The Early Modern Rationalists and the Substantial Form:

From Natural Philosophy to Metaphysics

Valtteri Viljanen (valvil@utu.fi)
University of Turku

Abstract

This paper argues that, contrary to what one might think, early modern rationalism displays an increasing and well-grounded sensitivity to certain metaphysical questions the substantial form was designed to answer – despite the fact that the notion itself was in such disrepute, and emphatically banished from natural philosophy. This main thesis is established by examining the thought of Descartes, Spinoza, and Leibniz through the framework constituted by what have been designated as the two aspects, metaphysical and physical, of the substantial form. This examination shows that Descartes ends up assigning the soul a notable metaphysical task formerly assigned to the substantial form, whereas Spinoza advances a theory of essences motivated by the philosophical concerns behind the two aspects of the substantial form. Leibniz finally makes a sharp distinction between natural philosophy and metaphysics as he develops a dynamistic theory that deliberately aims at understanding the substantial form in a new fashion. This line of development is designated as one major factor contributing to the separation of philosophy and natural science.
In the seventeenth century, the notion of substantial form came to be one of the most contested, not to say ridiculed, features of the traditionally dominant Aristotelian natural philosophy. What did the philosophers widely regarded as the three major early modern rationalists think about the controversial notion? It seems that the answer is readily at hand: René Descartes (1596–1651) and Benedict de Spinoza (1632–1677) emphatically rejected it, whereas Gottfried Wilhelm Leibniz (1646–1716) endorsed it, bringing a new turn to the debate by attempting to rehabilitate the time-honored doctrine. However, on a closer look, this answer appears superficial to the point of being misleading. In fact, things are considerably more complex, and examining the fate of the notion of substantial form allows us to see some key aspects of early modern thought, especially the relationship between natural philosophy and metaphysics, in new light.

We can begin by a brief survey of what was traditionally meant by substantial form, or the form of a substance. For the Renaissance scholastics, natural substances are unions of form and matter; as already Thomas Aquinas had stated, “[b]y form, which is the act of matter, matter is made a being in act and an individual substance”¹ – or, as Robert Pasnau (2011, 550) puts it, for Aquinas one of substantial form’s major tasks is to be “the actualizer of prime matter.” Through such actualization, a substance is formed. Moreover, on Aquinas’s reading of Aristotle, precisely the formal and material causes are intrinsic principles, whereas the efficient and final causes “are external to the thing.”² Together, form and matter compose what is innermost to a thing, namely its very essence: that “according to which a thing is said

¹ *On Being and Essence* II (SW, 37).
to be.”

Thereby is constituted a concrete particular thing of a certain kind. According to the preeminent medieval line of thought, form determines the species of a thing (e.g., human), whereas matter is responsible for making individuals of the same species particulars different from each other (e.g., Socrates and Plato). The appearance, presence, and disappearance of a substantial form was invoked to explain why sometimes a thing is generated, sometimes destroyed, and sometimes merely altered. Substantial forms also make material things genuine unities instead of mere aggregates.

From a broader perspective, I believe that it can be said, despite all the variance in the late scholastic natural philosophy, that there was an extremely widely shared ground-level conviction that there must be something in the world, namely substantial forms, that make things what they are: principles that (when joined with matter) constitute substances on which natural philosophy focuses. In as plain terms as possible, these principles determine what it is to be a thing; more finely put, they are the key ontological features that determine the identity and nature of substances as unified individuals such as human beings, horses, trees, etc. This is what has come to be called the metaphysical aspect of substantial form; but there is also another aspect, what can be labeled physical, by which is referred to the more robust

---

3 On Being and Essence II (SW, 38).

4 What makes something numerically different from all other things (of its own species) is what the medievals understood as the problem of individuation proper. The prevalence of the line of thought designating matter as the principle of individuation is beyond doubt, but there certainly were also many other notable positions; for a helpful discussion of different medieval theories of individuation, see King 2000.

5 For good accounts of these facets of substantial form, see Des Chene 1996, 69–73; Pasnau 2011, 553–557; Shields 2012, 39–45.

