the composite of which the mind is a part” (Med. VI, VII:83).

I do not regard these passages as an embarrassment, or as in any way inconsistent with Descartes’s broader views. He does not think that appeals to final causality should play any role in his philosophy—physical, metaphysical, or otherwise. Since we cannot know what the true final causes are in nature, nothing should be built on that foundation. Still, Descartes’s Christian beliefs, and even plain common sense, make it natural for him to suppose that certain parts of the created world have a special sort of functional interrelationship, by design. This cannot be any part of his official account of substantial unity. Officially, “when we consider the body alone we perceive nothing in it on account of which it desires to be united with the soul, as there is nothing in the soul on account of which it needs to be united to the body” (III:461). Hence the official argument rests on confused sensations. If we were, however, to adopt less rigorous standards for what counts as evidence, and take into account our familiar views about

28 My reading of the argument from confused sensations is in effect what Margaret Wilson calls the “Natural Institution” theory, and I agree with her that this account is “philosophically resourceful and relatively intelligible” (Descartes p. 207). More recent interpreters are less impressed. Rozemond’s exhaustive discussion of the issue concludes that “Descartes does not really explain how mind and body are united” (Descartes’s Dualism p. 212) and that “I don’t see in Descartes an answer to the question how mind and body are unified so that together they constitute a substance” (ibid., p. 213). For my part, I cannot see what sort of further story there could be here, and I suspect that Rozemond is looking for some kind of magic. Kaufman dismisses the argument from confused sensations with the remark that “here, as in every text in which Descartes explicitly explains what the ‘substantial union’ amounts to, Descartes explains the union in terms of nothing more substantial than the fact that certain types of causal interactions between mind and body result in particular states of a mind or a body that would otherwise be absent, for instance if an angel were ‘occupying’ a body” (“Descartes on Composites” p. 51). He takes this as evidence that Descartes cannot suppose the mind–body composite to be a substance. I take it as evidence that his standards for what count as a substance are quite low.
how the world is supposed to be organized, then we could say that human beings, like other living things, have a special sort of unity that other aggregates lack.29

Yet even from this less rigorous perspective, the appeal to final causes cannot go as far in Descartes’s case as it does for the scholastics. This is so specifically in human beings, and more generally for all substances. In the human case, although Descartes certainly seems to think that the mind and body are suited to be joined together, the extent of their functional interrelationship is considerably less than on scholastic views. For one thing, as stressed already (§24.5), Descartes’s body does not depend on the mind, either physically or metaphysically, in the way that scholastic matter depends on substantial form. Just as importantly for present purposes, Descartes’s mind does not require the body for its operations in the way that scholastic authors generally suppose. The tradition of Aristotelian empiricism insists on an intimate relationship between mind and body in the cognitive process. Suárez, for instance, appeals to “the mode of intellection in human beings” as an argument against platonic dualism—specifically, to the fact that “the intellect cannot perceive anything that was not previously supplied by the senses in some way.” He concludes:

This clearly teaches that such a principle of intellection is not some whole substance altogether independent from the body in its essence; for a substance that in no way depends on a body for its being will not depend on it for its operation. (In De an. II.4, p. 260)

Suárez’s point is that we have very good reason to treat soul and body as a single, unified substance because of the way their operations are interdependent. The human mind is designed to function on the basis of sensory input, and its operations will be gravely impeded without such input. Descartes famously rejects this kind of empiricist

29 The best source for information on teleology in Descartes is Simmons, “Sensible Ends,” to which my discussion in the main text is much indebted, though she does not directly consider the connection between teleology and substantial unity. Someone who does briefly draw that connection is Carriero, Between Two Worlds p. 395, though he finds traces of teleology in the confused sensation argument itself. On my view these are two distinct lines of thought. Gueroult discusses at some length the place of teleology in substantial unity (Descartes II:146–55). He assumes (as does Simmons, “Sensible Ends” p. 62n.) that Descartes’s appeal to teleology applies only to human beings, and not to other animals. I am unpersuaded of this. Given that Descartes’s occasional embrace of the language of ends occasionally gets applied to other animals, it might be thought to explain their unity as well. See also Machamer and McGuize, Changing Mind.

Descartes repeatedly stresses our inability to grasp the true ends of nature. See, e.g., Med. IV (VII:55), Fifth Replies (VII:375), Principles I.28, III.2–3, Convers. with Burman (V:158). All these passages take for granted that there are ends for which God created the world, which makes it surprising that Simons—who cites all these passages—goes on to call into question whether Descartes accepts that God has any ends in action. The basis for her doubts is a passage in the Sixth Replies (VII:431–2), which she translates as follows: “It is inconsistent to suppose that the will of God was not indifferent from eternity concerning everything that was or will be, for one can imagine no goodness or truth, or anything worthy of belief or action or omission, whose idea was in the divine intellect prior to the decision of his will to make it so” (“Sensible Ends” pp. 65–6). This might indeed suggest, as Simmons puts it, that “God’s intentions and decisions are not governed by any antecedent conception of what is good or true” (p. 66). But her translation is misleading, in numerous ways: (1) To say that God’s will is indifferentem is merely to invoke a familiar scholastic technical term for the will’s openness to contraries; (2) such openness to contraries applies not to “everything that was or will be” but to omnia quae facta sunt aut unquam fient (everything that has been made or ever will be made); (3) it is not that there was no idea of “goodness or truth” in God prior to God’s decision to create, but that God had an idea of nullum bonum vel verum (no thing that is good or true); (4) it is not that, prior to creation, there was nothing “worthy of belief or action or omission,” but that there was nothing that was credendum vel faciendum vel emittendum (no thing to be believed or to be made or not made). When the passage is so understood, it becomes clear that Descartes’s point is not the bizarre one that God, prior to creation, is indifferent to everything—indifferent to himself? indifferent to goodness? indifferent to truth?—but that God is neutral between any thing that might or might not be made, and between any proposition that might or might not be made true. This is a perfectly standard scholastic theological view, routinely invoked to safeguard divine freedom (see e.g. Kretzmann, “A Particular Problem”).

25.6. Unification Strategies III: Descartes 603
framework. In many ways, on his view, the body is an impediment to the mind’s operations. Hence even if mind and body are suited to one another in a certain way, they also work at cross purposes, at least in some respects, which tends to undermine any appeal to teleology to explain their union.30

Thinking of substances more generally, Descartes faces a further obstacle to employing teleological explanations. For scholastic Aristotelians, the kinds of things there are accord with God’s ideas for how things ought to be, and for every kind of material thing—dogs, cats, stones, etc.—there is a distinct substantial form (§27.3). Even if Descartes endorses the notion that the kinds of things correspond to God’s ideas, he does not suppose that God executes that plan by introducing substantial forms into nature. Instead, material substances are simply bodies put into certain patterns of motion. This fundamentally changes the way Descartes thinks about the category of Substance. For the scholastics, the beginnings of an explanation of what makes substances special is that they have a substantial form. We human beings, however, do not know how to make substantial forms—at least not directly. We know only how to bring about accidental changes, which may or may not result in a new substantial form. Hence substances, on the scholastic picture, retain a special sort of connection with nature. The most we can do is make artifacts, and artifacts are not substances. For Descartes, in contrast, the sorts of processes that cause substances to come into existence are the same sorts of processes that human beings employ every day to make food, furniture, and houses. When someone constructs a bed out of a certain assembly of wood, much the same sort of story is at work as in the generation of a dog. Both are intended, and both are carried out through mechanical processes. It is no wonder, then, as we have seen (§24.5), that Descartes allows artifacts to count as substances.

For the scholastics, then, natural teleology neatly corresponds with their hylo-morphic metaphysics: nature (that is, God) has designed the world a certain way, and established substantial forms to achieve that end. For Descartes, in contrast, God’s means are mechanical. But since we can play that game too, there is no clear divide between what does and does not count as a substance. If a living thing is a substance, then a robot might be one too, and if a stone is a substance, then so too might a soufflé. Descartes has nothing in his ontology to distinguish between substances and non-substances, and he does not want to appeal to teleology. To the chagrin of his enthusiasts, it is not clear that he has a theory of material substance at all.

Descartes has open secrets, and I think it is natural to suspect him of having dark, closed secrets as well. Foremost among his open secrets are his rejection of substantial forms and real qualities—doctrines that he decorously avoided stating explicitly, but that everyone understood to be implicit in his work (§24.5). It is, I think, one of the dark secrets of his philosophy that he wishes to reject the significance of Substance as an ontological category. It is not that he thinks there are no substances, or that there is only one material substance, but that he thinks it a pointless relic of scholastic metaphysics to dispute over the boundaries between substances and mere aggregates. All there are are bodies and minds and their modes. Since there are no material simples

30 On the independence of Descartes’s mind from the senses, in contrast to Aristotelian empiricism, see e.g. Rozemond, Descartes’s Dualism p. 160.
for Descartes (§5.4), there is no such thing as perfect unity even at the lower end. And since there is nothing in Descartes’s austerely corpuscularian ontology to hold particles together at any higher level, there are simply no facts of the matter about whether or not a given cluster of res extensa counts as a substance. We can call a tiny particle of matter a substance; we can call a hand a substance; we can call the whole human body a substance; we can call the mind–body composite a substance. Such a composite does not have very much holding it together—just a funny sort of shared sensory operation, and our unreliable intuition that mind and body belong together. Since Descartes does not think that there is ever very much of a story to be had about what holds anything together, it is no wonder he finds it so easy to assert the unity of the human composite. After all, only someone with strict criteria for substancehood could be expected to be tempted by platonic dualism.

Descartes does not say these things, and so commentators have rushed to fill the void with their own preferred theories of what Descartes thinks a material substance is. I will have more to say about this in Chapter 28. For now I will just suggest that Descartes was nothing if not careful, and that we should take more seriously his silence in this domain. It was dangerous enough to call into question the category of Quality. To challenge the cogency of Substance too might have been fatal to Descartes’s efforts at winning a wide audience for his views. Here, as elsewhere (§8.4), his preferred strategy was a kind of quietism. If you want it to count as a substance, count it.
Permanence and Corruption

The elaborate scholastic metaphysics of prime matter and forms, accidental and substantial, serves at the behest of common sense. It offers a theoretical framework for our ordinary way of viewing the world: as full of things undergoing changes of one and another kind, sometimes surviving those changes and sometimes not. We take ourselves to be the most familiar example of such a thing, but we suppose that the world is full of other such things—dogs and cats and stones—that likewise undergo changes that they may or may not survive.

The most radical challenge to this framework would deny the very existence of change. This is a position that no one during our period embraces. What one finds instead is the only slightly less startling claim that, barring supernatural acts of creation or annihilation, nothing comes into or goes out of existence, and that instead all change is a matter of how or where a thing is. This thesis, which I will call the *permanence thesis*, will be the principal focus of this chapter.

The permanence thesis obviously requires rethinking what the things—the substances—are. Animals cannot be substances, since they obviously do come into and go out of existence, and this means that we (supposing, as everyone does, that we exist) are not animals, which is to say we are not soul–body composites. In general, on this view, it seems that no composite body of any sort could count as a substance, inasmuch as all composite things can, and often do, dissolve. Only a few authors during our four centuries willingly embrace so thoroughgoing a rejection of commonsense ontology. But many authors, once they reject scholastic hylomorphism, are hard pressed to avoid falling into its arms. Here, as we have seen so many times already, what is most interesting about post-scholastic thought is not its rejection of scholasticism, but what comes of that rejection.

28.1. The Scholastic Framework for Substantial Change

When one thing is corrupted, another is generated. So said Aristotle (*De gen. 318a23–25*), and this notion came to be generally embraced throughout our four centuries. One way to understand the process of corruption followed by generation—substantial change—would be in terms of complete discontinuity: a thing exists, then wholly goes out of existence, at which point something wholly new comes into existence. As
discussed back in Chapter 2, this possibility was universally rejected during our period, on the grounds that something has to endure through all natural change. This enduring stuff is what everyone refers to as matter. There was, however, no agreement on the nature of such matter, with the Thomists insisting on its status as pure potentiality (§3.1), but most viewing it as something somehow actual, whether that actuality consists simply in some sort of being, or else in indeterminate extension or perhaps even in some determinate, unchanging extension (Ch. 4). In addition to this disagreement, there was disagreement over whether anything other than matter can endure through substantial change. The Thomists again take the most austere line, insisting that every form of the corrupted substance ceases to exist with that substance. Others, however, allow that some forms endure through substantial change, inhering in the surviving matter. Some argue that accidental forms can survive in this way (§6.3), whereas others argue that both accidental and substantial forms can survive in this way (§25.3). There is indeed such a variety of views regarding the process of substantial change that one cannot speak, even in rough outline, of the scholastic view about substantial change. The most one can say is that there is a very broad, shared framework.

Aristotle intended his hylomorphic framework to serve as a response to the various extravagances of his predecessors: monism, atomism, Heraclitean flux, and Platonic idealism. It was intended, above all, as a realistic theory of change. No wonder, then, that when scholastic authors contemplate the rejection of hylomorphism, they forecast dire consequences. Albert the Great warns that if generation is understood as simply a new “congregation of atoms,” then “many impossibilities obtain,” such as that generation would be nothing more than locomotion (In De gen. I.1.9). John Buridan similarly warns that if substantial form is treated as just the disposition of matter, then it becomes impossible to maintain that horses, stones, and human beings come into or go out of existence (In De an. III.11; see §24.2). Such warnings get applied not only to the wholesale abandonment of the hylomorphic framework, but also to various disputed positions within that framework. Unitarians, for instance, charge pluralists with being unable to maintain the distinction between substantial and accidental change. Those who want to treat matter as intrinsically extended (§4.4) get accused of collapsing that same distinction. For if matter itself possesses extension, the argument goes, then it itself would seem to become the enduring substance. Changes to it, even changes in an allegedly substantial form, would in fact be merely accidental. (See also §3.3.)

The most distinctive feature of the shared Aristotelian framework is the conviction that substantial change is marked by the loss and then gain of one or more substantial forms. (There might be more than one form lost or gained if a substance has multiple substantial forms, or if a single substance is corrupted into many distinct substances, or if many substances come together to make a single substance.) It is this shared conviction that guarantees the scholastics will be realists about substantial change,

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1 Aquinas charges the doctrine of a forma corporeitas with collapsing the distinction between substantial and accidental change: “et sic rediret antiquus error, quod generatio idem est quod alteratio” (Sent. II.12.1.4c). On extended matter as likewise collapsing that distinction, see Peter Auriol, Sent. II.12.1.4 (II:163aDE); Anonymous A [see Ch. 4 note 3] (f. 61raBC); Paul of Venice, Summa phil. nat. VI.12 (f. 101ra). Gregory of Rimini defends himself against this sort of objection with the reply that substantial change can be distinguished as change in “nomen et definitio” (Sent. II.12.2.1 ad 3, V:278). This makes the fact of substantial change rest not on convention, but on species membership.
treat it as an objective fact rather than a matter of convention that certain kinds of change count as substantial whereas others count as merely accidental. On this theory, moreover, substantial change is not only a real event but also a well-defined one, inasmuch as the corruption or generation of a substance happens at an instant. In contrast to accidental change, which often takes place over time, substantial change is an all-or-nothing affair: a thing either is a dog, say, or it is not, because either it has a certain soul or it does not. Because the loss or gain of a substantial form is instantaneous, there is no vagueness regarding when a substance begins or ceases to exist.  

The scholastic framework is particularly vulnerable in two places. First, it requires maintaining that in generation and corruption there is something—the substantial form—that comes into existence anew, seemingly ex nihilo. Scholastic authors have to admit that the substantial form comes into existence anew, since otherwise the change would not count as substantial. But they cannot allow that it is truly ex nihilo, since that sort of coming into existence counts as creation, and only God can create. This led to many long discussions of various ways in which a form might or might not be “educed from the potentiality of matter”—that is, arise out of the one ingredient that all parties agree to endure through change. Among later scholastics and their critics this becomes a prominent topic of dispute, one that William Pemble refers to as “the very most vexed of questions in natural philosophy” (De formarum origine p. 1). The Boate brothers thought that to overthrow scholastic views in this area it is enough just to quote what they say, since “the things they say here are so absurd, and contain such evident contradictions, that setting them out before one’s eyes is enough to refute them” (Philosophia naturalis reformata I.3.50).

This debate over the origin of new substantial forms leads directly to a second vulnerable aspect of the scholastic framework, regarding just how much endures through substantial change. On one hand it is tempting to want to allow more to survive substantial change, because the more that survives—whether that be accidental or substantial forms, or simply more thoroughly actualized matter—the easier it is to explain where the new substantial form comes from (§25.3). For Thomists who think

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2 On generation and corruption as instantaneous, see the Coimbrans: “Deinde quod generatione pro momentanea introductione formae sit vera et realis actio ostenditur: quia generatio sic accepta est mutatio, ut in confesso est apud ommes, cum per eam materia in instanti generationis aliter se habeat secundum formam quam recipit ac sese habebat tempore generationem antecedente” (In Gen. et cor. I.4.12.2). They cite a great many authorities for this view. See also Oresme, In De gen. I.2 p. 13.

Gassendi’s guarded defense of substantial change (§28.3) explicitly gives up the claim that generation and corruption are instantaneous, arguing that all natural change involves local motion, and so “cannot be instantaneous” (Syntagma II.1.7.4, I.473b). See too Margaret Cavendish: “both natural and artificial productions are performed by degrees, which requires time, and is not done in an instant” (Observations p. 67).

3 For a standard version of the worry about how forms are generated, see Marsilius of Inghen, In De gen. et cor. I.2 obj. 1, which argues that only substances could be generated or corrupted, but that they cannot be, because neither prime matter nor substantial form is generated or corrupted. Marsilius’s reply insists that substantial form does come into existence anew.

The first book of Jean Fernel’s De abditis rerum causis contains an extensive discussion of how substantial forms arise from matter in generation. Sennert discusses the issue in detail at Epitome I.3 [tr. Thirteen Books I.3]; for discussion, see Michael, “Daniel Sennert” pp. 291–9. For a helpful discussion of this issue as it arises in Suárez, see Shields, “Reality of Substantial Form.” More generally, see Des Chene, Physiologia pp. 139–44. On the debate over whether the rational soul is educed from matter, see Plutus, “How Matter Becomes Mind.”

Basso makes a powerful argument against the eduction of forms from matter (Phil. nat. De formis I). Jungius likewise puts this issue at the heart of his case against substantial form (Praelectiones phys. assert. primae nn. 12–22; Disp. Hamb. 22 thes. 7). See also Gassendi, Syntagma II.1.7.3 (I.469a) and, at great length, Boates, Phil. nat. reformata I.46–64.
that only purely potential prime matter endures through substantial change, the
problem of explaining the origins of the newly generated substantial form can seem
well-nigh intractable. On the other hand, the Thomistic account makes it clear why
generation and corruption are distinct from other sorts of change: the discontinuity of
substantial change is so radical, on their approach, as to present no risk of confusion with
the case of alteration. In contrast, the more one allows to survive corruption, the less
clear it is how substantial change differs from accidental. If each involves no more than
the coming or going of a form, then they seem not so different. To be sure, one might still
say that substantial change is special because it involves the going and coming of a
substantial form. But, as we have seen (§24.4, §27.5), the reason substantial forms are
special is that they explain the accidental forms of a substance. To the extent accidental
forms are allowed to endure through substantial change, independently of the substantial
form, the very distinction between substantial and accidental forms comes into doubt.