6 I have found the studies of such present-day Aristotelian metaphysicians as David Oderberg (2007, ch. 4; 2011) and Tuomas Tahko (2013) very helpful for discerning this basic philosophical view.
causal role assigned to the substantial form in the natural world: for instance, the substantial form of fire causes it to have the accident of hotness.\textsuperscript{7} Thus, substantial form had highly prominent physical and metaphysical explanatory tasks.\textsuperscript{8}

At first sight, things look very different in the beginning of the early modern era, with its well-known preference for mechanistic explanation in a world considered a book “written in mathematical language” with “triangles, circles, and other geometrical figures” as its characters.\textsuperscript{9} With regard to our topic, the pioneering work by Thomas Hobbes (1588–1679) offers a particularly striking contrast to the late scholastic philosophical framework. According to the Hobbesian first philosophy, the reality consists of nothing else but extended bodies in motion. As Doug Jesseph (2006, 119) aptly sums it up, in Hobbes’s “scheme of things motion is the only cause, and because all of philosophy involves reasoning about causes, he is committed to the thesis that motion is the ultimate explanatory concept.” According to the Hobbesian view, all causal efficacy and change consist in motion alone; “mutation can be nothing else but motion of the parts of that body which is changed.”\textsuperscript{10} Given this, even though Hobbes designates how such notions as form and essence are to be understood in his system,\textsuperscript{11}

\textsuperscript{7} This is my understanding of the helpful distinction presented by Pasnau (2011, ch. 24); see also Hattab 2009, 2–3.

\textsuperscript{8} This holds despite the fact that, in Aristotelian empiricism, the knowledge of substantial forms is a relatively complicated issue: they cannot be conceived by the senses and have to be posited as the best explanation for perceived effects and changes in natural things. For discussions on this, see e.g. Rozemond 1998, 135; Shields 2012, 46–47, 60–61.

\textsuperscript{9} Galileo, \textit{The Assayer}, § 7.1; \textit{EG}, 183.

\textsuperscript{10} \textit{De corpore} II.9.9; \textit{EW} I, 126.

\textsuperscript{11} In \textit{De corpore} II.8.23 (\textit{EW} I, 117), Hobbes equates the two notions.
there seems to be ultimately left no genuine work to be done for them.\(^\text{12}\) It is quite revealing that early in *De corpore* Hobbes talks about “that confusion of words derived from the Latin verb *est*, as *essence*, *essenti-ality*, *entity*, *entitative* [...] philosophy has no need of those words *essence*, *entity*, and other the like barbarous terms.”\(^\text{13}\) It is difficult to see how there could be anything even remotely resembling substantial forms in this kind of materialist kinematism.

However, despite the preeminence of the mechanical sciences and the explicit criticism of substantial forms by major early modern thinkers, we should not consider Hobbes’s position as one that would particularly well represent the philosophy of his age: on the contrary, his parsimonious thought avoids to an exceptional degree introducing elements that would address the central questions to which substantial forms, with their two aspects, were responses. Hobbes’s rationalist colleagues were less driven by ontological parsimony and more concerned about developing systems with metaphysical explanatory power.\(^\text{14}\)

In this paper I examine the early modern rationalist thought through the framework of the two aspects, physical and metaphysical, of the substantial form to show that the rationalists display an increasing sensitivity to metaphysical questions the substantial form was designed to answer – despite the fact that the notion itself was in such a disrepute, and no doubt discarded in its Aristotelian form. This indicates that the original idea behind the introduction of substantial forms was considerably less mysterious than the proponents of mechanistically oriented natural philosophy may have been willing to allow, and that the early modern fate of the contested notion was considerably more nuanced an issue than


\(^\text{13}\) *De corpore* 1.3.4; *EW* 1, 34, the first emphasis added.

\(^\text{14}\) On the parsimoniousness of Hobbes’s thought, as well as its problems, see Jesseph 2006, esp. 128, 152.
often has been assumed. In fact, there is a significant philosophical and historical lesson to be learned: the framework of the two aspects of the substantial form – with which we can throw a cross-light on the thought of the three early modern rationalists to illuminate the differing conceptual architectonics of their philosophies – allows us to discern something rather profound about what is required to build a workable metaphysics even though substantial forms were banished from natural philosophy. For Descartes, this meant assigning the soul a notable metaphysical task formerly assigned to the substantial form; for Spinoza, advancing a theory of essences motivated by the philosophical concerns behind both aspects of the substantial form; for Leibniz, developing a philosophy of forces that deliberately aimed at – and contributed to – reshaping our understanding of the relationship between natural philosophy and metaphysics. Somewhat ironically given Leibniz’s unificatory tendencies, by treating the metaphysical and the physical domains as clearly different from each other, he in fact was partly responsible for the separation of natural science from philosophy.

2. Descartes, substantial form, and identity

In the Cartesian framework, natural things are bodies the essence of which is extension. Other features of bodies are basically modifications of extension, and bodies are constituted simply by “extension in length, breadth and depth” (CSM II, 227). Descartes offers several arguments against the doctrine of
substantial forms, but here I take up only the one I consider central for the present purposes: substantial forms are to be discarded as useless and unknown, for they are not needed in explaining natural phenomena or found amongst the qualities of matter. The famous passage from a 1642 letter to Henricus Regius reads:

I fully 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. (CSMK, 207.)

Here Descartes is clearly referring to the physical aspect of substantial forms, and despite the fact that he expresses his point in the sensitive issue in a rather convoluted manner, the message is clear: substantial forms are to be avoided in explaining natural phenomena. In the Sixth Replies, Descartes argues that

---

15 For instructive discussions of Descartes’s arguments, see Garber 1992, ch. 4; Rozemon 1998, ch. 4; Hattab 2009, esp. ch. 1.
16 See also CSMK, 122, 205.
ideas of such things as substantial forms are formed by conflating mental and corporeal entities so that it seems as if bodies have minds that make them behave in certain ways (CSM II, 297–298).

The new geometrical and mechanistic picture of the natural world thus seems to have no need, or even room, for substantial forms. There is, however, a complication, which concerns the traditional territory of substantial forms, namely individuality. Now Descartes sets a very demanding criterion to the identity of corporeal things. In an important 1645 letter to Denis Mesland, he declares:

When we speak of a body in general, we mean a determinate part of matter, a part of the quantity of which the universe is composed. In this sense, if the smallest amount of that quantity were removed, we would judge without more ado that the body was smaller and no longer complete; and if any particle of the matter were changed, we would at once think that the body was no longer quite the same, no longer numerically the same. (CSMK, 242–243.)

It is relatively easy to see how Descartes’s geometrical corpuscularianism leads to this view: to put it roughly, if a body changes its quantity, or the components of which it consists alter, the obvious upshot is that the body is not the numerically same thing anymore. However, it is just as easy to see that the criterion is strict to a problematic degree. If any change for instance in the parts of the human body means that the body will no longer be the same body, the obvious corollary is that our bodies have an extremely short-lived, almost an ephemeral existence. In fact, Descartes himself acknowledges this: “I do not think that there is any particle of our bodies which remains numerically the same for a single mo-

---

17 For discussion see e.g. Grosholz 1994; Alexandrescu 2009.
ment” (CSMK, 243). This seems, in any ontology of substances, a highly radical, even counterintuitive result. Perhaps due to this, Descartes indicates that there is also a less strict way to view the identity of corporeal things. Earlier in the same letter to Mesland, he writes:

[W]e can say that the Loire is the same river as it was ten years ago, although it is no longer the same water, and perhaps there is no longer a single part of the earth which then surrounded that water. (CSMK, 242.)

This example is presented after a discussion of transubstantiation; the criterion of diachronic identity endorsed is “identity or similarity of the dimensions” (CSMK, 242). This dimensional criterion is considerably more loose than the one concerning bodies “in general,” and it is not altogether clear how the two criteria relate to each other. Be this as it may, Descartes elaborates or endorses neither of them when he discusses the identity of human bodies. Instead, he opts for a strategy of a completely different kind:

But when we speak of the body of a man, we do not mean a determinate part of matter, or one that has a determinate size; we mean simply the whole of the matter which is united with the soul of that man. 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 body, so long as it remains joined and substantially united with the same soul; and we think that this body is whole and entire so long as it has in itself all the dispositions required to preserve that union. Nobody denies that we have the same bodies as we had in our infancy, although their quantity has much increased.
and, according to the common opinion of doctors, which is doubtless true, there is no longer in them any part of the matter which then belonged to them, and even though they no longer have the same shape; so that they are numerically the same only because they are informed [qu’à cause qu’ils sont informez] by the same soul. (CSMK, 243, emphases added.)

Now this criterion has the extremely welcome feature of offering the kind of explanation that might successfully justify the commonsensical idea that the human body stays numerically the same through various changes, even from infancy to old age, by offering a rather robust sense in which a body may be said to be a unity that has identity over time not threatened by various small-scale (or even larger-scale) corpuscular changes it may undergo. However, here Descartes comes very close to the standard Renaissance scholastic understanding of the soul as the substantial form of the human body. More precisely, the soul has a role matching one of the metaphysical tasks in which substantial forms were involved: it determines the identity of the thing, in this case that of the human being. This, in itself, is not a new observation. Pasnau (2011, 570–571) has recently made it concerning diachronic identity,\(^\text{18}\) although he eventually contends that “[t]he vast preponderance of evidence favors discounting those letters, and so regarding Descartes as an unqualified opponent of the doctrine of substantial form” (2011, 573); whereas Paul Hoffman (1986, 358), famously defending a hylomorphic reading of the Cartesian mind-body union, has argued on grounds of the passage above that “the Cartesian mind can be said to actualize the human body” in a way comparable to the Thomistic soul. Moreover, it is well-known that in the very same letter to Regius in which Descartes rejects substantial forms as useless, he nevertheless does

\(^{18}\) See also Ariew and Grene 1997, 316.
call soul “the true substantial form of man” (CSMK, 208), which might be taken as a sign that the later letter to Mesland deliberately endorses and elaborates a theory of soul as the substantial form of body.