Post-scholastic discussions register both of these vulnerabilities. Rejecting substantial
forms (§24.5), they question whether anything really does come into or go out of
existence during the process of generation and corruption. Treating the matter that
endures through change as wholly actual (§3.2), they question whether there really is a
fundamental distinction between substantial and accidental change. In making these
challenges, they attack scholastic Aristotelianism at some of its weakest points, but
leave themselves open to considerable difficulties. For if nothing comes into or goes out
of existence during substantial change, then it is hard to see how there can be such a
thing as substantial change at all, given that substantial change, by definition, is
supposed to consist in the generation of a new substance. Similarly, if substantial and
accidental change are different at all, it seems they must be fundamentally different,
since the one kind of change is supposed to destroy the thing changed, whereas the
other requires that the subject of change endure. So it is that the seventeenth-century
rejection of scholasticism tends quite naturally to lead to a radical outcome: the
complete rejection of all substantial change.

As we have seen over and over, however, ideas that would become famous in the
seventeenth century were usually anticipated during the scholastic era. The present
case is no exception. Although the scholastic framework for substantial change would
remain ascendant until the middle of the seventeenth century, it had already been
subject to an extensive and quite forceful attack three hundred years earlier, by
Nicholas of Autrecourt. Suppressed by Church authority (§§19.4–5), Autrecourt’s
ideas would have little impact on the ongoing debate. They are nevertheless worth
considering, both for their own sake and because they serve as the harbinger for what
would come, once the floodgates of Church authority burst open.

28.2. Permanence: Autrecourt

Autrecourt’s Tractatus (1330) offers an extended defense of an austere corpuscularian
version of atomism, which simply embraces many of the radical consequences that
might seem to follow from such a view. In particular, Autrecourt holds that a plausible
case can be made for the thesis that nothing naturally comes into or goes out of
existence. If this thesis could be established, it would undermine not only substantial
but also accidental change. For if everything is eternal then not only do substantial forms not come into and go out of existence, but neither do accidental forms. This wrecks the entire hylomorphic framework, because change will no longer be a matter of matter’s going from potentiality to actuality through the loss and acquisition of forms. Instead, for Autrecourt, all change consists in the motion of ingenerable and incorruptible bodies, which he characterizes as atoms. Some sorts of motions get called generation, whereas others are called corruption or alteration or growth, but in no case does anything come into or go out of existence. In general “there is only local motion, even if it receives different denominations” (Tractatus ch. 1, p. 204).

Autrecourt’s corpuscularianism—and in particular his rejection of qualities—was the topic of §19.4. Here the focus will be his arguments for “the eternity of things,” the thesis that serves as the springboard for his corpuscularianism. His strategy is not to prove that all things are eternal, but to show only that there is no evidence to the contrary, and that moreover there are reasons to treat such eternalism as the more plausible view. His negative attack proceeds by targeting the case where it seems we have the best evidence of things coming into and going out of existence: change in sensible qualities. This is a natural place for Autrecourt to focus, given that the theory of real qualities was as entrenched as any part of the Aristotelian framework (§§19.1–2). Moreover, Autrecourt contends that his arguments here will generalize to other cases. If he can show that, contrary to our ordinary assumptions, there is no evidence that anything begins or ceases to exist in cases of alteration, then he will also be able to use arguments of the same form against alleged cases of substantial change. 4

How might one show that change in sensible qualities involves something’s coming into or going out of existence? Not by any sort of conceptual (non-empirical) argument, Autrecourt says, because there is nothing about the concept of change in sensible qualities that requires the denial of eternalism. One would, then, have to establish the thesis on the basis of experience. The argument, according to Autrecourt, would have to look something like this:

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4 Autrecourt’s clearest statement of his radical corpuscularianism occurs at Tractatus ch. 1, pp. 200–1, as quoted in §19.4. See also pp. 201–2: “et breviter inducendo in similibus non apparat quod alio modo fiat corruptio in rebus quam per recessum corporum.” Sometimes Autrecourt restricts his claim to permanent entities (e.g., p. 201), which might suggest that he leaves room for the coming and going of successive entities, and in particular motion. He does, at this point, want to leave that as an open possibility, but eventually he offers a reductive account of successive entities (see Tractatus ch. 5, p. 224 and Dutton, “Nicholas of Autrecourt”).

For what surprisingly little secondary literature there is on Autrecourt’s eternalism, see Dutton, “Nicholas of Autrecourt” pp. 65–8 and Kaluza, “Éternité du monde.”

As Kaluza’s masterful study has shown (Nicolas d’Autrecourt pp. 160–1), Autrecourt’s very complex and interesting arguments in favor of eternalism are presented out of order in the sole surviving manuscript (albeit with indications regarding the proper order). Unfortunately, both O’Donnell’s edition and the translation of Kennedy et al. failed to recognize this, and as a result this part of Autrecourt’s argument, in its published form, is nearly unintelligible. As Kaluza reconstructs it, ch. 1 runs as follows:

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<td>198.18–203.18</td>
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<td>190.11–196.48</td>
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For a cut-and-pasted scan of the Kennedy et al. translation in correct order, see my Provisionalia web page.
1. “Everything that previously appeared to a sense but now does not appear, no matter where the sense turns its attention, does not exist.”
2. “So it is for the whiteness that previously appeared and now does not appear.”
3. “Therefore, etc.” (ibid., p. 199)

Think of snow turning to a dirty grey. The idea is simply that if something appears, and then disappears, and one cannot find it anywhere—like the white of the freshly fallen snow—then one would have good reason to claim that it has gone out of existence. As crude as that may sound, it seems pretty well to capture our ordinary evidence for thinking that things go out of existence.

Autrecourt’s reply is fascinating. He does not challenge the realism that underlies the argument. Like almost everyone before the seventeenth century, he takes for granted that sensible qualities exist in the world (§22.3). (Relocating the sensible qualities would not help his case, anyway, because that would just shift the problem of change to somewhere else.) Instead, Autrecourt offers three ways in which even a realist about sensible qualities might deny that they ever go out of existence. The first explanatory strategy is Reductionism:

It might be said that the major premise [= 1] does not have any truth, because natural forms are divisible into their minimal parts in such a way that, divided from the whole, they cannot perform their action. So even though they are seen while existing as a whole, nevertheless when dispersed and divided or separated they are not seen. (ibid.)

The idea is that whiteness might be nothing more than many microscopic parts ordered in a certain way. What we take to be whiteness’s going out of existence is in fact just its being diffused in such a way that it is no longer visible.

The second explanatory strategy is Dispositionalism:

The second way would be to say that a motive power sometimes performs its act—that is, when it moves it appears—and sometimes is at rest, and then it does not appear. Still one does not say on this account that it has been corrupted. Something similar might be said for all other powers. . . . (pp. 199–200)

Here the idea is that whiteness might be a power or disposition that remains in existence even when it is not acting. In that case its ceasing to act would not show that it ceases to exist. Now to this one could reply that, although whiteness might be a power, and so might produce its characteristic effects only in certain circumstances, still we know what those circumstances are. So if a whiteness that was once seen cannot now be seen, even in the right lighting conditions, and to observers with properly functioning visual systems, then we have as strong evidence as anyone could hope for that the whiteness has ceased to exist. It is easy, however, to see how Autrecourt would reply to this. For as soon as one admits that the entity in question is dispositional, the quick three-step argument above becomes much more complex, because one then needs at least one further premise to rule out the possibility that the power still exists but has gone dormant. But how does one ever know in what circumstances a power might go dormant? Here is a real-world example. One sometimes sees the claim that when leaves turn bright colors in the fall, they in fact do not gain any new quality, but simply lose the greenness that they once possessed, revealing their fall colors. This is to say that the yellows and oranges are there in the spring and summer, but dormant.
Perhaps something similar should be said about the dirty snow—that it is really still white, but just not showing itself as such. Perhaps in general the "standard conditions" under which a disposition reveals itself are far more complicated than we tend to recognize, and dispositions are far less prone to go out of existence than we realize. Perhaps, indeed, the true dispositions of the world never cease to exist.  

The third explanatory strategy is Platonism:

In a third way, it might be said that the nature (ratio) of the appearance is removed from no thing. For if you see whiteness in Socrates's face, and blackness in his hair, and a scar on his face, you will see all these after Socrates is said to be corrupted. Not that they will be where they were before; instead, they will be somewhere else—for instance, the whiteness in John, the blackness in a horse, the scar in Peter. (p. 200)

The idea is that the sensible quality itself—the whiteness, etc.—never ceases to exist, inasmuch as that thing is a universal that exists elsewhere. Autrecourt immediately confronts the objection that the whiteness of John’s face is only qualitatively and not numerically the same as the whiteness of Socrates’s face. To this he responds that in cases of exact similarity one has no grounds for denying numerical identity. So far, this third strategy sounds more like an in re theory of universals than like Platonism. But Autrecourt now shifts direction. For he immediately concedes that there is one good reason to postulate a numerical distinction between exactly similar qualities: their difference in location. Although some might deny this principle, and hold that the same thing can exist in more than one place, Autrecourt says that he at least, contrary to what some charge him with, “does not wish to proceed from premises so at odds with experience” (ibid.). Even granting that principle, however, Autrecourt thinks it cannot be shown that Socrates’s whiteness is distinct from John’s whiteness. For even if the first appears to your left and the second to your right, that does not prove they in fact have distinct locations. After all, he says, we are familiar with how mirrors can give the appearance of one thing’s being in multiple locations. Of course it would be ridiculous to suppose that there are really mirrors everywhere, deceiving us. But it would not be ridiculous to suggest that the material world is itself a kind of mirror for the reality of the Forms:

One might claim in this case that here below there is only the material, and that the actions of things are traced back to separate principles of the sort that Plato postulated—for instance, the action of this whiteness might be traced back to a separate Whiteness. . . . And then that material to which we attend is nothing other than a mirror, and by directing our attention to one place it naturally happens that the Whiteness is seen there. This is Plato’s view. (ibid.)

If sensible qualities are Platonic Forms, then of course they do not go out of existence.

5 On leaves changing colors, see this popular account: “The green chlorophyll disappears from the leaves. As the bright green fades away, we begin to see yellow and orange colors. Small amounts of these colors have been in the leaves all along. We just can’t see them in the summer, because they are covered up by the green chlorophyll” (http://www.sciencemadesimple.com/leaves.html). One might well wonder about the coherence of the idea that “small amounts” of yellow and orange have been in the leaves (but not large amounts?) and that yet we “just can’t see them.” Autrecourt, however, needs only the possibility of this sort of scenario. Of course, one may wonder what Autrecourt could say about the green that “disappears.” Ultimately, he might need to combine dispositionalism with reductionism or Platonism, or he might need to rethink what the true dispositions are in a much more thoroughgoing and radical way than the leaf example suggests.
It is easy to see how the first and third strategies would apply to the case of generation and corruption, although Autrecourt himself leaves this as an exercise to the reader. If we accept Reductionism, for instance, we might say that a cat is nothing more than a collection of microscopic particles, and that those particles never go out of existence. When that strategy is generalized, it follows that whatever exists always exists. Similarly, in the case of Platonism, if to be a cat is for some material to participate in the Form of Cat, then the destruction of a cat is not the destruction of anything. The Form continues to exist, and the material continues to exist. The only case whose application to substantial change is unclear is the second. Here, however, Autrecourt tells us how this will go, in the case of a human being:

On this [second] account, when the powers of a human being on which his principal operation depends are dormant, then the human being is said to have been corrupted, and when it is so in every part of some area, then the world is said to be corrupted with respect to that area. So it has been infinitely many times and so it will be if the world, with respect to its natural appearances, is said to be corrupted. (ibid.)

The idea is that what we think of as corruption is really the dormancy of one or more powers that give rise to the “principal operation” of a given thing. For a human being to die, then, presumably, is for those powers that account for its vital operations to go dormant. And for any region of matter, we think of something being corrupted there when the principal powers of that region fall quiet. In actual fact, on this account, those powers never truly go out of existence. (One might suppose that the human case would be different from that of other substances, since we have an incorruptible human soul, but in fact §29.4 will show Autrecourt to be remarkably doubtful as to whether the soul can be used to account for human persistence.)

Autrecourt takes these three scenarios to undermine any reason to believe that things come into and go out of existence. As he puts it, “each is possible; nor do I see that any of them has been sufficiently disproved by Aristotle” (ibid.). This will seem all the more true if one considers how these three options might be combined in various ways. Autrecourt himself says that he regards Reduction as the most plausible of the three. This is what one would expect, given his strict corpuscularianism, and Autrecourt is willing to pay the various prices associated with such an austere metaphysics. He is willing, in particular, to deny that anything other than atoms exists in the material realm. What his discussion shows, however, is that someone who wants to enrich a strictly corpuscularian account with other metaphysical entities has alternatives other than Aristotelian hylomorphism. One can, for instance, follow the second strategy and introduce dispositions. This is a strategy we considered already in Chapter 23, in the context both of the real powers of the scholastics and of the nominal powers of Boyle and Locke. Corpuscularians who help themselves to such powers can—at least in some contexts—offer a more plausible account of change than can strict corpuscularians. A corpuscularian willing to embrace Platonism has still more options. As I have stressed (§27.4), universals were almost never taken seriously within the scholastic tradition, or by its seventeenth-century critics, and Platonism in particular was generally regarded as wholly incredible. (One might here remember the heuristic picture of §4.1: that Platonism lies on one side of Aristotelianism, corpuscularianism on the other.) There is no reason in principle, however, why a broadly corpuscularian approach might not
be supplemented by Platonic universals, so that what exists in re is simply particles in motion, but that these variously arranged particles might truly be said to be human, or white, in virtue of participating in Humanity and Whiteness. (Perhaps, then, the linear spectrum of §4.1 needs to be bent into a circle.)

Autrecourt does not take these various lines of argument to prove anything. (In general, as his famous letters make clear, he thinks almost nothing can be demonstrated with certainty.) So even if we were willing to grant to Autrecourt the bare possibility of one or more of the accounts he describes, we might still insist that it seems overwhelmingly more plausible to embrace the commonsense notion that things do come into and go out of existence. This was Buridan’s complaint, which he seems to have aimed directly at Autrecourt’s view. It is both “obscure and dangerous,” Buridan charges, to contend that “a donkey was a stone, and a stone has always existed, and no horse or human being has ever been generated, although matter has been made a human being or a horse” (In De an. III.11; see §24.2). The “danger” to theology can perhaps be set aside, and the “obscurity” is surely part of the allure of Autrecourt’s view. But isn’t it all the same just an incredible picture of reality? Even if it is possible, what reason would we have for believing it?

Autrecourt sees that he needs to address these questions, if he means to do more than simply trade in the sorts of skeptical scenarios that can at best do nothing more than dislodge our prior beliefs, and that in practice never do even that much. His answer is to argue that our intuitions about the perfection of the created world favor the eternalist hypothesis. Here is his first attempt at how that argument might go:

If in each thing eternity is better than its corruption, it will then seem that the universe is more perfect if its parts—especially its permanent ones—are held to be eternal, just as its being [as a whole] is granted to be eternal. . . . Thus it might be argued as follows: [1] That should be posited in the universe that results in a greater perfection’s appearing in the universe, if no impossibility follows from its being posited. [2] But in fact it is the case that, by positing that permanent natural things of the sort discussed above are eternal, a greater perfection appears in the universe—and no impossibility follows from this. [3] Therefore etc. (Tractatus ch. 1, p. 201)

Autrecourt is well aware that this is not demonstrative. It depends on two questionable assumptions: that this is the most perfect possible universe, and that generation and corruption is incompatible with such perfection. This second assumption gets defended in considerable detail, and it seems that Autrecourt came back to this part of the Tractatus repeatedly, piling new arguments on top of old ones. The core idea is that although perfection is compatible with some kinds of change, inasmuch as there might be some perfect-making features of the universe that can be instantiated only through local motion, perfection is not compatible with a thing’s wholly ceasing to exist, or beginning to exist anew. Changes of that sort suggest that the world is becoming better or worse. Now inasmuch as modern readers are likely to treat it as obvious that the world does get better or worse, as it changes economically, politically, and environmentally, inter alia, it is hard to see the intuitive pull of this argument. But if one does embrace Autrecourt’s initial perfect-world assumption, then one can see why he is pulled in the direction of eternalism. For there can then seem something enticingly elegant about the idea that, when God created, he created just what there ought to be
in the world, with just as many things in it as its perfection requires. To be sure, things appear to come and go, but the underlying reality remains constant.

Although the details of Autrecourt’s argument are well worth exploring, I will pass them by in order to consider how these ideas would explode onto the scene once again in the seventeenth century. It would take that long because, as with his rejection of real qualities (§19.4), Autrecourt’s eternalism was quashed by Church authorities in Avignon, condemned in 1346/47 as “false, erroneous, and heretical.” Hence in the later scholastic era one finds only traces of it, in Buridan, and in Nicole Oresme, Albert of Saxony, and Marsilius of Inghen, all of whom take quite seriously right at the start of their De generatione commentaries the question of whether generation can be proved to happen. Since they cannot talk about Autrecourt, they talk about, as Oresme puts it, “the many ancient doctors who denied that generation occurs” (In De gen. I.1, p. 4). Oresme readily concedes to these “ancients” that there can be no demonstrative proof in favor of generation and corruption. We think there is no fire because we no longer perceive heat, but strictly speaking the inference is not certain: our senses could be deceiving us, or the fire could be failing to produce heat for some reason we cannot perceive. Such concessions to skepticism are in themselves quite remarkable: one sees nothing like this either in earlier scholastic discussions of these issues, or even in later discussions, Autrecourt’s influence having by that time apparently dried up. But even Oresme and his contemporaries are willing to bend only so far in the direction of Autrecourt’s eternalism. Although it cannot be demonstratively proved that things come into and go out of existence, that hypothesis “is the most plausible of all” (ibid., p. 6). This remained the orthodox judgment—not just unchallenged but unchallengeable—until the seventeenth century.6

28.3. Weak Permanence: Basso and Gassendi

One way to reject generation and corruption in favor of permanence would be from the top down, by rethinking the essences of things. If we are wrong about essences, then we may well be wrong about when things come into and go out of existence. If we are wrong enough, it might turn out that nothing comes into or goes out of existence. Yet although the previous chapter discussed how these issues are entwined in the seventeenth century, they are not connected quite so directly as this. Even if permanence requires rethinking the standard conception of essence, it does not usually seem to have followed from a critique of essences. The motivation for the permanence thesis comes, instead, through the post-scholastic critique of prime matter.