I would like to make four points about this extremely nuanced issue. First, the passage from the letter to Mesland says little if anything about the nature of the union of mind and body; rather, be the nature of that union what it may, hylomorphic or not, the focus is on the identity of the human body.

Second, the fact that Descartes calls the soul the substantial form of man does not, in itself, amount to much. In the letter, he is telling Regius how to express his views cautiously so that he would not alarm the authorities; and as Marleen Rozemond (1998, 164) puts it, “Descartes had strong political reasons for saying that the soul is a substantial form,” “[f]or the Church had stated as official doctrine at the Lateran Council of 1513 that the intellectual soul is the form of the human body.” Given this, it seems probable that here Descartes is himself following the advice he gives to Regius: “I should like it best if you never put forward any new opinions, but retained all the old ones in name, and merely brought forward new arguments” (CSMK, 205, emphasis added). This prompts the focal question: what is the positive philosophical work the notion of substantial form does? It seems that the answer is: none. Descartes invokes it while arguing, partly polemically, that it is not those who deny material sub-

---

19 I thus agree with Rozemond’s (1998, 163) observation: “[I]n the letter to Mesland Descartes is not at all concerned with the question of the unity of the human being.” My overall impression is that even though Descartes sometimes speaks about the mind-body union in traditional Aristotelian terms, he is still quite far removed from endorsing a basically hylomorphic view of the union. Rozemond (1998, ch. 5) quite convincingly locates the crux of the issue to lie in the fact that the Cartesian mind and body are not incomplete without (and dependent on) each other the way the hylomorphically conceived soul and body are.

20 See also Pasnau 2011, 596.

21 See also Rozemond 1998, 153.
stantial forms but those who endorse them that “can be forced by solid arguments to become either beasts or atheists” (CSMK, 208).\(^\text{22}\) For philosophical purposes, he might just as well only talk about the immortal and incorporeal soul immediately created by God, and have all his argument requires.\(^\text{23}\)

Third, and to return to the Mesland letter, I think that Pasnau (2011, 571–572) is right in claiming that the passage concerning the identity of the human body does not warrant the claim that the soul, as substantial form, would *cause* the continuation of the body’s existence; in fact, a well-known article in the *Passions of the Soul*, i.5, speaks against this:

> It is an error to believe that the soul gives movement and heat to the body. […] We ought to hold, on the contrary, that the soul takes its leave when we die only because *qu’à cause que* this heat ceases and the organs which bring about bodily movement decay. (CSM I, 329.)\(^\text{24}\)

Here as in the letter to Mesland, it is difficult to discern the force of the “because” (*à cause que*) involved – it certainly points toward causal activity, but hardly in a conclusive way. In any case and at the very least, the quoted article of the *Passions of the Soul* makes it completely clear that, for Descartes, soul does

\(^\text{22}\) As Rozemond (1998, 127) notes, this phrase is taken from Voetius, the Rector of the University of Utrecht, who had attacked Regius for the rejection of substantial forms.

\(^\text{23}\) In the Fifth Replies, Descartes grants that the soul, or mind, can be called “the principal form of man,” but does not use the notion of substantial form to explicate his stand – in fact quite the contrary: “Our job, however, is not to change the names after they have been adopted into ordinary usage; we may merely emend their meanings[.]” (CSM II, 246.)

\(^\text{24}\) See also the *Passions of the Soul* I.6: “[D]eath never occurs through the absence of the soul, but only because one of the principal parts of the body decays.” (CSM II, 329.)
not play a direct causal role in keeping the body in existence. In fact, the persistence of the union seems to have little to do with causality either from mind to body or vice versa, but rather with compatibility. It thus seems evident that the so-called physical aspect of substantial form is not attributed to the rational soul.

However and finally, from all these negative points it does not follow that the soul would not have a *metaphysical* role to play: even if the soul were not the physico-naturalistic *cause* of the body’s diachronic identity, *it still seems to be the feature crucial for the identity, both synchronic and diachronic, of the human body*. This claim is corroborated by a later letter to Mesland, in which Descartes states that “the numerical identity of the body of a man does not depend [ne depend pas] on its matter, but on its form, which is the soul” (CSMK, 279). Certainly, on Descartes’s account, only bodies functioning in certain ways in fact partake in mind-body unions, but the key question is whether or not the rational soul “informs” or is united to a certain complex body. If it is united, the body in question – a complex corporeal entity consisting of a wide variety of different parts – is a particular human body, not any ordinary piece of matter. This means that the Cartesian soul takes on a key individuative task traditionally assigned to the substantial form.