So long as prime matter is understood in metaphysical, Aristotelian terms, as halfway between nothingness and existence (as Averroes put it ([§3.3]), the permanence thesis cannot even arise. If this is the only stuff that endures through all change, then other
things must come into and go out of existence. Metaphysical prime matter is too thin an enduring substratum to count as the only thing that exists. Accordingly, permanence is never a serious option for scholastic Aristotelians. Only when prime matter is conceived of as wholly actual and corpuscularian does permanence loom into view. Atomists, for instance, do not have to embrace permanence (or any particular metaphysical thesis at all, for that matter [§5.4]), but once the atoms are made to be the permanent substratum of change (§3.2) it can suddenly seem attractive to think that those atoms are the only things that really exist, and that hence there is no real generation or corruption. This was never the majority view, but it is a picture that lurks, spoken or unspoken, behind much of the seventeenth-century rebellion against scholasticism.

It is, however, far from obvious why actualized prime matter should point in this direction, given that there are at least two large and dubious assumptions lying in the way. First, one has to suppose that this actualized material substratum is itself permanent. This is the conservation thesis of §2.5, which was embraced almost universally throughout our four centuries, first under the guise of prime matter, and then as some sort of actualized, corpuscular substratum. All the way through Locke, there was a general consensus that “the dominion of man . . . can do nothing towards the making the least particle of new matter, or destroying one atom of what is already in being” (Essay II.2.2). Yet even if one grants the conservation thesis, one can arrive at permanence only after making a still larger leap, to the conclusion that this enduring stuff is the only stuff there is. This is the startling notion that begins to get taken seriously in the seventeenth century, and that will be the primary focus of the remainder of this chapter.

The previous section revealed one kind of argument for this further conclusion: Autrecourt’s appeal to the universe’s perfection. So far as I can find, no subsequent authors lit upon this argument. What one finds instead in the seventeenth century is a line of thought with a more ancient pedigree, grounded in the principle that nothing is made from nothing. In one sense or another this principle was accepted throughout our period. As we saw in Chapter 2, this ex nihilo principle underwrites the thesis of an enduring material substratum, and subsequently informs various scholastic debates over exactly what the content of that substratum is. The principle had played an important role in Epicurus and even before then among the Presocratics. Aristotle took his hylomorphic framework, and in particular the potentiality–actuality distinction, to disarm those sorts of arguments. But what one finds in the seventeenth century—as if the intervening 2000 years had not happened at all—is a renewed conviction that the ex nihilo principle does have radical consequences regarding change.

An early instance is Sebastian Basso. His difficult and often obscure Philosophia naturalis (1621)—one of the first major statements of the anti-scholastic corpuscularian movement—makes an extended case against Aristotelianism by attempting to rehabilitate the ancient authors whom Aristotle had taken himself to have buried. One of Basso’s most prominent claims is that in cases of substantial change nothing is generated anew:

Here [the ancients] show how nothing is generated anew as a result of corruption, and that instead there is only the release of the same parts that had been joined together, since each of those parts is cut up into the smaller particles out of which it had been assembled. And thus fire,
air, water, and earth—which before had been tied together and hidden—now appear. And whereas before they were impeded from acting, they now—impediments removed—make an impression on the senses. (De forma III, p. 243; see also p. 11)

Basso himself rejects the Aristotelian elements and primary qualities in favor of a strict atomistic corpuscularianism, but he wants to take from Aristotle’s old adversaries the idea that nothing appears in generation that was not already in the thing corrupted. The target in particular is substantial form, which—as remarked in §28.1—precisely does seem to appear from nowhere in the newly generated substance:

This principle was accepted by all the philosophers: Nothing comes from nothing. From this they rightly inferred that nothing is made that did not preexist with respect to its parts. Otherwise would there not be something in that thing that did not preexist, at least with respect to its parts? From what, then, would that something be made, if the parts out of which it was made had not existed? Obviously it is necessary that they were made from nothing—which is impossible. Now if all the parts of that thing, however minute, preexisted, then it is certain that the generation of that thing is only a certain composition of the preexisting parts, as the ancients (prisci) held. What about Aristotle? He denies that the thing preexisted with respect to all of its parts actually, but only potentially. He claims that the thing’s matter preexisted, but not its form, unless it preexisted potentially. Yet he also says that this form is the principal part of a physical composite. Is this form made from nothing? He does not dare to say so. But then what? It is not the form that is made, he says, but the whole composite. What? Is not the physical composite made from parts that did not exist? They existed potentially, he claims, inasmuch as the form exists potentially in the matter from which it can be derived. But the form’s existing potentially in matter—is that for there to be parts of the form existing there, from which the form comes about? Not at all. But then what? One can only surmise. (De forma I, p. 149)

Basso takes the ex nihilo principle to show that, in cases of generation, all the ingredients of a thing must already exist. What is “impossible” (line 5) is not generation, but rather something’s coming into existence with some part that did not previously exist. This would violate the ex nihilo principle, requiring a supernatural act of creation to account for ordinary generation. From this preliminary result (lines 1–5), Basso gets two important conclusions. One is that generation is simply composition (lines 5–7). The other is that Aristotle’s theory of form is incoherent, because it violates this construal of the ex nihilo principle (lines 8–16). And although the argument is aimed primarily at substantial form, it applies just as well to accidental form, since such forms come into and go out of existence in alteration just as substantial forms do in generation and corruption. The argument therefore attacks the hylomorphic framework at its most fundamental level.

Chapter 2 considered in some detail how the ex nihilo principle interacts with the conservation thesis. One conclusion of that chapter was that the ex nihilo principle looks intuitively compelling only on a weak construal, as the principle that nothing is made without prior ingredients, but that for purposes like Basso’s it needs to be given a strong construal—as requiring that those ingredients endure in the thing newly made. So construed, the ex nihilo principle is equivalent to the substratum thesis of §2.2. With a few plausible further assumptions, this can be parlayed into the conservation thesis of §2.5: that this substratum of change is permanent. Basso clearly means to defend the conservation thesis, and he might seem to go even farther, all the way to the
permanence thesis according to which nothing comes into or goes out of existence. After all, the first of the two above passages begins with the claim that “nothing is generated anew” (line 1). The longer passage makes it quite clear, however, that Basso does not mean to go this far, inasmuch as the critical claim there is not that nothing is made, but that “nothing is made that did not preexist with respect to its parts” (line 2). Basso thus goes only part way toward the radical permanence thesis: although he accepts a very robust version of the conservation thesis, in insisting that the parts of things must endure through all change, he does not take the further step of insisting that only those parts exist, and that therefore everything is permanent. 7

Henceforth, I will refer to this halfway embrace of the permanence thesis—that the ingredients are permanent even if the wholes are not—as the weak permanence thesis, and refer to the full-blooded radical claim about the parts and the wholes as the strict permanence thesis. Given that the weak permanence thesis just is a version of the conservation thesis, it should not be surprising to find that it is common among post-scholastic authors, appearing in Descartes, Pierre Gassendi, Walter Charleton, Boyle, Locke, and many others. 8 What weak permanence adds to the conservation thesis is the idea that not only is there a permanent substratum of change, but that moreover, in some sense (see below), all the ingredients of the newly generated substance are permanent. This further claim is one that Aristotelians cannot embrace because, as we have seen (§28.1), their framework for substantial change requires the generation not just of a new whole, but of a new part—the substantial form in virtue of which the whole is indeed something new. Hence the weak permanence thesis is distinctively post-scholastic. It marks one extreme of a spectrum of views regarding how to think about the ingredients of change. At the other extreme lies the strict unitarianism of the Thomists, according to which only indeterminate, purely potential prime matter is conserved (§3.1, §25.2). Other scholastics allow more of the ingredients to endure through change (§4.3, §25.3), and by the late sixteenth century it becomes common to insist that the quantity of matter is conserved (§4.5). Weak permanence goes farthest of all down this road, insisting that all the ingredients of substances must endure through change.

7 For Basso, Nielsen’s “Seventeenth-Century Physician” remains a useful overview. A more recent and authoritative historical study is Lüthy, “Thoughts and Circumstances.” See also Ariew, “Descartes, Basso, and Toletus” and Last Scholastics pp. 133–4; Gregory, “Sébastien Basson.” Ariew and Grene, “Cartesian Destiny,” suggest that Basso was an influence on Descartes in this domain.

8 Charleton sets out the weak permanence thesis at Physiologia II.1.1.9: “nor is there any sober man who does not understand the common material of things to be constantly the same, through the whole flux of time, or the duration of the world, so as that from the creation therefore by the fiat of God, no one particle of it can perish, or vanish into nothing, until the total dissolution of nature, by the same metaphysical power, nor any one particle of new matter be superadded thereto, without miracle.” That this amounts only to weak permanence is clear in the detailed discussion at IV.1.1, which begins: “That nature or the common harmony of the world is continued by changes or the vicissitudes of individuals—i.e. the production of some and the destruction of other things, determined to this or that particular species . . . are positions to which all men most readily prostrate their assent.”

Locke sets out the weak permanence thesis at Essay II.26.2: “First, when the thing is made new, so that no part thereof did ever exist before, as when a new particle of matter does begin to exist in rerum natura, which had before no being; and this we call creation. Secondly, when a thing is made up of particles which did all them before exist, but that very thing, so constituted of pre-existing particles, which considered altogether make up such a collection of simple ideas, had not any existence before, as this man, this egg, rose, or cherry, etc. And this, when referred to a substance produced in the ordinary course of nature, by an internal principle . . . we call generation.” This passage occurs almost verbatim in the B Draft of 1671 (§134).

For Descartes, Gassendi, and Boyle, see below.
As natural a development as the weak permanence thesis is, the view is not easy to state with precision. Basso writes as if all the parts of a thing are permanent, and others routinely speak this way. According to Boyle, for instance, it is “not that there is really any thing of substantial produced, but that those parts of matter that did indeed before preexist . . . are now brought together” (Origin of Forms [Works V:328; Stewart p. 45]). But this cannot be strictly right. For if it is granted that new, composite substances come into existence, then it will surely be granted that those new substances may have new parts. Weak permanence will allow not only that plants come into existence, for instance, but also that roots and leaves do. Obviously, the doctrine is not meant to block these results, but only to require that material substances are composed at some level of permanently enduring corpuscles. For the atomist, it is easy to spell this claim out precisely, because it will of course be at the atomic level, and presumably only there, that weak permanence holds (§3.2). Given that Basso is himself an atomist, we can understand his talk of parts in that way. But weak permanence is consistent with agnosticism toward atomism, as in the case of Boyle just above, or even with the rejection of atomism, as in Descartes’s case. For figures such as these, weak permanence can be true provided just that there is some level of composition at which, in fact, the constituent parts are permanent.9

Unfortunately, the weak permanence thesis is often stated in terms even more misleading than Basso’s, as the thesis that substance is never generated or corrupted. This saying appears most prominently in Descartes’s synopsis to his Meditations:

Absolutely all substances, or things that must be created by God in order to exist, are by their nature incorruptible and cannot ever cease to exist unless they are reduced to nothingness by God’s denying his concurrence to them. (VII:14)

On its face, this looks like an unambiguous statement of strict rather than weak permanence, and some would read Descartes in that way. But the passage is not decisive, because it is quite clear that many authors use this seemingly very strong formulation to make what is intended to be a weaker point. According to Gassendi, for instance, “it should be maintained always that in generation no substance is made anew, but instead what already exists is mingled together; and so too in corruption nothing ceases to be, but instead is separated into its remnants” (Philosophiae Epicuri syntagma II.1.17 p. 65; tr. Stanley, History of Philosophy p. 871b). And, according again to Boyle, “no new substance is in generation produced, but only that which was preexistent obtains a new modification or manner of existence” (Origin of Forms [Works V:328; Stewart p. 45]). These look for all the world like statements of strict permanence, and perhaps they reflect a certain temptation on their authors’ part to embrace that more rigorous claim. We ought to be extremely suspicious in reading these passages, however, because in every case these authors offer up this doctrine without any argument at all, as if it were axiomatic. Yet if taken literally, as a statement of strict

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9 The no-new-part formulation of weak permanence also appears in the Boates, where again it is clearly not intended to preclude generation and corruption: “Ad quod nos respondemus, nullam (ordinaria via, creatione seposita) dari substantialem mutationem seu generationem, ita accipiendo hanc vocem quomodo ipsi accipiant, ut nimium substantialis mutatio seu generatio sit illa qua ipsius substantiae quae generatur aliqua pars substantialia de novo fit cum non existet prius. In quo sane nulla est absurditas neque offerri quicquam potest cur ad substantiae generationem magis necessarium sit ut aliqua ipsius pars quam ut tota ex nihilo fiat” (Phil. nat. reformata 1.3.12).
permanence, then such claims would amount to the most radical of metaphysical theses, contrary not just to common sense but also to every philosophical and theological tradition from Plato onward. It would be as if these authors, without any argument or even discussion, had decided without warning to return to the monism of Parmenides, or to the most radically reductive atomism of Democritus.10

To be sure, one can find such radical ideas. They are in Autrecourt, as we have seen, and they reappear in the seventeenth century, as we will see shortly. But Descartes, Gassendi, and Boyle not only do not tell us that this is what they are up to, but on the contrary in other places make it quite clear that they do not mean to go nearly so far. That this is so in Boyle’s case seems clear from his overall metaphysical quietism (§23.2), which is inconsistent with such a speculative metaphysical thesis. It is also required given his embrace of real essences (§27.6). As remarked earlier, only an anti-essentialist, such as Hobbes or Conway (§27.5), can embrace strict permanence. That Descartes too means to embrace only weak permanence follows from earlier discussions of his exceptionally loose conception of substance, which includes not just living and non-living natural bodies but also artifacts (§24.5) as well as the mind–body composite (§25.6), plus all the integral parts of bodies, all the way, infinitely far down (§26.1). (I return to Descartes’s case in §28.5.)11

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10 Boyle’s full statement of the no-new-substance formula is worth quoting: “These things premised, it will not now be difficult to comprise in few words such a doctrine, touching the generation, corruption, and alteration of bodies, as is suitable to our hypothesis, and the former discourse. For if in a parcel of matter there happen to be produced (it imports not much how) a concurrence of all those accidents, (whether those only, or more) that men by tacit agreement have thought necessary and sufficient to constitute any one determinate species of things corporeal, then we say that a body belonging to that species, as suppose a stone or a metal, is generated, or produced de novo. Not that there is really any thing of substantial produced, but that those parts of matter that did indeed before preexist, but were either scattered and shared among other bodies, or at least otherwise disposed of, are now brought together, and disposed of after the manner requisite to entitle the body that results from them to a new denomination, and make it appertain to such a determinate species of natural bodies, so that no new substance is in generation produced, but only that which was preexistent obtains a new modification or manner of existence” (Origin of Forms [Works V:328; Stewart pp. 44–5]).

In “Form, Substance, and Mechanism” pp. 63–4, I wrongly credited Boyle with the view I am now calling strict permanence. For other examples of that mistake, see Conn, Locke on Essence pp. 85–6 and Desmond Henry, Medieval Mereology p. 124.

11 Descartes repeats the no-new-substance formulation in the Second Replies: “Nec quidem etiam habemus ullam argumentum vel exemplum quod persuasurit aliquam substantiam posse interire” (VII:153), and also to Regius: “quod plane repugnat ut substantia aliqua de novo existat, nisi de novo a Deo creetur” (III:505).

It is very important to understand the meaning of the no-new-substance principle in Descartes, because otherwise it is hard to resist reading him as a material monist, committed to there being just one res extensa. (For recent statements, see Lennon, “The Eleatic Descartes”; Secada, Cartesian Metaphysics ch. 8; Sowaal, “Cartesian Bodies.”) The idea is implausible on its face, given the many passages in which Descartes commits himself to ordinary, finite bodies as substances, along with the complete absence of any texts that defend monism. (For a discussion of the texts see, e.g., Slowik, “Individual Corporeal Substance” and Kaufman, “Cartesian Substances.”) Still, as §28.5 will discuss, if Descartes embraces strict permanence, then monism can easily seem to be the only remaining option. But once one sees that the no-new-substance formula is a commonplace among contemporaries who clearly do not embrace strict permanence, monism becomes largely unmotivated as a reading of Descartes. One can thereby also avoid the embarrassment that faces the monist with respect to what finite bodies are. They could not be modes, despite what Gueroult rather glibly asserts (Descartes I:65–74), because we know what the modes of extension are—size, shape, motion, position, duration, number, etc. (Principles 1:69)—and we know that a dog, say, is nothing like that. Perhaps a finite body could be a cluster of modes, but there is no reason to think Descartes would say so. What finite bodies seem to be, quite plainly, on the monist scheme, are integral parts of the one material substance. But that is an embarrassing result for the monist, because it seems clear that Descartes is an actualist about integral parts (§26.1), and that he certainly does not hold a version of the Simple View (§26.2), which denies the reality of the parts of a substance.
The case of Gassendi is clearest of all. In the extended discussion of generation and corruption in his magnum opus, the *Syntagma philosophicum* (1658), he takes up a series of objections to his strictly corpuscularian, atomistic account:

1. the enduring matter, existing in potentiality, needs form to actualize it;
2. without such a form, there would be no distinction between generation and alteration;
3. without such a form, natural things would not be essentially distinct;
4. without such a form, all composite things would be merely heaps, not entities in their own right (*entia per se*). (II.1.7.4, I:473–4)

The first objection amounts simply to stating the heart of scholastic hylomorphism. The following three objections highlight various consequences that scholastic authors constantly allege to follow from a rejection of hylomorphism. Since the issues involved in (3) and (4) have been considered elsewhere (Chs. 27 and 25), we can focus here on (2). Gassendi categorically insists that his account recognizes the distinction: “generation can always differ from alteration, inasmuch as through generation a thing is said to be made absolutely, or to come into light for the first time, whereas through alteration a thing is said to be made such, or to vary in its features while its essence persists” (ibid. I:473b). Having said this, however, Gassendi anticipates the objection that this does not count as substantial generation. Here his response is more guarded:

As for whether this precludes substantial generation, the question is clearly verbal. For it is precluded if you mean that something substantial is produced that did not at all preexist through either the whole or the parts. In this there is nothing absurd; on the contrary, it is entirely appropriate, since otherwise a thing would be made *ex nihilo* either in whole or in part. On the other hand, substantial generation is not precluded if you mean that a composite emerges that has true subsistence, since it is the case both that its parts subsist on their own, and that they cohere all together, being somehow tied to one another. (ibid.)

Gassendi claims that we should deny substantial generation if that entails violating weak permanence. But he sets out that thesis carefully, as requiring that “*either* the whole or the parts” preexist (line 3), which leaves room for there to be new wholes, and even new parts of wholes, so long as in every case they are composed of preexistent parts. Since this is all his version of permanence requires, he can allow that the notion of substantial generation is unproblematic if it means only that from the enduring atoms a new “composite emerges” (line 5). ¹²

Given that all of these authors commit themselves to the coming and going of substances in the world, and given that they treat the no-new-substance formula as if it were uncontroversial, we need some other way of understanding what that formula means. The most likely solution is that they intend it as a statement of weak permanence. ‘Substance,’ in the context of the formula, should therefore be understood as referring not to the ordinary substances that come into and go out of existence, but to the enduring substratum of change, which everyone during our period agrees to be incorruptible, but which for post-scholastic authors becomes not just an indeterminate metaphysical ingredient, but the actual physical stuff from which complex bodies

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¹² For Gassendi on substantial change see also the protracted discussion in *Animadversiones* I:389–407.
are composed. What we thus find in Gassendi, Descartes, and Boyle is a moderate position on the subject of generation and corruption. Disallowed is any conception of a metaphysical part, such as a substantial form, that would have to come into existence wholly anew—that is, without any preexisting ingredients to compose it. But this is not to say that nothing new can come into existence. There can be new wholes, provided they are constituted entirely (at some level) out of preexistent parts. The trouble with such a view is that it is not easy to see why we should regard these aggregates as genuinely new at all. All such aggregates are, as these authors themselves take pains to stress, is old stuff, differently mixed. Without the metaphysical resources of the scholastics to account for genuine substantial change, it is extremely tempting to deny that there ever is substantial change. So if we have not yet arrived at the radical thesis of strict permanence, we nevertheless stand right on the brink.

28.4. Strict Permanence: Gorlaeus and Hobbes

The strict permanence thesis—that nothing naturally begins or ceases to exist—can be found hinted at in various early anti-scholastic treatises. One sees something like it in Giordano Bruno, who cites Ecclesiastes, and in Nicholas Hill, and even in Galileo. It

13 Descartes plainly uses ‘substance’ in the sense of the permanent substratum of change, as when he refers to the "substance of the brain" (Treatise on Man XI:130), the "substance of the bread" (Fourth Replies VII:250), and the "substance of the body" (Principles II.5). (I owe this point to Stuart, "Descartes’s Extended Substance" p. 100.) In these cases, ‘substance’ refers not to the corporeal substance itself, but to something belonging to that substance, which in the context of Descartes’s thought—barring the attribution to him of some sort of exotic ontology—can be only the integral parts that endure through change.

14 I do not know where the no-new-substance formula comes from. Interestingly, it appears in Jan Baptiste van Helmont, who explicitly marks it as a new doctrine: "Whence I collect it into a new position for the schools: that no substance is to be annihilated by the force of nature or art. It has always seemed an absurd thing to me that a matter should be annihilated by death should be true substances" (Oriatriche p. 67; see Debus, Chemical Philosophy II:329). Although Helmont’s counts as an early statement of this principle, his works were published in Latin only posthumously, in 1648, and translated into English in 1662. Some other relevant early texts are quoted in the following note.

Leibniz endorses the no-new-substance principle but offers quite a strained pedigree for it, finding it in a pseudo-Hippocratic work and, quite absurdly, in Albert the Great, who surely thought no such thing: “j’accorde encor que toute forme substance ou bien toute substance est indestructible et même ingénérable, ce qui étoit aussi le sentiment d’Albert le Grand et parmi les anciens celui de l’auteur du livre De diaca qu’on attribue à Hippocrate. Elle no sçauraient donc naitre que par une créance” (to Arnauld. 1686 [Phil. Schriften II:75; tr. Ariew and Garber p. 78]).

15 Bruno suggests strict permanence at De la causa dial. 2, p. 53 (tr. p. 46): “non gli corpi ne l’anima deve temer la morte, perche tanto la materia quanto la forma sono principii constantissimi.…” He goes on to quote Ecclesiastes 1:9–10: “What is it that has been? The same thing that shall be. What is it that has been done? The same that shall be done. Nothing under the sun is new.” Granada, citing De la causa, describes Bruno as a defender of “a rigorous ontological monism” according to which the universe is a “unique substance” and individual beings are accidents ("New Visions" p. 281).

Hill suggests strict permanence at Philosophia epicurea n. 117: “Entis quatenus entis non est aut causa aut ratio; omnes vero quas tuemur generationes sunt degenerations, primorumque principiorum ab incusato et indeterminat statu lapsus et deflectiones.”

For Galileo on strict permanence, see Dialogo dei massimi sistemi, first day: “Di più, io non son mai restato ben capace di questa trasmutazione sustanziale (restando sempre dentro a i puri termini naturali), per la quale una materia venga talmente trasformata, che si deva per necessità dire, quella essersi del tutto destrutta, si che nulla del suo primo essere vi rimanga e ch’un altro corpo, diversissimo da quella, se ne sia prodotto; ed il rappresentarvisi un corpo sotto un aspetto e di lì a poco sotto un altro differente assai, non ho per impossibile che possa seguire per una semplice trasposizione di
seems to have been given its first sustained post-scholastic defense by David Gorlaeus, whose stunningly bold *Exercitationes philosophicae* (c.1611; publ. 1620) rejects hylo-morphism entirely, and replaces it with an atomism that insists on strict permanence. According to Gorlaeus, whatever is real is indivisible, and so the only things that exist in the material realm are atoms. Human beings are not soul–body composites, but souls alone, and the body is not part of us. Aggregates are entities only because we conceive of them as such. Accordingly, generation and corruption must be rejected:

I completely deny that any body is made, except by creation alone, when God created this world. I deny that anything has gone out of existence, or can go out of existence, unless it is brought to nothing by that same God. I deny that any body has been changed into another, or that it can be changed. (exerc. 14, p. 256)

Accordingly, in a weird but apposite inversion of the conventional wisdom, Gorlaeus denies not that things are made *ex nihilo*, but that they made *ex aliquo*: nothing, he insists, is ever made from something. Conceding that this will look ridiculous to many, he mischievously remarks nevertheless that “since we are inverting everything, we should invert this too” (exerc. 15.1, p. 278). Remarks such as these are the only reminders that this brilliant, precocious work was written by a twenty-year-old. 16

These same ideas appear in Hobbes, who was born three years before Gorlaeus but had the good fortune of living sixty-seven years longer. We have seen intimations of Hobbes’s view several times already, in his defense of the conservation of body (§2.5) and in his anti-essentialism (§27.5). In both cases, he pushes these doctrines all the way to a rejection of generation and corruption. Thus, in his *De mundo* (1642), he goes from insisting that matter cannot be corrupted to insisting in general that *ens*—being—cannot be corrupted:

If the question is whether numerically the same being (*ens*) can come back into existence, it is clear that it cannot. For in order for something that exists to come back—that is, to exist again—it must be supposed that the preceding thing has gone out of existence. But a being cannot naturally go out of existence. For even if a ship or a plank ceases to be a ship and a plank, it nonetheless never naturally ceases to be a being. For a being, unless it is annihilated, does not cease to be a being. But to annihilate is a supernatural task, for God. (12.5)

The study of Gorlaeus is in its infancy, but good preliminary sallies can be found in Lüthy, “Gorlaeus’ Atomism”; Gregory, “David Van Goorle”; and Meinel, “Early Seventeenth-Century Atomism.” Lüthy argues that Gorlaeus’s embrace of the permanence thesis is indebted to Nicholas Taurellus (“Gorlaeus’ Atomism” p. 283), and perhaps this is suggested at *Philosophiae triumphus* pp. 120–5, but I cannot make out exactly what Taurellus’s conclusion is on those pages.
The *De corpore* subsequently elaborates on this doctrine by treating generation and corruption as simply the coming and going of accidents:

When we say that an animal, a tree, or any other named body is generated or destroyed, even though these are bodies, it should not be thought that a body has been made from non-body, or non-body from body, but a non-animal from an animal, a non-tree from a tree, and so forth. That is, those accidents on account of which we name one thing an animal, another a tree, and another something else are generated and destroyed, and consequently those names that applied to them before no longer apply. (8.20)

So why do we say that now there is a tree, and now there is not? Not because anything new has come into existence, but only because there is now an accident that there was not before, which leads us to stop using “those names that applied to them before” (lines 5–6). Judging from this passage in isolation, one might at least suppose that Hobbes allows the generation and corruption of accidents (line 4). But Hobbes has no place in his ontology for any such entities (§7.1, §10.2). All he recognizes are bodies and motions: thus “bodies are things, and not generated; accidents are generated, and not things” (ibid.). Hence Hobbes can conclude in general, as in the first of the above passages, that beings never naturally go out of existence. Perhaps the most express statement of his view comes again in the *De mundo*, which offers a general theory of change. All change, Hobbes argues, consists in the motion of a thing’s parts, which we detect through changes introduced in our perceptual faculties. As for the difference between accidental and substantial change, he remarks that “when a thing is changed so extensively that it deserves a new name on account of its new appearance, then we say that the thing that produced the earlier appearance has been corrupted, and that another thing, exhibiting a new appearance, has been generated” (7.1). In actual fact, “things themselves do not perish through change, but only their images and looks” (7.2)—a remark that leads Hobbes into a long discussion of how we are to think about the permanent prime matter that underlies change. His conclusion, of course, is that prime matter is simply body (§2.5).

As similar as Gorlaeus’s and Hobbes’s views are, they differ in one prominent respect. According to Gorlaeus, everything that exists is simple: “we hold that no being is composite, and that whatever is is simple” (*Idea physicae* 4.7). Hobbes does not say this, and cannot say this, because his materialism, combined with his rejection of atomism (§5.4; Ch. 26 note 14), entails that in fact nothing is simple. This should make one wonder how Hobbes can possibly defend strict permanence: for it would seem that composite things always admit of the possibility of being broken apart, and so always admit of the possibility of ceasing to exist. The key to Hobbes’s position, as I understand it, is that he rejects this inference. He believes, that is, that a body can continue to exist even after it has been broken apart and scattered. This is, indeed, precisely what he says: in considering the conditions under which a body can be regarded as persisting through time, he remarks that “a body is always the same, whether the parts of it be put together or dispersed; or whether it be congealed or dissolved” (*De corpore* 11.7; see §29.5). This means that although Gorlaeus and Hobbes start out from similar places, they arrive at quite different pictures. Gorlaeus, limited as he is to simple substances, cannot treat ordinary objects as genuine entities. Hobbes, because he allows composite bodies, can allow that dogs and cats and stones exist. But their existence is not at all
what one would naturally suppose, because the body that is the dog will continue to exist forever, even after the integral parts of that body have been “dissolved” and “dispersed.” Of course, we will not then call it a dog, but its being a dog was always just an accidental feature of the body.

The radically reductive character of these views makes them easy to understand, but hard to take seriously. The remainder of this chapter will consider the most prominent line of argument in favor of strict permanence. The following chapter will then consider how the implausibility of these theses might be mitigated by an explanation of what apparent cases of generation and corruption actually consist in.

28.5. The Part–Whole Identity Thesis

The two conservation theses considered in this chapter—weak and strict permanence—are part of a family of views loosely associated with one other during the seventeenth century. This family includes corpuscularianism (§1.3), the substratum thesis (§2.2), atomism (§3.2, §5.2, §5.4), the rejection of the substance–accident distinction (§7.1), actualism regarding parts (§26.1), and anti-essentialism (§27.5). None of these views, however, whether severally or jointly, entails strict permanence. It might be thought that at least anti-essentialism would yield some version of the permanence doctrine, on the grounds that if a thing has no essential properties then there can be no fact of the matter about whether it starts or stops existing. This, however, is not so. One might, for instance, think that even if none of a thing’s properties is essential, still there are various combinations of properties, in various circumstances, the loss of which entails the thing’s corruption. Corpuscularianism too does not entail permanence, and again not even the weak version. One might, for instance, think that all there are in the material realm are bodies variously arranged, and yet accept that the parts of a composite substance—all the way down—are individuated by that substance, with the result that when a body is corrupted it is corrupted all the way down. In principle even an atomist might think this, since physical indivisibility need not entail permanence (§5.4).

Weak permanence is entailed—or at least nearly so—by corpuscularianism in conjunction with the substratum thesis. For if something has to endure through all change, and if the only thing one lets into one’s physical ontology is bodies, then it will have to be some bodies that endure through all physical change. This is not yet weak permanence: it shows only that for every physical change there is one or another persisting body, rather than the stronger conclusion that at some sufficiently minute level all bodies endure through change. Reflection on the motivation for the substratum thesis, however, shows why that stronger conclusion might seem justified. For, as we saw in Chapter 2, the substratum thesis depends on the intuition that nature does not make things without ingredients, and that those ingredients must exist prior to the making and after the making, as a constituent part of the new substance. For scholastic authors, there were as many ways to understand this requirement as there were theories of prime matter. Something like this intuition is still at work in Newtonian physics, with its doctrine of the conservation of mass, and remains in place in modern physics, which insists on the conservation of energy. The only way for a strict corpuscularian to honor this thesis, however, is by postulating the conservation of bodies. Without anything like
matter, form, mass, or energy to endure through change, corpuscularians must invoke enduring bodies as their ingredients. In order for those ingredients to be sufficient, it seems natural to think that, at some level of composition, all the bodies must endure. This is why, as we saw in §28.3, many seventeenth-century authors treat weak permanence as virtually axiomatic.

This line of thought does not, however, yield strict permanence. For one might suppose that although the stuff of the universe endures through all change, still that stuff can make new things, when organized in one way or another. This is what scholastic authors thought (their stuff being prime matter), it is what Basso and Gassendi thought (their stuff being atoms), and it was what commonsensical modern physicists think (their stuff being energy). The proponent of strict permanence therefore needs some further premise. Gorlaeus is quite clear about this: his further premise is the doctrine that the whole is nothing over and above its parts:

We willingly grant that composites are to be posited. But we do not recognize some one being that should be called the composite. On the contrary, it is the many entities—namely, the composite parts—that we call the composite, because they are composed. We hold that each and every part both has its own essence before composition, and retains that essence afterwards. Neither is a being made that is numerically one, nor is one being made from these parts. On the contrary, they are united and mixed so as to make one continuum, which is one being by aggregation, not by essence. (Exercitationes 12, pp. 224–5)

This is in effect a statement of the strict permanence thesis, couched in terms of a refusal to postulate any further entity beyond the composed parts. The general rule, which he states over and over in various ways, is that “no composite is other than its parts” (Idea physicae 8.1).

This part–whole identity thesis, as I will call it, has a long history, first in ancient philosophy and again among the twelfth-century Nominales. Among scholastic authors, the subject was debated extensively but inconclusively. 17 Affirming the thesis

For ancient discussions of the part–whole identity thesis, see Barnes, “Bits and Pieces.” Sextus Empiricus characteristically argues against the reality of wholes by arguing on one hand that the part–whole thesis cannot be true, but on the other hand that it cannot be false (Outlines of Skepticism III.98–9). For the Nominales, see Normore, “Abelard and the School of the Nominales” and “Tradition of Medieval Nominalism.” For Peter Abaelard in particular, see Arlig, “Medieval Mereology.”


The Coimbrans themselves find both sides plausible, but favor the side that denies identity, which they associate with, among others, Avicenna, Scotus and his followers, various Thomists, and Walter Burley (Coimbrans, In Phys. I.2.1.1). Burley does indeed insist that the whole is distinct from its parts, relying on the indiscernibility of identicals (In Phys. I, f.16ra–vb). For Scotus, see In Meta. VIII.4 and Ord. III.2.2 n. 7 (Vat. IX nn. 73–7), which offers a series of characteristically powerful arguments, resulting in the doctrine that there is a form of the whole that is the essence of the whole substance, distinct from the form of the part that is the substantial form. Cross discusses Scotus’s position in detail in Physics of Duns Scotus chs. 5. See also Normore, “Ockham’s Metaphysics of Parts.”

Aristotle seems to endorse part–whole identity when he remarks that “there is no whole over and above the parts” (Phys. IV.3, 210a17). Metaphysics Zeta, however, concludes with the opposite lesson, that “the syllable is not its elements” (1041b12). Rejecting both of these lines of thought, one might instead suggest that the question of part–whole identity cannot even arise for Aristotle, in light of passages where he seems to deny that a substance has actual parts (§26.1–2). It is a further measure of the scholastic disinterest in the Simple View of §26.2 that this dismissive solution to the part–whole identity question is not in general even considered.
does not require corpuscularianism, since for an Aristotelian it will be metaphysical parts, just as much as integral parts, that make up the whole. The part–whole identity thesis also does not entail any version of permanence, since one might well think—as Aristotelians do—that substances are generated and corrupted as the parts come and go. Here again, a great deal rests on the credibility of the scholastic claim that substantial forms, unlike matter, are not conserved. Someone who rejects weak permanence on the grounds that metaphysical parts come into and go out of existence can account for generation and corruption even given part–whole identity. If, however, one insists on weak permanence, then it together with the part–whole identity thesis immediately entails strict permanence. For if all the parts (at any one level of composition) are permanent, and if those parts are identical with any whole they compose, then—by the indiscernibility of identicals—any such whole must likewise be permanent. Unsurprisingly, then, one finds the part–whole identity thesis not just in Gorlaeus, but also in Hobbes (§29.5). In contrast, authors who embrace weak but not strict permanence must, if they are to be consistent, deny the part–whole identity thesis. In §28.3 we saw that Basso and Gassendi do just this. Basso restricts the *ex nihilo* principle so as to allow something new to arise from its parts: “nothing is made that did not preexist with respect to its parts,” and Gassendi allows that preexistent parts can come together in such a way that “a composite emerges that has true subsistence.” To be sure, both Basso and Gassendi wish to *reduce* facts about complex bodies to facts about their integral parts, but neither wishes to *identify* the whole with its parts.

We are now in a position to see just what drives corpuscularians toward strict permanence. If they accept the substratum thesis, as they all do, then it is difficult to resist weak permanence. To go from there to strict permanence, all that is needed is the part–whole identity thesis. And although by no means everyone accepted that thesis, it is an extremely attractive view. We can see as much by looking at the quite sophisticated scholastic disputes over this subject. Although the more ontologically profligate scholastic authors—in particular Scotus and his followers, as well as some Thomists—argued that the whole is something over and above its parts, the part–whole identity thesis was widely embraced. Unsurprisingly, given his parsimonious inclinations, Ockham was among its defenders. He offers in its favor a regress argument that would be very influential on later discussions. Let the parts be *a* and *b*, and the whole be *c*. Now suppose that *c* is not identical to *a* and *b*. In that case we can ask about the whole *a, b, c*. If that whole is something further, *d*, then we are clearly off on an unacceptable infinite regress. If, however, we can deny the existence of *d*, then we should by the same reason be able to deny the existence of *c*. Hence Ockham concludes that a composite substance is nothing beyond form and matter. One finds versions of this same argument in later authors stretching from Buridan to Franciscus Toletus.18

Buridan contributes another influential argument. Suppose a one-pound weight is divided into two half-pound weights. The whole, which weighed one pound, would seem no longer to exist. How can it be, then, that the two parts exert the same

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influence on the scale that they did as a whole? Did the whole have no weight? The best solution, Buridan suggests, is to say that the whole just was those parts. 19

It is by no means obvious how either of these arguments is to be answered by those who would deny the part–whole identity thesis. And if that identity thesis was attractive to scholastic authors—even to a conservative figure like Toletus—then it is no wonder that the corpuscularians would find it attractive. After all, the core motive for the view is parsimony: that there is just no need for the metaphysical extravagance of postulating some further entity—a whole—above and beyond the parts. One would expect to find post-scholastic authors lining up behind this position in droves. In a way, then, the surprise is not that authors like Gorlaeus and Hobbes embrace strict persistence, but that so many others do not. It is a testimony to their felt need to retain at least some measure of a commonsense ontology that Basso, Gassendi, and others refuse to follow the logic of their position all the way to the sort of austere version of strict permanence that would deny the generation and corruption of living things and other substances. The price of doing so is to relinquish yet again some of the austerity of the pure corpuscularian framework that the first generation of post-scholastic authors have as their ideal. Beyond positing simply particles in motion, these authors have to countenance the obscure idea of a whole that is somehow constituted from its parts, but without being identical to those parts. Scholastic authors are under no such pressure, and so many gladly embrace the part–whole thesis without suffering any radical consequences, because they can account for the ordinary coming and going of substances in terms of the coming and going of substantial forms. To reject substantial forms in favor of corpuscularianism therefore has its cost: either one must buy into an ontology of wholes as something over and above their parts, or one must let go of the possibility of generation and corruption.

Weak permanence, together with part–whole identity, entails strong permanence. This is not to say that it entails Gorlaeus’s version of the theory, according to which the only things that exist are atomic simples. Another possibility, consistent with these general metaphysical constraints, is that there be no proper parts at all, but only a single, permanent whole. This old idea of monism would not come back into currency until Conway (§27.5) and Spinoza—but just as Democritus seems to have taken inspiration from the Eleatics, so in the seventeenth century that influence can be seen to have worked in the other direction. From a conception of the material realm as containing nothing more than permanent atomic simples, it is easy to form the view that in fact there is just one, global atomic simple, itself permanent.

Still another way to defend strong permanence is to go Hobbes’s route, as described at the end of the previous section, and deny the link between divisibility and corruptibility. On this approach, a body continues to exist even after its parts are divided. Although Hobbes does not explain why he takes this line, the motivation is not hard to see. For if one is persuaded by strict permanence, and also persuaded that everything is

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19 Buridan’s weight argument: “Item sequitur quod duae semilibrae totidem traherent statarem remota ab eis una libra quantum traherent cum illa libra—quod est falsum, quia tunc illa libra nihil traherent. Consequentia patet per te quia si libra dividetur in duas medietates istae duae medietates tantumdem trahunt quantum trahebant cum libra quae erat totum ipsarum et tamen ablat a est illa libra cum non remaneant nisi partes quae nec sunt nec fuerunt illa libra” (In Phys. 1.9, f. 12va). The argument is repeated by Albert of Saxony, In Phys. 1.7, pseudo-Marsilius of Inghen, In Phys. 1.9, and John Major, Sent. IV.43.2.
composite, then one must have a way of saying that those composite entities exist for as long as their constituents do, even if dissolved. The seeming absurdity of this result is part of what led Gorlaeus to deny that composites exist. But there is at least logical space to embrace the seeming absurdity, and allow that the collection of particles—the thing picked out by the word ‘stone’—continues to exist even after all its various particles have been washed away down the Colorado River. This is, however, not a view that authors during our four centuries generally show much interest in. To waive all restrictions on the conditions under which parts can be said to compose a whole is to violate one of the fundamental axioms of the substance-based ontology that grounds our period: that genuine existence requires genuine unity. The link between existence and unity has animated much of the four previous chapters, and it would be highly desirable to have a better understanding of why we should insist on this link. Here, however, I have to content myself with merely highlighting its status as a virtually unchallenged axiom.

Corpuscularians committed to part–whole identity can preserve the link between existence and unity by denying, as Gorlaeus does, that there are composite substances. The many scholastic authors who are committed to part–whole identity do not want to go that route, of course, but it is not obvious what their alternative is. For if the composite whole just is its various integral and metaphysical parts, then Hobbes’s scattered objects loom: the whole will continue to exist if and only if the parts continue to exist, no matter how disunified. (Scotus had raised the specter of precisely this outcome as an objection against part–whole identity.) One way in which statements of the part–whole identity thesis try to grapple with this difficulty is by stipulating that the whole is identical to the parts “taken together and unified.” Yet according to opponents of part–whole identity, the need to insert this proviso shows that the parts cannot be strictly identical to the whole, and it is easy to see their point. For if the proviso is just an ontologically innocent way of saying that the whole is equal to the collection of the parts, then we have not blocked the absurdity of a disunified collection counting as a whole. If, on the other hand, the unity requirement imposes some more substantive constraint, then it seems we must deny strict identity: the whole would not be simply the parts, but would be the parts so arranged. Whatever ‘so arranged’ amounts to, it would seem to preclude strict identity.  

The wide range of metaphysical options available to scholastic

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20 Proponents of the part–whole identity thesis generally insist on the proviso that the parts must be unified, in order for them to be identical to the whole. Thus Ockham, e.g., holds that “totum non est alius a partibus simul iunctis et unitis” (Summula I.19; Opera phil. VI:205). And John Major: “totum est suae partes simul sumptae” (Sent. IV.43.2). That of course leads to question about what this further “unity” amounts to. For Burley, this is the critical weakness of the part–whole identity thesis, and indeed he contends that what distinguishes the whole from its parts is precisely its unity (In Phys. I, f. 16va). This is quite a serious objection, since most of the proponents of part–whole identity do not accept the strict unitarian theory, associated with Thomism, that provides a cost-free explanation of what such unity consists in. Ockham’s most detailed discussion of these issues occurs in Quaest. var. 6.2 (Opera theol. VIII:207–19), where he contends that unified parts are those that lack a relation to one another, and that it is only when the parts are disunified that they stand in a relation to one another that precludes them from being a whole (VIII:210). Ockham’s overall position is carefully assessed by Cross, “Ockham on Part and Whole,” who pays particular attention to Scotus’s claim that if the whole is just the parts, then there is no viable subject for those accidents that are properties of the whole. It is not only the scholastics who appeal to metaphysical parts to explain the unity proviso. Gorlaeus, since he allows modes into his ontology (§13.4), is able to describe the unity of the composite parts as “tantum modum essendi” (Exerc. 12, pp. 226–7), an application of the theory of modes that can be found as well in Suárez (Disp. meta. 7.1.18) and in Scheibler (Metaphys. 1.6.3.4, pp. 76–7).
authors ensures that the debate at this juncture is highly complex. It is worth noting, however, that proponents of the rigorous unitarian conception of substantial unity have a straightforward way of responding to this line of attack, a response not open to others. In cases where a body is simply a collection of integral parts, there is nothing about those parts that guarantees unity. Similarly, for the pluralist regarding substantial form, it is possible for the body to fragment without the parts’ going out of existence—that is, indeed, the very point of the pluralist doctrine (§25.3). If, however, the parts of a hylomorphic composite are conceived along unitarian lines, then they cannot all exist apart from the whole, because they are individuated by that whole (§25.2). The unitarian version of hylomorphism thus gets restrictions on composition for free.

It is an interesting feature of recent scholarship on Descartes that all of the lines of thought just canvassed have been put forward as his theory of material substance. There are those who think he invokes hylomorphism to individuate bodies (at least in the human case), those who think he allows scattered bodies, and those who read him as a material monist—even though the textual support for any of these interpretations is thin to the point of being practically invisible. What we have here is an instance of the principal occupational hazard faced by the historian of philosophy: not the oft-censured temptation to read historical texts anachronistically, but the larger and yet rarely acknowledged temptation to suppose that a great philosopher will have great answers to all the great problems of philosophy. I myself have struggled with Descartes’s views in this domain for as long as I have been working on this book, and have reluctantly come to conclude—as I have suggested several times already (§24.5, §25.6)—that we should give up the idea that Descartes has a theory of material substance. To be sure, if he has one, he never tells us what it is. Many Cartesian scholars have accordingly viewed it as their professional obligation to advance one or another speculative solution. Far better, I have come to think, is simply to acknowledge that this is not an area where Descartes has a positive theory.

Since it is surely not the case that Descartes never considered the fundamental metaphysical question of what counts as a material substance, his quietism in this domain is presumably intentional. Of course, we cannot know why he made this choice, and so this is one of those places where scholarship quickly gives way to something more like gossip (§20.5). My own guess is that this is another question that Descartes regards as best left unanswered, for fear his project get bogged down in obscure scholastic metaphysics (§8.4). Still more speculatively, as suggested in §25.6, I think Descartes was strongly inclined toward anti-realism regarding material substances. This is not to say that he thinks there are no material substances. On the contrary, everything in the realm of res extensa is a material substance (or a mode of it), and indeed there are infinitely many such substances (§26.1). But I suspect Descartes was inclined to doubt that the difference between genuine things and mere aggregates

A characteristically heterodox discussion is Carpenter’s, who argues against all sides in the debate and thus concludes that there is “no true composition” (Phil. libera II.9). But it is not clear what follows from this. Carpenter clearly does not embrace strict or even weak permanence. Perhaps he means to reject not the existence of wholes but the existence of parts, along Digby’s lines (§26.4).

21 For Descartes as a monist, see note 11 above. For the idea that he embraces scattered objects, see Stuart, “Descartes’s Extended Substances.” For his alleged embrace of hylomorphism, see §24.5.
corresponds to any very deep facts about the natural world. Rather than say as much, and provoke pointless controversy, he chose to remain silent.

It is not hard to see why Descartes would have despaired of any illuminating story about material substances. No matter whether one looks upward in the direction of increasing composition, or downward in the direction of increasing simplicity, Descartes’s conception of res extensa lacks the resources to draw principled distinctions between what does and does not count as a substance. This is clear enough looking upward. Like any strict corpuscularian, Descartes sees all cases of material composition as simply various patterns of particles in motion. Some patterns will be stable and others fleeting, but there can be no principled distinction between those aggregates that are true unities and those that are mere heaps. To be sure, Descartes readily talks as if he endorses our commonsense metaphysics of cats and stones. Indeed, he is quite a bit more ecumenical than most during our period: the human body counts, as does the mind–body composite (§25.6); stones count, as does a piece of gold, as do bread and clothing.22 In general, it is easy to suppose he would be willing to count any continuous region of res extensa as a substance. Looking downward, the story is much the same. Because Descartes rejects atomism (§5.4) and insists on the actuality of all the integral parts of any body (§26.1), infinitely far down, he has no privileged level that he might single out as uniquely real. Hence just as he lacks the resources to defend the ontology of common sense at the macro-level, so he lacks the resources to defend strict permanence at the micro-level. (Gorlaeus, in virtue of postulating metaphysically simple atoms, has such a privileged foundation. Hobbes, by allowing scattered objects [§28.4], does not need to privilege any level.)

There are, at this point, endless questions that one might ask about Descartes’s view. Must a region be continuous, to count as a substance? How continuous? Must it be stable? How stable? Is Descartes committed to rejecting the part–whole identity thesis? Would the existence of wholes as something over and over their parts fit into his austere ontology? Could he instead coherently insist on part–whole identity? Can wholes be identified with their parts, in a theory that recognizes no smallest parts, meaning that every part is itself a whole, infinitely far down? (Ockham combined these views, but Ockham had metaphysical resources that Descartes eschews.) These are excellent questions to ask of someone who has a theory of substance. Descartes, however, I have come to believe, has no theory, realist or anti-realist. Here we might recall his retort to Gassendi (§8.4): “he put to me a great many questions of a kind that do not need to be answered in order to prove what I asserted in my writings, and that the most ignorant people could raise more of, in a quarter of an hour, than all the wisest people could deal with in their whole lifetimes. This is why I have not bothered to answer any of them” (IXA:213).

Having long sought and failed to find any coherent, textually supported theory of material substance in Descartes, I have come to think that he simply declines to offer

22 For examples of Descartes’s commitment to ordinary bodies as substances, see, e.g. Fourth Replies, VII:222 (the hand, the whole body, the mind–body composite); Third Meditation, VII:44 (a stone); to Clerselier, IV:372 (bread and gold); Sixth Replies, VII:441 (clothing). Kaufman’s “Cartesian Substances” makes an extended case for taking such commitments seriously, and I am indebted to him for many discussions of this material, though his conclusions differ from my own.
one. Rather than attempt to moor the very last of the surviving Aristotelian categories onto some solid theoretical ground, Descartes chooses to let it quietly drift away. Whether this should be considered a fault depends on one’s level of enthusiasm for speculative metaphysics. But Descartes is not the end of our story, and in the final two chapters I will consider various seventeenth-century attempts to salvage some vestiges of a commonsense ontology of substance, in the face of puzzles regarding change over time.
Identity over Time

It would be natural to suppose that the question of identity over time emerges as a philosophical problem only toward the close of our four centuries. For the scholastics, one might suppose, the hylomorphic framework resolves all such questions as soon as they arise, leaving such questions of diachronic identity to take center stage only once the Aristotelian framework is abandoned. So one might suppose, both given the existing scholarly literature on the subject, and given the sorts of conclusions reached in earlier chapters. The reality, however, is quite different. Although it is true that many scholastic authors face no problem of diachronic identity, this is not always the case. In particular, many authors associated with nominalism have to deal with extremely difficult issues regarding identity through change, to which they respond by articulating a framework that distinguishes between identity in the strict sense, which is rarely satisfied, and various looser relationships that we treat as if they amounted to identity. It is this nominalist framework, I will argue, that shapes the more famous post-scholastic discussions of identity in Hobbes and Locke.

29.1. Identity Made Easy

Debates over diachronic identity go back to Hellenistic discussions of puzzle cases such as the ship of Theseus. These questions came into renewed prominence with the rising tide of philosophical speculation in the early twelfth century. Peter Abaelard and other so-called Nominales defended the thesis that *Nulla res crescit*—"Nothing grows"—seemingly denying that material objects ever do endure through change. The only identity over time, on this view, would be absolute and complete sameness down to all of a thing’s integral parts. Naturally, this claim met with considerable opposition.¹

¹ The question of identity through growth is said to go back to Epicharmus in the fifth century BCE, and is briefly considered by Plato in the Symposium (207d–e). On the Hellenistic debates, which seem to have occurred primarily between the Academics and the Stoics, see Long and Sedley, Hellenistic Philosophers sec. 28, and also Sedley, "Stoic Criterion"; Eric Lewis, "Stoics on Identity"; and Sorabji, Self pt. II. Tellingly, the Stoics responded to Academic puzzles over identity by invoking metaphysical parts: substance and quality.

It seems unlikely to be a coincidence that the Hellenistic debate, couched in terms of whether anything grows, is taken up in exactly that same peculiar form by Abaelard. It is unclear, however, how he knew about these debates. It is also unclear precisely how to interpret the views of Abaelard and other Nominales, in part because the texts here are rather thin. See Arlig, "Abelard’s Assault" and "Medieval Mereology"; Desmond Henry, Medieval Mereology pp. 92–139; King,
In the thirteenth century these earlier metaphysical discussions were flooded over by the Greco-Arabic Aristotelian tradition, which swept away much of twelfth-century logic and metaphysics, including these debates over diachronic identity. It is easy to see why these debates in particular might have seemed outmoded, because within an Aristotelian framework it is not obvious that there is any special problem about identity over time. In postulating a substantial form that persists for as long as the substance persists, the Aristotelian seemingly has a straightforward account of what makes a substance persist. As we saw in Chapters 24–5, the details here are complex and subject to considerable debate, but on any version the Aristotelian would seem to have a metaphysical part—the substantial form—that is ready-made to dissolve the problem of diachronic identity.

Accordingly, one finds only the most desultory discussions of identity and change among the classical authors of scholasticism, all the way through Scotus. Although the debate over the plurality of substantial forms gave rise to extremely nuanced discussions of the identity conditions of a material substance and its parts (see Ch. 25), the question of how a thing endures through change was regarded as settled. One can see the rapid transformation that took place by first considering William of Auvergne’s De anima (c. 1240), written with some knowledge of the burgeoning Aristotelian movement—especially as it was manifested by Avicenna—but generally resistant to that influence. William takes up Avicenna’s thoroughly Aristotelian position on diachronic identity: that what makes a human being the same over time is its soul, which endures even as the underlying matter is constantly replaced by the ordinary biological processes of nutrition and growth. According to William, “this doctrine is not only contrary to the Christian faith but also in itself impossible” (De anima II.1). For a body to be alive, William charges, just is for it to endure through such biological processes, and for it to die just is for it to cease to exist. Moreover, if the body were to change in this way, then the human being would change its identity, because mere identity of form would not be enough to preserve the identity of the composite. Finally, moving onto theological ground, William asks which body would be resurrected on this sort of account. Since there would be no reason for one rather than “infinitely many others” to be resurrected, they would all have to be resurrected, a monstrosity that, according to William, goes beyond the wildest of poetic fictions.

Amazingly, William says nothing at all about what makes our changing body the same over time, as it grows and decays. That debate effectively stops with him, however, because the next generation of Parisian theologians would embrace the Aristotelian model that William rejects. As a result, they have no need to worry about the body’s changing over time, provided that the soul endures. Aquinas, for instance, readily admits that


2 Scotus does devote a disputed question to personal identity—“An haec sit vera Socrates senex differt a se ipso pueru” (In Isagoge q. 24)—but the discussion is technical and focused on peripheral issues. His treatment of the resurrection in Ord. IV.43 is not without interest, as is shown in Cross, “Identity,” but does not yield a developed theory of diachronic identity.
the human body, over one’s lifetime, does not always have the same parts materially, but only specifically. Materially, the parts come and go, and this does not prevent a human being from being numerically one from the beginning of his life until the end. (Summa contra gent. IV.81.4157)

This would be the common consensus of scholastic authors throughout our period, and it is uncontroversial enough that in the late sixteenth century the Coimbrans can cite both Aquinas and Ockham—the two bookends of the scholastic corpus—as authorities for the view that “Socrates, in continuous succession, acquires some parts and loses others” (In Phys. I.9.5.2). Given the presence of an enduring substantial form, such facts struck many as unproblematic, and ship-of-Theseus style worries could stay on the sideline.

This consensus regarding the changeability of underlying matter may seem surprising, inasmuch as it might seem to clash with two different aspects of scholastic Aristotelianism: first, with the doctrine that prime matter is conserved through all change (§2.5); second, with the doctrine that the parts of a material substance are individuated by its substantial form (§24.2). There is, however, no conflict between these theses. What the Coimbrans (and Aquinas, and Ockham) accept is that a material substance can gain and lose integral parts—through growth, for instance, or through a part’s being forcibly removed. As we saw in Chapter 26, integral parts are themselves substances, albeit imperfect, and each such part can be understood to have its own prime matter. So what the conservation thesis predicts in such a case is that the matter will go with the part: for a substance to gain an integral part is for it to gain a certain chunk of prime matter, suitably informed, and similarly to lose an integral part is to lose a chunk of informed prime matter. With respect to the second of the above theses—the individuation of the parts by the substantial form—there is also no conflict. That thesis maintains that the integral parts of a body take their identity from their form. The implication is that when a material substance loses a part, that part loses its identity. (A severed hand is a hand in name only [Aristotle, Meteor. 389b31].) The thesis does not maintain that a body cannot acquire new parts—no more than it insists that a body cannot lose parts. The requirement is only that those parts that have been gained become something new, in virtue of coming to exist as part of a larger whole. To say they take on a new identity, however, is not to say that they become identical with any other part of the body, or to deny that they are indeed new and distinct parts of an enduring whole. Aristotle himself had discussed this phenomenon at some length in Generation and Corruption I.5, under the heading of growth, and this became one of the principal topics of discussion in commentaries on that work. Scholastic authors thus had a very vivid sense of the difficulties in accounting for diachronic identity in terms of bodily identity. Such difficulties were often thought to pose little difficulty for diachronic identity in general, however, because of course the substantial form was thought to endure. As Ockham puts it, “someone certainly is said to be numerically the same human being, because the intellective soul, which is a simple form, remains in the whole body and in each part of the body” (Sent. IV.13 [Opera theol. VII:264]).
The situation is, however, much more complex than these brief remarks suggest, and the trouble in fact seems to have begun with Ockham.\footnote{For a clear statement of the easy Aristotelian solution, see Burley, De tota et parte p. 301: "homo in iuventute et senectute est idem totum secundum formam et habet eamdem animam omnino, sed non est idem secundum materiam, quia unam materiam habet in una aetate et aliam in alia. . . ."}

### 29.2. Identity Made Hard: Ockham

Given what I have said so far, one might have expected that diachronic identity would continue to be a non-issue throughout the scholastic era. In fact this is not the case. By the middle of the fourteenth century, in the work of John Buridan and allied figures, one finds an extremely interesting and sophisticated body of literature on these issues, which has only recently begun to receive any attention from scholars. Although the label ‘nominalist’ often obscures more than it clarifies (§5.3), there is a striking consensus on the topic of diachronic identity among authors associated with that movement—enough to justify our speaking of a nominal theory of identity.

The reason one finds this effusion of interest in diachronic identity is that these authors accept a pair of theses that make it exceptionally difficult—even for an Aristotelian—to account for endurance through change. First and foremost, they accept the part–whole identity thesis, according to which the whole composite material substance is nothing over and above its various parts (§28.5). This alone poses a quite severe obstacle to diachronic identity, because it—together with the indiscernibility of identicals—entails that if a thing gains or loses a part, then it is no longer the same thing. Second, these authors deny that substantial forms can ordinarily transfer from one subject to another. This no-transfer principle, as I will call it, means that, when the integral parts of a substance change, the substantial form must also change, at least partially. (For the vexed question of whether substantial forms have parts, see §26.6.) This no-transfer principle, when conjoined with the part–whole identity thesis, makes even more trouble for diachronic identity, for it now looks as if substances that gain or lose integral parts (as all living things presumably do) will not be the same with respect to either matter or form. It seems, in other words, as if these theses conjoined make even partial identity impossible. For the nominalists, committed as they are to these two theses, diachronic identity turns out to be surprisingly elusive.

The seeds of this predicament lie in Ockham himself, because Ockham accepts the two theses just mentioned. We have seen already his commitment to part–whole identity (§28.5). The force of that commitment emerges in his discussion of the resurrection, which is one of the few places where scholastic authors can be counted on to consider questions of diachronic identity. Taking it as an article of faith that individual human beings will live again, after death, Ockham asks whether this entails

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\footnote{The easy Aristotelian solution to identity exerts a pull even on authors who are in general not very sympathetic to scholasticism. Digby, for instance, insists that “as long as the form remains the same, the thing is the same, and the matter is the same. Were it not for this, how could any body under heaven remain the same even but for a short moment’s space?” (Discourse concerning Vegetation p. 93). But Digby is no Aristotelian: though he thinks one can say that “all bodies are composed of matter and form,” he immediately adds that “I do not mean that there are two distinct entities, which being put together like meal and water do concur jointly to compose a body, as they make bread” (pp. 89–90).}
that numerically the same body will be resurrected and joined with our souls. Presumably, God might do this if he wanted to. But would he have to do it, for the same human being to exist again? Ockham treats this question as equivalent to the question of whether matter belongs to the essence of a composite substance. In arguing for the affirmative, he is particularly worried about an opponent who claims that what is essential to a material substance is merely matter of the same kind, rather than the particular matter the substance possesses right now. Against that position Ockham deploys, in effect, the part–whole identity thesis, insisting that “that is not the same whole that does not have the same parts” (Sent. IV.13 [Opera theol. VII:260]). Hence for a thing to lose or gain a part, even if it is replaced by one of the same kind, is for that thing to become something new. Ockham spells out the consequences of this view as follows:

Having seen this, I say to the question that matter is part of the essence and quiddity of the composite, as was said. And where there is one matter in something and then another, in succession, there is in some way a real distinction between the same thing and itself at one time and another, because something belongs to the essence of the one that does not belong to the essence of the other. And likewise where there is something entirely (simpliciter) the same at the start and at the end of the change, the whole can be said to be really the same, on account of the identity of that [persisting part]. (ibid., VII:264)

Ockham takes the part–whole identity thesis to commit him to a form of what is now called mereological essentialism, according to which the parts of a thing are essential to it: lose a part and the thing is no longer the same. But although he commits himself to this quite expressly at lines 2–4 and elsewhere in the discussion, he is rather cagey about just what mereological essentialism implies. He clearly does not wish to understand the claim in a very radical sense, as maintaining that a whole with a new part becomes something entirely new. This would be an odd result, given that the rest of the parts are the same, and given that ex hypothesi the whole just is its parts. But in some sense the whole is something different from what it was. So Ockham says in the passage just quoted that in such a case there is “in some way a real distinction” (line 3) but yet “the whole can be said to be really the same” (line 6). Exactly how both of these claims can be true is not at all clear, but Ockham tells us nothing more about it.

Ockham’s subsequent discussion focuses on the extent to which living things can be said to be really the same through change, in virtue of having some part that persists unchanged. He makes things easier for himself by supposing that living things of all kinds always retain some kernel of unchanging matter, from birth until death (ibid., VII:268–9). But he makes the situation much harder by endorsing the second of the complicating theses described above: that substantial forms generally depend on their material subject, and so change as that matter changes:

4 Ockham’s commitment to mereological essentialism appears in other contexts, without explanation or defense. See, e.g., In Phys. IV.18.3 (Opera phil. V:199): “impossibile est quod aliquod secundum se totum distinctum ab omnibus aliis sit in rerum natura nisi aliqua pars eius sit in rerum natura. . . . Immo impossibile est quod aliquod unum secundum se totum distinctum ab aliis sit in rerum natura nisi quaelibet pars eius sit in rerum natura. Unde si una sola pars non sit in rerum natura, nec ipsum totum est.” His most detailed discussion of these issues is in Quaest. var. 6.2 (Opera theol. VIII).

Given the ancient pedigree of the part–whole identity thesis (Ch. 28 note 17), one would expect to find a long history of interest in mereological essentialism. Indeed, Sextus Empiricus regards the view as the sort of common belief that can be legitimately taken for granted as a premise in his destructive arguments (Outlines of Pyrrhonism III.98).

For a recent discussion of Ockham’s views on identity very much in line with my treatment here, see Normore, “Ockham’s Metaphysics of Parts.”
When an animal with an extended form grows, . . . just as there is growth and variation in matter, so too in the extended form. This is proved, because an extended form does not pass anew into some matter that it had not previously informed. (ibid., VII:261)

This means that hylomorphism will be surprisingly unhelpful in accounting for identity through change. When matter changes, form changes, and so a material substance can have only as much formal identity through time as it has material identity through time. Indeed, if not for the kernel of unchanging matter that Ockham postulates in living things, he would seemingly have no basis for insisting on any sort of diachronic identity for living things. Except, that is, in the human case. The above passage applies only to animals that have an “extended form” (lines 1, 2). For Ockham, all forms are extended, except the rational soul, which exists holenmerically throughout the body (§16.4), and persists unchanged through change to the body and even, of course, apart from the body.  

With these results in hand, Ockham summarizes his account of how living things persist through change:

I say, then, that in the case of growth there is not entirely (simpliciter) the same individual in every way before growth and after, because where there is one matter and then another, belonging to the quiddity and essence of the thing, there is in some way a real distinction, because something belongs to the essence of the one that does not belong to the essence of the other, as was said. In the same way, in the case of the resurrection, it will not be in every way the same human being before resurrection and after, because according to all the doctors there is not entirely the same matter numerically in the resurrected body as there was before the resurrection, nor is there the same sensory form—supposing that it is something distinct from the intellective soul and is extended—because in that case one should speak of it just as one speaks of matter in growth in all cases. Still, someone certainly is said to be numerically the same human being, because the intellective soul, which is a simple form, remains in the whole and in each part. (ibid., VII:264)

5 Ockham treats his commitment to the no-transfer principle as uncontroversial, and so later on do Buridan and other authors associated with him. For a particularly detailed discussion, see pseudo-Marsilius of Inghen, In Phys. I.10, who defends the no-transfer principle and holds “quod opinio ponens augmentationem in viventibus fieri per extensionem formae in plurali materia est falsa. Verbi gratia, quidam ponunt quod in augmentatione plantae anima vegetativa quae preexistet habet materiam nutrimenti supervenientem sine generatione alciuius novae partis formae” (f. 10ra).

Paul of Venice provides a good example of an author who takes for granted the contrary view, that substantial forms are transferable: “quaebet forma substantialis vivens per totam suam periodum mance mel numero primo modo [i.e., quod nec in toto nec in parte est substantialiter variatum]” (Summa phil. nat., III.15, f. 44ra). If he is aware that this is a controversial thesis, he does not here show it.

By the time of Zabarella, the two positions have hardened into opposed camps, “utraque cum maximis difficultatibus coniuncta” (De rebus nat. De accretione ch. 13, col. 792). Zabarella in the end sides with those who favor the transferability of forms (ch. 15).

An interesting corpuscularian perspective on the no-transfer principle appears in Basso, who quotes Zabarella’s discussion at length, and contends that, contrary to Zabarella’s ultimate conclusion, the arguments in favor of rejecting transfer are decisive. The moral Basso derives, however, is that substantial form cannot serve its intended purpose and so should be rejected entirely (Phil. nat. De formis III 2.3–4).

The notion of substantial form’s changing over time, along with the matter it informs, raises a host of complex questions. The situation looks relatively straightforward on views, like Oresme’s, that take the whole substantial form to consist merely in the sum of the partial substantial forms (see §26.6). The situation seems more complex for authors like Buridan who deny that the integral parts of a body have their own partial substantial forms, because Buridan then needs an account of how the one substantial form of the whole partially changes, without entirely ceasing to exist. In a way, the problem of diachronic unity for the whole substance is simply recapitulated here, at the level of substantial form.

Oresme discusses change to material substantial forms in the context of his general theory of the intension and remission of forms, at De configuratione II.13 (p. 300).
The passage shows Ockham continuing to want it both ways. On the one hand, no living thing that endures through change will be entirely the same (lines 1–10). This is so both for the matter and for any extended—that is, non-holonomic—substantial form that a thing has. Given Ockham’s version of pluralism (§25.4), he can apply this claim even to the human sensory soul (lines 8–10). Despite this result, however, Ockham still has a way to account for the identity of a human being, even through that most radical change of death and resurrection, because of the simple, holomorphic intellective soul, which persists.

The position Ockham arrives at is unstable and perplexing. It might not be obvious that this is so: one might suppose that Ockham is stating a fairly predictable result for any hylomorphic analysis of diachronic identity: that of course a material composite changes in part, with respect to its matter, but that of course it also remains the same, with respect to its form. But the view is not nearly so straightforward. What one would expect from an Aristotelian account is an insistence that the composite wholly endures—endures *simpliciter*. One can say this, however, only if one rejects part–whole identity, in favor of the view that the composite whole is something distinct from its parts. One finds this sort of account in Scotus, for whom what is destroyed at the death of a living thing is “some positive entity that is not the material part, the formal part, or the parts [together]” (*Ord.* IV.43.1 [Wadding X n. 4]). One seems to find it in Suárez, too, who contends that in living things “the whole substance is permanent *simpliciter*,” even if “the loss and gain of substantial parts is continuous or nearly so” (*Disp. meta*. 50.7.4). If, instead, the whole just is its parts, then when the parts change the whole must lose its identity. Ockham sees this quite clearly, and puts that result in the strongest way possible: that the integral parts of a body are essential to it. Hence we arrive at mereological essentialism. But what is perplexing is that Ockham refuses to follow this result to what would seem to be the inevitable conclusion: that material substances are never the same through growth and decay. Instead he thinks there is room for some sort of compromise view: that “in some way” (line 3) identity fails, but that yet so long as there is some part that endures unchanged, there is another sense in which the substance endures. This sort of partial verdict is perhaps not so odd. But what makes the whole treatment especially curious, and unstable, is that Ockham seems to think the result in the human case is not partial at all. For he ends the above passage with what seems to be the wholly unqualified conclusion that “certainly” (*bene*) the human being is numerically the same, because of its intellective soul. Why one should say that a human being certainly endures, in virtue of having one enduring essential part, rather than instead saying that it certainly does not endure, in virtue of losing other essential parts, is entirely unclear. So far as I have found, Ockham says nothing more to clarify the situation. The issue becomes much clearer, however, in later discussions.

29.3. Nominal Identity: Buridan and Oresme

The difficulties that Ockham’s discussion inchoately raises receive an explicit and sophisticated treatment in various natural philosophers from the mid-fourteenth to early fifteenth century. Buridan seems to have been the first, in a series of discussions that runs throughout his work. One of the most extensive treatments, from his *Physics*
commentary, takes up the question of “whether Socrates today is the same as he was yesterday” (I.10), supposing that today Socrates has either grown or had a part removed. After considering various ingenious arguments for one side and then the other, Buridan proceeds to offer an analysis of diachronic identity on the basis of “three ways in which we are accustomed to say that one thing is numerically the same as another” (f. 13vab). These three ways are so interesting, and would be so influential on subsequent discussions, that they are worth quoting at length:

The first way is by being totally (totaliter) the same—namely, because this is that and there is nothing belonging to the whole of this that does not belong to the whole of the other and vice versa. This is numerical sameness in the most proper sense. According to this way it should be said that I am not the same as I was yesterday, for yesterday there was something that belonged to my whole that has now been dissolved, and something else that yesterday did not belong to my whole which later, by nutrition, was made to belong to my whole. . . .

In a second way, however, one thing is said to be partially the same as another—namely, because this is part of that (and this is especially said if it is a major or principal part), or else because this and that take part in something that is a major or principal part of each. . . . And in this way a human being remains the same through the totality of his life because the soul remains totally the same, and the soul is a principal—indeed the most principal—part. A horse, however, does not remain the same in this way, and indeed neither does the human body. And in this way it is certainly true that you are the same one who was baptized forty years ago—especially since this holds of us principally because of the soul and not the body. It is also in this way true that I can pursue you for injuries or be required to repay you, because harmful or meritorious deeds also come principally from the soul and not from the body. So too we do not say that you were generated yesterday because we do not say that something is generated absolutely (simpliciter) unless it is generated as a whole or with respect to its major or principal part.

But in a still third way, less properly, one thing is said to be numerically the same as another according to the continuity of distinct parts, one in succession after another. In this way the Seine is said to be the same river after a thousand years, although properly speaking nothing is now a part of the Seine that was part of it ten years ago. For thus the ocean is said to be perpetual, as is this earthly world, and a horse is the same through its whole life and likewise so is the human body. (In Phys. I.10, f. 13vb)

Approached out of context, it would be quite puzzling why Buridan makes the choices he makes here. Why insist on the first, hyper-strict sense of total sameness? Why allow a human being to be the same over time only in the second, relatively weak sense of partial sameness? Why demote other animals to the third, still weaker category, making them akin to rivers? In light of Ockham’s discussion, however, all of this is quite clear. Buridan reasons as he does because he shares Ockham’s metaphysical commitments to the part–whole identity thesis, and to the no-transfer principle.

These motivations are made explicit in another extended discussion of this material, in Buridan’s commentary on the De generatione, where he considers “whether something that grows remains wholly the same before and after” (I.13). His conclusions are what we should expect, given the discussion from the Physics: (1) a thing that grows is not totally the same as what it was; (2) a human being who grows is partially the same, in virtue of having the same intellective soul; (3) other animals are the same over time only in the way that a river is, in virtue of “the continuous succession of their parts.”
Buridan’s rationale for these conclusions is here made clear. Other animals can remain numerically the same only in the third and weakest sense because at most “lesser and fewer” of their parts endure through change. Not their soul (or at any rate not most of their soul), because “in the case of material forms—that is, those drawn from the potentiality of matter—the form does not pass from matter to matter” (In Gen. et cor. I.13, p. 190). It is then only human beings, among animals, that can be said to persist in the second way, in virtue of retaining their principal part.

Buridan is also clear about why human beings cannot be totally the same through growth and decay. To gain or lose parts would violate the indiscernibility of identicals:

Let that which yesterday was precisely Socrates be \(a\), and let that which is added to it, by which it grows, be called \(b\). It is obvious that now Socrates is composed of \(a\) and \(b\). Therefore Socrates is not totally the same as \(a\), and nevertheless yesterday he was totally the same as that \(a\). Therefore it is clear that Socrates now is not totally the same as Socrates was yesterday. (ibid., p. 189)

This argument is sound if and only if one assumes the part–whole identity thesis. Without it, one can insist that Socrates today is not just the composite of the integral parts \(a\) and \(b\), but that he is some further thing, \(c\), which is in fact what Socrates was yesterday as well. Buridan is well aware that he needs this as a premise: the first preliminary argument of the quaestio had run as follows: “The whole is its parts, as is commonly said; but the parts do not remain the same—rather, they come and go; therefore the question is false” (ibid., p. 188)—that is, identity is not preserved through growth. Buridan expressly endorses this argument, and indeed the more complex argument above (in terms of \(a\) and \(b\)) is just an elaboration on this simpler template.

Given such arguments, Buridan sees no option other than to retreat to a weaker notion of sameness to account for the diachronic identity of human beings. Interestingly, however, he makes an effort to suggest that this sort of weaker identity is sufficient for our being the same over time simpliciter. For after spelling out his account of our partial identity in virtue of our rational soul, he adds: “from this we can conclude that, speaking unconditionally and without qualification (simpliciter et sine addito), a human being remains the same from the start of his life up to the end, because we are accustomed to denominate a thing unconditionally and without qualification on the basis of its most principal part” (ibid., p. 190). This is evidently not to say that we in fact remain numerically the same in the strongest sense—he had just made it quite clear that we do not. The point instead seems to be that one can truly say, without qualification, that the same human being exists from birth until death, just because this is the way we talk. Buridan’s insistence on this point is reminiscent of Ockham’s puzzling insistence, seemingly contrary to what he had just been saying, that “someone certainly is said to be numerically the same human being.” Buridan, unlike Ockham, explains why he insists on this point—or, at any rate, he explains the philosophical rationale for it. What both Ockham and Buridan leave unsaid is why they feel the need to insist on the point. That reason would seem to be the shadow of 1277, when the bishop of Paris had condemned the thesis “that through nutrition a human being can be made numerically and individually distinct” (ed. Piché, n. 148). The thirteenth-century figure who defended this thesis is unknown to us now. Clearly, though, by returning to this contentious issue, Ockham and Buridan were courting controversy. To try to inoculate
themselves against censure, each insists that—contrary to what their views would seem to imply—in fact it is strictly true, without qualification, that a human being remains the same through time. What Buridan’s discussion makes clear, however, is that this is one of those instances where the way we talk does not correspond with the metaphysical facts on the ground (§6.4). It is perfectly legitimate to say, without qualification, that Socrates persists through change—this is legitimate, because our customary idioms allow it. From a metaphysical point of view, however, such claims are liable to mislead, if they are understood as entailing that Socrates wholly survives.

So far we have seen two approaches to identity through change: either to deny part–whole identity, and postulate that the substance is something distinct from the sum of its parts, or else to concede that material substances do not totally endure through growth. Buridan’s explicit discussion inspired a series of subsequent treatments of these issues that explore a wider range of options. One such option, which scholastic authors could scarcely have missed, is to treat changeable material substances as successive rather than permanent entities. As we saw in Chapter 18, permanent entities exist all at once, whereas successive entities exist in virtue of having distinct parts spread out through time. The paradigmatic examples of successive entities are motion and time. But given that many material substances consist in a sequence of parts that come and go, it is obvious, from the scholastic perspective, that such things might themselves better be understood as successive entities. What we actually have here is a range of cases, as pseudo-Marsilius of Inghen explains, in a discussion plainly inspired by Buridan:

It should be noted that one finds three differentiae of natural things.

- First, there are some natural things that endure (manent) in virtue of the permanence of all their parts at once—without any addition, change, or subtraction being made. Examples are the sun, the heavens and other such parts of the heavens.
- Then there are other beings whose parts in no way endure at once. These entities instead consist in a continuous succession of their parts, one after another. Examples are time, motion, and other things of this sort.
- Third, there are some beings in between these two, which endure in virtue of the permanence of some of their parts, while other parts succeed one another either through generation and corruption or through addition and subtraction. Examples are animals, plants, and elemental mixtures of this sort. (In Phys. I.10, f. 9vb)

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6 Buridan offers the same account, more briefly, at In De an. II.7 (ed. Sobol, p. 100) and In Meta. VII.12. In De an., III.6 is also relevant, and quite interesting, although the discussion there is focused narrowly on the identity of the separated soul. The preliminary objections to In Phys. I.10 also indicate that Buridan’s position is motivated by the part–whole identity thesis.

For further discussion of Buridan see Pluta, “Buridan’s Theory of Identity,” which offers both extended paraphrases and a slightly revised version of some of the texts, based on the best manuscripts. (My translation of In Phys. I.10 follows Pluta’s revisions.)

Buridan’s account is followed nearly verbatim by Marsilius of Inghen, In Gen. et cor. I.12. For a rather different and very interesting discussion, from a leading realist opponent of nominalism, see Paul of Venice, Summa phil. nat. III.15. Paul follows Buridan’s general approach in that he focuses on endurance in virtue of the endurance of a principal part. But because he accepts that substantial forms are transferable through material change, he is able to apply this account much more widely than Buridan is, with interesting results. Paul also takes up these issues in his Logica magna pt. I tr. 14, large parts of which are edited, translated, and analyzed by Desmond Henry, Medieval Mereology pp. 481–518.
This usefully systematizes a range of different cases. Since Aristotelians take heavenly bodies to be unchanging, they are said to endure in the first, most complete sense. We might add that the human soul also endures in this way. Why not the whole human being? For authors like Scotus and Suárez, who treat the whole as something over and above its parts (§29.2), the composite whole might aptly be put into this first class—not of course because its parts do not change, but because a change to its parts does not make it endure any less. This does violence to pseudo-Marsilius’s way of conceiving the situation, however, because he accepts the part–whole identity thesis, and so takes it that change to the part makes for a difference in how the whole endures. Accordingly, after this passage he immediately goes on to introduce Buridan’s three degrees of diachronic identity, and endorses Buridan’s diagnosis of what to say about human beings and other animals. Because all animals gain and lose parts, they can at best partly survive.

The second of the above differentiae is of course the class of successive entities. To say that their parts are in continuous succession is evidently to say that no part ever endures. Every part has merely instantaneous existence. Whether this is the right way to think about time and motion is a difficult issue, since it is unclear what their parts are (§18.3), but this at any rate seems to be how pseudo-Marsilius thinks of entia successiva. This line of thought is quite explicit in Nicole Oresme, who seems to have been the source for this aspect of pseudo-Marsilius’s account. (Although Oresme is not ordinarily counted as one of the nominalists, his views are often quite similar to those of Buridan and others associated with nominalism in mid-fourteenth-century Paris.) On Oresme’s very brief recital of this three-way distinction, to be “successive simpliciter” is to be such that “nothing of it that is in one part of time was in the preceding part of time” (In Gen. et cor. I.13, p. 115). This makes clear why scholastic authors do not want to treat animals as successive entities. Whereas a true successive entity has nothing permanent about it, animals—no matter how quickly they gain and lose parts—do at least have some measure of permanence in those parts. The parts endure at least for a little while. Hence pseudo-Marsilius (line 8 above) positions animals halfway between being fully permanent and fully successive, as what we might call semi-permanent.

In effect, this further three-way distinction imposes on Buridan’s account a more fine-grained structure. Instead of simply distinguishing between things that gain and lose parts and things that do not, we can now distinguish between things that gradually have their parts replaced and things that are wholly replaced at every instant. All our authors take animals to be of the first kind. As we saw in §18.4, however, Oresme explicitly argues that it would be possible for a human being to be a fully successive entity, if God were to create a human substance for just an instant, then create another instantaneous human substance, and so on for the duration of that being’s life. How we know we are in fact not like that is a difficult question that Oresme, and also Albert of Saxony, show some sensitivity to. Ultimately, however, as we saw in that earlier discussion, they could not take the possibility seriously. For present purposes let us simply observe that considerations of growth are scarcely enough to justify the radical idea that animals are wholly successive entities, unless one supposes that our growth and decay is so constant and rampant that no part of us ever endures through any space of time.
Both pseudo-Marsilius and Oresme think that animals and other semi-permanent entities can be said to be the same through time. But whereas pseudo-Marsilius simply follows Buridan’s account, Oresme takes a somewhat different view, by insisting that in cases of complete replacement we should not speak of identity in any sense of the term:

The first conclusion is that in the case of merely successive entities there is not the same thing today as there was before. Instead, the whole taken categorematically is a single continuum. Nor likewise (is there the same thing today as there was before) in the case of things all the parts of which are succeeded by other new parts. So there is not the same water of the Seine now that there was two years ago. (In Gen. et cor. I.13, p. 116)

The passage begins by ruling out diachronic identity for purely successive entities. Oresme does not thereby mean to deny that such entities exist. We can properly speak of a single motion, and use ‘the whole’ categorematically so that it refers to the temporally extended thing that is a continuous event. His point is just that there is nothing in that event that is the same today as it was yesterday, which is precisely why, for Oresme, it counts as a successive rather than a permanent entity. The more controversial claim of this passage is that we should also not speak of identity in semi-permanent cases where there is the complete replacement of parts. Whereas Buridan had maintained that a river counts as the same over time in virtue of its parts being replaced in continuous succession, Oresme contends that this is not enough: that some of the parts must be the same throughout the process. He illustrates this notion with the ship of Theseus (ibid., obj. 5 & ad 5). As soon as part of the ship has been replaced, we can no longer say that it is totally the same, but only that it is partly the same. As more parts are moved, it comes to be less and less the same. So far, this agrees with Buridan’s account. But whereas Buridan thinks that a river or a ship can survive the complete replacement of its parts, provided the replacement occurs in continuous succession, Oresme argues that as soon as that ship loses the last of its original parts, it is no longer the same ship. Living things, however, are not like that, because Oresme adheres to the standard view of his time—seen earlier in Ockham—that some kernel of the material parts of a living things endures throughout its life.7

The view Oresme arrives at is in a way fairly banal: he thinks that entities display total diachronic identity if they gain or lose no parts at all, and that they display partial diachronic identity if they lose some but not all of their parts. The more parts they retain, and the more important those parts are, the more appropriate it is to say that the thing endures. Questions of identity thus become extremely easy: even easier than on the more conventional Aristotelian approach sketched in §29.1. But can it be this easy to solve the puzzle of the ship of Theseus? One cost of this approach is that it requires accepting the rather surprising result that as soon as a thing loses even the slightest part, it is no longer wholly the same as it was. But this can just look like common sense, given that Oresme—like both Ockham and Buridan—can quickly affirm that the thing is of course mostly the same as it was. Thus to the objection that on his account the removal of one hair of fleece from a hat would make the hat something different,
Oresme serenely replies that “this hat is not that which it was before, but it is for the most part the hat it was before, and so we are accustomed to say that it is the same but not totally” (In Phys. I.7).

Interestingly, and contrary to the pattern we have seen so often, Oresme, Buridan, and others can talk this way not because they invoke additional metaphysical parts in their ontology, but because they refuse to do so. For authors who postulate the whole as something over and above its parts, it is hard to make sense of this breezy insistence that the ship or the hat is partly the same and partly different. For on such a view one seems forced to give an up-or-down answer to the question of identity: either that whole that is the ship is the same or it is not. In contrast, if the whole just is its parts, then if only some of the parts endure it seems just obvious that only some of the ship endures. This is perhaps an attractive feature of the account, so long as one is thinking of ships, hats, and other artifacts. But here is another cost of the view: one has to say that the dog that grew up from a puppy, or even the man who grew up from a boy, is only partly the same thing that it was. Whereas it seems obvious, at least pre-theoretically, that your dog is the very same dog you brought home as a puppy, and your boy the very same boy you brought home as a baby, none of the authors we are considering can allow this. In strict metaphysical fact, living things can at best be only partly the same as they once were.

Perhaps it is because of this cost that, before embracing this option, Oresme considers in some detail an alternative: that, as he puts it, a single thing can be many things in succession:

Now, as for the solution to these difficulties [regarding identity through change], there are several ways of speaking. One is that just as one thing is many things separately at the same time, so too one thing is many things successively. The first, to be sure, is possible only supernaturally, in the divine, but the second is true naturally. And so Socrates, who is now certain parts, will later—he himself—he other parts, whereas before he was still other parts. It is in this way that some say that a human being who is now a body and a soul will after death be only a soul. (In Gen. et cor. I.13, p. 113)

With this in hand, Oresme goes on to solve the sorts of puzzles that we saw Buridan consider above, regarding, for instance, how the same Socrates can gain a part, so that if yesterday Socrates was a, then today he is a and b. On the proposed account, the answer is simple: what was a just is, today, a and b. Crucially, Oresme is not saying that the whole is something over and above its parts—that there is a single, unchanging thing that is Socrates that wholly exists yesterday and today. Rather, he concedes that what we have here is “many things successively” (line 3). He has to say this, because he had announced at the start of the question that he would treat the part–whole identity thesis as axiomatic—a “manifest truth that everyone properly disposed grants by distinct instinct” (ibid.). (Interestingly, even while he says this, Oresme admits there are arguments against part–whole identity that he does not know how to answer.)

What does it mean for many things in succession to be just one single thing? As a model, Oresme mentions the supernatural possibility of one thing’s being, at the same time, many things (lines 2–3). He does not say which supernatural case he has in mind, but the only one that would seem to serve his purposes is the Trinity, according to which God is at once three and one. (This is how Albert of Saxony later understands the
example.) It is no doubt discouraging to get the Holy Trinity as an analogue to how material substances naturally persist through change, but at least this helps make clear what Oresme is offering us. The view boldly maintains the position that seems on its face to be contradictory: that what is genuinely one and the same thing can, over time, have contradictory features. Although it would be contradictory for Socrates to be a and b and at the same time to be just a (for instance, for Socrates both to have his little finger and not have it) there is in fact no contradiction in Socrates's being two and one over time. In effect—although Oresme does not say this—he is suggesting we reject the indiscernibility of identicals in diachronic cases. It is not contradictory for the same thing to have ten fingers and not have ten fingers, provided the having and the not-having occur at different times. Ten-fingered-Socrates can be the very same thing as nine-fingered-Socrates, over time. Socrates's fingers can be ten and nine.

This is not a proposal that we are supposed to like, or that Oresme himself likes. The comparison to the Trinity is surely intended to be discouraging. Oresme is telling us that we can make the problem of identity through change go away only if we suppose that the sort of mystery the faith postulates in the Godhead is one that is found all the time in the natural realm. One thing just is many things, in defiance of the apparent dictates of logic. Oresme spends some time showing how, if one does go down this road, the puzzles of change over time all disappear. But he ends on a negative note, by showing how this view threatens to prove too much. The view, he says, “cannot be generally true” (ibid., p. 115), because if it were we would have to say that a house could exist forever, through unlimited change, as could a ship. The present view would relax the conditions on identity to such a degree that we would never be in a position to deny diachronic identity: we would have to say that the house or the ship is wholly the same, even if all its parts are replaced. Although, as noted earlier, this result may seem attractive in the case of Socrates, Oresme finds it quite counterintuitive in the case of non-living things. Accordingly, although he never expressly disavows this approach to diachronic identity, he “sets it aside” at this point, and turns instead to the framework for partial identity that Buridan had articulated.8

8 Oresme makes particularly clear the central role of the two complicating theses I described in the previous section. They turn up as the second and third of four preliminary principles: “. . . præmitto aliqua pro principiis observanda. Primum est quod idem animal manet a principio vitae usque ad finem et idem homo. Secundum est quod totum integrale est idem quod suae partes integrales nec est aliqua res superaddita. . . . Tertio, suppono quod forma materialis non potest esse sine materia nec potest transire de materia in materiam. Quarto, suppono quod animal est compositum ex materia et forma, scilicet ex anima et corpore” (In De gen. et cor. I.13, pp. 112–13). With respect to the first two of these theses, Oresme makes the remarkable observation that he accepts them without knowing how to resolve the arguments that get made against them: “tamen non propter rationes quorum non video solutiones negare presumam tam manifestas veritates, quae naturali instinctu ab omnibus bene dispositis conceduntur” (ibid.). For Oresme see also the extensive discussion in In Phys. I.7.

Oresme’s suggestion that one thing can be many things over time is repeated in much the same terms by Albert of Saxony and, briefly, by pseudo-Marsilius (In Phys. I.10). Albert’s two extensive discussions, although following Oresme very closely, add a few more useful details: “. . . possumus imaginari quod sicut supernaturaliter una res numero est plures res numero—scilicet pater, filius et spiritus sanctus—ita naturaliter una res numero potest esse successives plures res numero, quamvis non simul” (In Gen. et cor. I.10, f. 138rb); “. . . imaginor quod, sicut supernaturaliter una res numero est plures res numero, ita naturaliter una res numero est successives plures res numero, ita quod una res numero [om. est] corruptibilis, quamvis non simul sit plures res numero, tamen bene successive” (In Phys. I.8, p. 126).
29.4. Identity Made Problematic

The nominalist framework for identity remained influential through the later scholastic period. John Major’s *Physics* commentary, published in Paris in 1526, at the start of the Scotsman’s second term of teaching there, contains a beautifully clear defense of the nominalist view, distinguishing between identity “properly and metaphysically speaking” and identity “vulgarly speaking” (I.2.9, f. b4r). The first requires complete sameness of all the parts, a position we have been brought to expect because Major had just finished a lengthy argument for the thesis that the whole is equivalent to its parts. The second covers a range of cases running from that of a human being, where the most principal part is conserved, to a river, where nothing is conserved but there is at least continuity in its flow. Thus Major concludes that “Socrates is not metaphysically the same in his old age and in his youth . . . , because his parts in old age are distinct from his parts in his youth” (ibid., f. b4v).

Alongside this relatively moderate nominalist line, one begins to see more radical positions, and a growing sense that there is a deep problem about identity over time. As in so many other cases, these later developments are foreshadowed back in the fourteenth century by Nicholas of Autrecourt. Autrecourt’s proto-corpuscularianism leads him to the permanence thesis: that naturally speaking nothing ever comes into or goes out of existence (§28.2). This is of course one way of dealing with the problem of diachronic identity, supposing one is willing to embrace one or another of the radical ontologies considered in the previous chapter. Such a theory does not inevitably lead to giving up on the existence of persisting human beings, because they can be identified with their incorruptible souls. This is the view that David Gorlaeus—another proponent of a radically revisionary account—would articulate at the start of the seventeenth century (§28.4). Autrecourt, however, is unwilling to concede even this much to commonsense ontology. He contends that although we speak as if an old man is the same as a boy, in fact this is not true at all. Without even bothering to cite the obvious sorts of changes in material composition that had concerned Ockham, Buridan, and Oresme, Autrecourt takes for granted that the only hope of accounting for human diachronic identity is in terms of something like sameness of soul, a hypothesis he then resists by showing how the various “powers” of a boy and an old man differ. Although his remarks here are quite compressed, his point seems to be that such differences in powers undermine whatever sort of psychic continuity one might want to postulate as accounting for the enduring individual. Autrecourt pays special attention to the power of memory, where one might suppose there is some sort of notable sameness over time. Even here, however, he argues against sameness: to remember is for one power to conceive of objects that had in the past been conceived of by a distinct power. What gives the illusion of sameness is the continuity of such powers: “because the change of powers is continuously toward some very close state, [the individual] is always said to be numerically the same. This would perhaps not be so if a one-year-old boy were suddenly made old” (*Tractatus* p. 252). Since we do not experience any such sudden discontinuities, we speak as if there is genuine identity in persons over time. In actual fact, however, there is none.

This conclusion leads Autrecourt into a very interesting discussion of the practical implications of his conclusion. He admits that although we punish someone for having
committed a crime in the past, “from a strictly rational perspective it is true to say that he who is punished is not guilty” (ibid.). Similarly, although we fear death, we are wrong to think of death as the end of a single, persisting substance. But this is not to say that our attitudes are misguided. Our fears of punishment and death are natural to us, and beneficial, because if we had no concern for future punishments the results for society would be dire. Hence “such fear is endowed by nature so as to account for one’s resisting sin” (ibid.). Likewise, although death is not what we take it to be, it is an evil: “the evil is that a well-made connection of beings is dissolved.” Accordingly, “if it were not feared, many evils and many homicides would be committed” (ibid.). So although our attitudes toward the past and future are liable to push us toward a false metaphysical framework, nature has done this for a reason. Even if there is no enduring I that will be benefited over time, the sequence of beings that I think of as myself is benefited in just the way society as a whole is benefited.

In the later sixteenth century, such radical ideas about diachronic identity begin to be voiced in a skeptical key. Michel de Montaigne’s “Apology for Raymond Sebond” (1580) quotes Plutarch at length on the changeability of all material things. Francisco Sanches’s Quod nihil scitur (1576) makes a similar point in a more philosophically rigorous context:

Between coming to be and passing away, how many changes take place? Countless. Among living things there is constant nourishment, growth, maturity, and then decline, generation, the variation among offspring, change, decay, addition, development of character, actions, work of different sorts—contraries very often even within the same individual. In all, no rest. Nor is it surprising that some held the view that it cannot be said of any one human being, after one hour, that he is the same one he was an hour ago. This view should not be entirely rejected; indeed, it may be true. For so indivisible is identity that if you were to add or take away from any given thing one single bit (punctum) of it, it would no longer be entirely (omnino) the same thing. . . . “I know,” you say, “that the individual thing is always the same for as long as the same form remains; for it is from that form that the thing is said to be some one thing. . . .” But what I held was that, for identity, nothing must be changed; otherwise the thing is not entirely the same. (pp. 126/228)

Although one cannot be sure who Sanches has in mind when he speaks of those who deny human diachronic identity (lines 4–6), the parallels with the nominalists are certainly striking. Like them, Sanches insists on the indiscernibility of identicals: this is what it means to remark that “for identity, nothing must be changed” (line 11). He moreover takes this to have just the consequences that Buridan and others had claimed: endorsing mereological essentialism (line 7–9), he contends that any change to the parts entails a change to the whole. Furthermore, again like the nominalists, he describes this as showing that the thing is not “entirely the same” (line 8), as if what one has in such cases is mere partial identity.

For present purposes there is not much more to be said about Sanches, and even less about Montaigne, because both of these authors use these remarks about diachronic identity merely to make a skeptical point: that our knowledge of the material realm is

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9 For Montaigne, see Complete Essays pp. 455–6. Another example of a skeptically inclined treatment of diachronic identity can be found in Gianfrancesco Pico’s Examen vanitatis III.12, where a consideration of the part–whole identity thesis leads to some skeptical remarks about how we can arrive at any account of diachronic identity.
so feeble that we do not even know when things come into and go out of existence. Given that our present focus is on authors who have a positive theory of diachronic identity, we must move on, into the seventeenth century. Here we find a range of approaches, from the sort of atheoretical quietism I ascribe to Descartes to the radically revisionary views of Gorlaeus, according to which the only things that exist are permanent. Gorlaeus’s atomism later has as its counterpart the monism of Conway (§27.5) and Spinoza, whose views lie just beyond the horizon of this study. Also lying just out of sight is Leibniz’s view that questions of individuation—synchronous and diachronic—can be handled only by postulating something like the metaphysical entities of the scholastics. In the remainder of this chapter and in the next I wish to consider what seems on its face to be still another sort of option, first suggested by Hobbes and then spelled out in similar terms by Locke. According to this option, the problem of diachronic identity admits of a solution (contra quietism) that preserves our commonsense ontology (contra radicalism), but without requiring any sort of quasi-scholastic metaphysical parts (contra Leibniz). What one needs to see, according to both Hobbes and Locke, is that questions of identity through time depend on how one describes the thing in question. What I will argue, however, is that this is not a new approach to identity at all, but merely another version of the familiar nominal approach to the problem, insisting on a strict and uncompromising approach to true identity, while offering various looser accounts of why we often speak as if two things are the same.

29.5. Hobbes’s Radicalism

Hobbes’s De corpore (begun c.1643; publ. 1655) squarely addresses the issue of diachronic identity for material substances, describing “a great controversy among philosophers concerning the principle of individuation” that arises from “comparing the same body

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10 See §25.6 and §28.5. Descartes’s correspondence with Mesland from February 1645 might suggest a view of identity along the lines being considered in this chapter and the next. Descartes there contends that we should think of the identity conditions of body differently depending on whether we think of it qua body or qua human (IV:166), and so regard it as subject to mereological essentialism or to being individuated by its union with the soul. Since I have already raised doubts not just about Descartes’s overall interest in articulating a theory of material substance, but also about the weight that should be given to this passage in particular (§24.5), I had best leave discussion of these remarks to others.

There are also interesting questions regarding how Descartes might be able to account for the diachronic identity of the mind, as well as the synchronous individuation of one mind from another. The issues here interact with how one conceives of the relation between substances and modes in his theory (see Chs. 8 and 13). For an interesting attempt to sort some of these issues out, see McCann, “Cartesian Selves.”

11 A fuller discussion of debates over diachronic identity over our period would need to take into account the many discussions of whether the same thing can go out of existence and then come back into existence. An early example can be found in Giles of Orleans, who holds that according to philosophy this is never possible, but that the faith teaches otherwise, in the case of human beings, whose bodies are resurrected after death (In Gen. et cor. I.22). Buridan reaches the same conclusion (In Gen. et cor. I.24), as does Oresme, who uses the occasion to argue for the essentiality of origins (In Gen. et cor. I.9–10). For discussion of these and other texts, see Caroti, “Generatio potest auferri” and Braakhuis, “Possibility of Returning.” Scotus is an example of the opposing view that origins are not essential, and that there is no natural impossibility in a thing’s going out of existence and coming back (Ord. IV.43 qq. 1 and 3, and Cross, “Identity”). The issue remains prominent in the seventeenth century, for instance in Thomas White, who argues that an individual could come back into existence only if the rest of the universe were exactly as it was when that thing first came into existence (De mundo pp. 108–15). It is this discussion that seems originally to have motivated Hobbes’s discussion of diachronic identity. For an earlier discussion along these same lines see John Major, Sente. IV.43.1. Like White, he admits the possibility of recurrence, but only if the whole universe were to enter into precisely the same state for a second time, which could happen only supernaturally.
to itself at different times” (11.7). He proceeds to sketch what he takes to be the three standard views on the subject: that substances are individuated by matter; that they are individuated by form; and that they are individuated by accidents. This serves as a pretty good summary of scholastic theories of synchronic individuation: what makes this substance distinct from that one, at a particular time. Rather jarringly, however, Hobbes proceeds to consider these as three solutions to the problem of diachronic identity. This, it must be said, does considerable violence to scholastic views. Matter and accidents, after all, can only make trouble for a theory of identity through change; they cannot be part of the solution, given that these are the very things whose change needs to be accounted for. Even so, this way of setting out the debate is conducive to Hobbes’s view, because he thinks that a theory of diachronic identity needs to take account of both form and matter, and that neglecting either leads to contradiction. Introducing the familiar case of the ship of Theseus, Hobbes makes an ingenious argument. On one hand, he says, it seems clear that one can replace the parts of the ship one by one, even up to the point of eventually replacing all the parts, without the ship’s losing its identity. But, on the other hand, suppose one collects all the discarded pieces, and builds a ship with it. It seems clear that this too would count as the same ship of Theseus, and so “we would have two ships that are numerically the same, which is completely absurd” (ibid.). From this he concludes that “the principle of individuation should be judged to come not always from matter alone, nor always from form alone” (ibid.).

Where does that leave us? Hobbes immediately makes an extremely interesting proposal, which deserves to be quoted in full:

We must instead consider by what name anything is called, when we inquire concerning its identity. For it makes a great difference to ask concerning Socrates whether he is the same human being or whether he is the same body. For his body, when he is old, cannot be the same it was when he was an infant, by reason of the difference of magnitude; for one body always has one and the same magnitude. He can, however, be the same human being.

So whenever the name by which it is asked whether a thing is the same as it was is imposed on the basis of the matter only, then, if the matter is the same, it is the same individual:

- as the water that was in the sea is the same that is afterwards in the cloud;
- and a body is always the same, whether the parts of it be put together or dispersed; or whether it be congealed or dissolved.

If, however, the name is imposed on the basis of such a form as is the principle of motion, then as long as that principle remains, it will be the same individual:

- as it will be the same human being whose actions and thoughts are all derived from one and the same principle of motion—namely, from that principle that was in his generation;
- and that will be the same river that flows from one and the same source, whether the same water, or other water, or something other than water flows from there;
- and it will be one city, whose acts continually derive from one and the same institution, whether there be the same human beings in it or different ones.

Lastly, if the name is imposed on the basis of some accident, then the identity of the thing will depend upon the matter; for, by the taking away and adding of matter, accidents are destroyed and new ones are generated that are not the same numerically.
Thus a ship, by which is signified matter so figured, will be the same if the matter is the same; but if no part of the matter is the same, then it is an entirely distinct ship, numerically; and if part of the matter remains and part is lost, then the ship will be partly the same, and partly distinct. (De corpore 11.7)

The core of Hobbes’s idea is to analyze questions of diachronic identity in terms of the names under which we ask the question. If asking about Socrates’s identity over time, for instance, one may ask whether he is the same human being or the same body, and arrive at two different answers (lines 2–5). In general, the sort of criterion one arrives at depends on whether the name is imposed on the basis of matter, form, or accident.

It is an initially surprising feature of Hobbes’s account that the third case, accidental variation (lines 22–5), collapses into the first case, that of variation in matter. One might have thought, instead, that accidental change would pose distinct problems for diachronic identity. Here, however, Hobbes is very much in sync with earlier treatments of these issues. It is in fact a striking feature of discussions of identity through change, throughout almost the whole history of philosophy, that they have focused not on qualitative change—change in accidents—but on material change. From the Hellenistic era, through the Nominales of the twelfth century, the nominalists of the fourteenth, Sanches in the sixteenth, and now onto Hobbes in the seventeenth, what motivates problems of diachronic identity is the coming and going of parts. No one, in contrast, seems worried about the analogous argument from qualitative change: that today Socrates is tan, whereas last winter he was pale, and that consequently he is not the same person. On its face, this version of the argument is neither more nor less plausible than the argument from growth, but for the authors we are considering only the argument from growth and decay has any appeal. This is clearly Hobbes’s view too. He maintains that the gain or loss of a part violates identity, but yet “a body is always the same, whether the parts of it be put together or dispersed; or whether it be congealed or dissolved” (lines 9–10). Since, for Hobbes, all the qualities of a thing arise from facts about how its parts are “together” or “dispersed,” he is evidently committed to the doctrine that qualitative change is compatible with identity, whereas mereological change is not.

To a modern eye, this may seem baffling. On reflection, however, the reasons for it are clear. Throughout our period, accidental changes are the wrong sort of change to motivate worries about diachronic identity, because accidents are either nothing at all, as on Hobbes’s view (see §7.1, §10.2), or else are extrinsic to the substance on its standard thin construal (§6.1). On the latter approach, pale Socrates is a per accidens composite, and it is an uninteresting fact that such composites are in constant flux. No one cares about telling a unifying story about their identity over time. Indeed, one of the payoffs of the substance–accident distinction, as we saw most clearly in Descartes’s case (§8.2, §13.6), is that it offers a clear story about how substances persist through accidental change. The lesson of this chapter, however, is that that strategy works for only certain kinds of accidental change—the kinds that involves the gain or loss of accidental forms. Growth and decay are quite a different story, because here what is gained or lost is a part of the thin substance itself. The idea we have seen periodically surfacing from
antiquity all the way to Hobbes and beyond is that in such cases, strictly speaking, there is no persisting whole.

Hobbes's similarities with the nominalist tradition grow out of three shared principles:

1. Mereological essentialism
2. The part–whole identity thesis
3. A tolerance for partial sameness.

He commits himself to the last of these in lines 25–6 above. The first and second claims are made explicit in a closely parallel discussion from his De mondo (1642), an unpublished response to Thomas White that looks to have served in effect as the first draft of this discussion from the De corpore. The De mondo remarks:

Suppose it is asked of any body—for instance a ship—whether it is the same being or body that it was before. In that case, since the name ‘being’ and ‘body’ pick out nothing other than the matter, it follows that if the matter is the same as it was before, so that no part of it has been cast off, nor has any new matter been added, it will be numerically the same being and numerically the same body as it was before. If, on the other hand, some part of the prior matter has been cast off or another part has been added, then that ship will be another being or another body. For a body cannot be numerically the same whose parts are not all the same, since all the parts together are the same as the whole. (12.3)

The first six lines do not add anything to the picture of the De corpore passage, other than that ‘being’ is another of the names that trigger a focus on material sameness. The last sentence gives us something new: it both identifies a necessary condition for material sameness (sameness of parts) and provides a quick rationale for that condition (the part–whole identity thesis).

Although the similarities with the earlier nominalists are striking, Hobbes seems at first glance to have something new to say. For whereas the nominalist approach was to concede that, strictly speaking, there is no diachronic identity through mereological change, Hobbes does not seem to say that. Instead, he says that whether this is the right answer depends on how we describe the situation, and that under certain descriptions it is true to say that the thing persists. So we can talk about the same human being persisting through time as the same human being (and analogously for a river or a city), in virtue of there being the same form that is the “principle of motion” (lines 11–19 of the De corpore passage). Given Hobbes’s strict, anti-hylomorphic corpuscularianism, it seems clear that ‘form’ here is being used in an extended sense that has little in common with scholastic views. Since he has no use for forms in any Aristotelian sense, he co-optes the term to refer to the origin of a human being, river, or city. The earlier De mondo discussion, in contrast, although closely parallel in many respects, understands sameness in form differently, in terms of continuity: thus a river remains the same river in virtue of the “unity of its flow, which is a single continuous motion,” and a human being is the same human being “on account of the unity of the flow by which matter is expelled and reintegrated” (12.4). This is of course precisely the idea that the nominalists tried to exploit. One can perhaps see, however, why Hobbes would have shifted away from continuity toward sameness of source. Consider, for instance, a Colorado river that goes dry in the fall and runs again in the spring. Even some living things are
more like that than we usually recognize: think not of an oak tree, but of, say, an iris, which survives the winter only in its rhizome, underground.

There are many such details worth investigating in Hobbes’s account, but here I will confine my attention to the most general question of what it means to make questions of diachronic identity relative to the names we use. It is natural to suppose that Hobbes is committing himself here to the existence of both a human body (corpus) and a human being (homo), insisting that we make precise which one we are talking about, so that we know which identity conditions to apply. In the context of Hobbes’s broader metaphysics, however, it is quite clear that nothing could be farther from what he has in mind. As we saw in §27.5, Hobbes is a fervent anti-essentialist, according to whom both accidental and essential predicates are simply names for different ways of conceiving a thing. Hence to use our different names as the basis for drawing a distinction between different things would be from Hobbes’s perspective the worst sort of mistake. Indeed, he explicitly remarks in the Leviathan, in the context of criticizing scholastic theories of essences, that “when we say a man is a living body, we mean not that the man is one thing, the living body another, and the is or being a third, but that the man and the living body is the same thing, because the consequence if he be a man, he is a living body is a true consequence, signified by that word is” (46.17). Clearly, then, Hobbes does not meant to license a distinction between human beings and their bodies, as if these are two distinct coinciding entities, with distinct identity conditions.

If Hobbes draws no such distinction, then we evidently must decide which of the two criteria Hobbes offers us is the metaphysically true one—in the sense of being the one that holds of the thing itself. Reflection on his broader views, in light of §28.4, makes that an easy question to answer. What exist through time, for Hobbes, are what he above calls beings or bodies—a mass of material existing in any arrangement whatsoever, united or dispersed. His commitment to the doctrine of strict permanence requires him to say that, in strict metaphysical fact, there is no such thing as a human being, river, city, or ship that endures through significant stretches of time. All of those things exist, to be sure, inasmuch as they are simply a certain collection of matter, but the way we talk about such things requires giving them persistence conditions that violate the fundamental metaphysical principle that nothing begins or ceases to exist. Indeed, his most categorical statement of strict permanence comes in the De mundo immediately after the discussion of diachronic identity: “a being (ens) cannot naturally go out of existence. For even if a ship or a plank ceases to be a ship and a plank, it nonetheless never naturally ceases to be a being” (12.5).

By insisting that questions of diachronic identity must be couched in terms of the names we use, Hobbes means to signal that he is not talking about how the world is. We have the concept of a ship, a river, a body, a human being, and we can give an analysis of the conditions under which that concept is satisfied. In actual fact, however, nothing goes into or out of existence. A ship, at a time, is a more-or-less temporary aggregation of various pieces of matter, and a human being, at a time, is another such aggregation. These are ways we construe the world, based on its appearances. Thus, in Hobbes’s own words, “a body can neither be generated nor destroyed, but only appear to us in one way and then another, under different images, and consequently be named in one way and then another” (De corpore 8.20). This just is the nominal theory of identity, shorn of the substantial forms that serve to hold clusters of
matter together. Without anything like a substantial form to enter into the identity conditions of bodies, Hobbes abandons any restrictions on what counts as composition, allowing a body to remain in existence "whether the parts of it be put together or dispersed; or whether it be congealed or dissolved" (lines 9–10 above). This yields that most unscholastic of results, that nothing naturally comes into or goes out of existence. Thus even while Hobbes borrows from the nominalists a theory of how to understand our ordinary ways of talking about identity through change, he abandons any vestige of a commonsense ontology.12

12 There is little secondary literature on Hobbes's theory of diachronic identity. For some brief remarks, see Ayers, Locke II:212, and Thiel, "Individualization" pp. 236–7.

I do not think we can assume that a figure like Hobbes had much familiarity with the nominalist tradition, and I do not take myself to have proved that Hobbes draws on that tradition in his thinking about diachronic identity. There is, however, at least some evidence that Hobbes was interested in Ockham—see Berthard, "Nominalisme" pp. 239–40n.

Hobbes insists on part–whole identity in some English notes on a draft of the De corpore: "That which is put for all whereof it consists is called totum, and the singulars when from the division of the whole they are again severally considered are the parts thereof; therefore the whole and all the parts taken together are absolutely the same" (in Hobbes, Critique du De monde appendix II, p. 451, original emphasis). That same draft contains a brief statement of his theory of diachronic identity (ibid., pp. 459–60).

The substance–accident distinction not only makes it easy to tolerate identity through accidental change over time, but even makes it conceivable that the same thing could have distinct accidental properties at the same time. John Major explores this possibility in some detail, in a discussion of whether a body can wholly exist at more than one place at the same time—that is, can exist holenmerically. Major considers a series of objections to this possibility, on the grounds that Socrates, say, might at the same time be warm in Rome but cold in Paris, or receive divine grace in Rome but not in Paris (Sent. IV.10.2, f. 42vab). His response is simply to hug the monster—something he can countenance because these accidents are distinct from the substance.