Descartes thus seems – despite his critical attitude toward the doctrines of substantial form in natural philosophy and the fact that the Cartesian soul is not causally responsible for the identity of its body – a reluctant witness of the philosophical need for an entity having one of the metaphysical tasks the Aristotelians designated to the substantial form when he attempts to delineate a plausible account

---

25 See CSM I, 315.

26 See also Normore 2008, 285.
of the identity of the human body. One might defend Descartes by saying that this neither violates his mind-body dualism in which the soul is a separate substance nor posits the soul as an unknowable agent causing natural effects. But still, one also might well find it unsatisfying to introduce to the “new” Cartesian philosophy anything that significantly resembles the “obscure” substantial forms. Be one’s view on this as it may, that is the road Descartes ultimately opts for when he elaborates his account of human individuality. This might well be the just the price he has to pay for locating the essence of being human in a mental substance decidedly detached from the corporeal nature.

3. Spinoza’s essentialism and the two aspects of the form

Spinoza’s contribution to the debate concerning substantial forms would at first sight seem to be extremely straightforward and brief, especially compared to all the ink he spills to attack final causes. 27 Already in the Metaphysical Thoughts II.1, Spinoza contends:

We have already pointed out that there is nothing in Nature but substances and their modes. So it is not to be expected here that we should say anything about substantial forms and real accidents, for these things, and others of the same kind, are clearly absurd. (C I, 315–316.)

27 See esp. E1app. I use the following method in referring to the Ethics (abbreviated as E): a = axiom, app = appendix, d = definition, le = lemma, p = proposition, pr = preface, s = scholium. For instance, E1p8s2 refers to the second scholium of the eighth proposition in the first part of the Ethics.
Also his correspondence contains some quick and harsh words about the doctrine of substantial form. In a letter to Oldenburg, Spinoza refers to “that childish and frivolous doctrine of Substantial Forms and Qualities” (C I, 208); in a later letter to Hugo Boxel he states,

[i]t’s no wonder that the people who invented occult qualities, intentional species, substantial forms, and a thousand other trifles contrived ghosts and spirits[.] (C II, 905.)

Of course, this leaves unclear what, exactly, makes doctrines espousing substantial forms so repugnant to Spinoza’s ontology of substance and modes. The primary reason for this is, I think, that Spinoza considers his system to be at odds with any form of hylomorphism: even though our mind has our body as its object (E2p13), soul is still not the form of the body, let alone thought the form of extension. A finite mind and the parallel finite body are simply one and the same thing considered under different attributes (E2p7s); regardless of how exactly this unity-conceived-under-different-attributes should be understood, it is clear that each and every attribute has its own kind of principles or laws of operation – and this holds also of extension, which has many important features “prime matter” lacks –,28 which principles generate the variety of individuals within the attribute. Another reason might be that Spinoza’s aprioristic way of doing philosophy, strongly stressing intellectual cognition that moves from causes

---

to effects,\textsuperscript{29} goes decidedly against the \textit{a posteriori} way in which the Aristotelian natural philosophy postulated substantial forms as best explanations of the observed effects of the physical world.\textsuperscript{30}

However, all this does not mean that Spinoza’s system would not contain elements rooted in the very philosophical intuitions behind the introduction of substantial forms. We should bear in mind that in Aristotelian essentialism, substantial form is one of the two ingredients in a (natural) thing’s essence; sometimes Aristotle even simply equates form alone with essence.\textsuperscript{31} An examination of Spinoza’s specific brand of essentialism — essentialism perhaps strikingly far removed from that of Descartes, and worlds apart from the reductive kinematism of Hobbes — shows it to have very notable affinities to the traditional doctrines of form as a cause, and even doctrines of substantial form. To show that Spinoza is in fact quite sensitive to the same concerns the Aristotelians were, I will again — for the sake of clarity — make four separate points, of which the first two are of more contextual, the latter two more systematic in nature.

First, we should keep in mind that the Aristotelian substantial form is the formal cause of the properties of the substance and consider the way in which for Spinoza geometrical objects serve as the paradigmatic examples of things:

\[\text{[F]}\text{rom God’s supreme power, or infinite nature, infinitely many things in infinitely many modes, i.e., all things, have necessarily flowed, or always follow, by the same necessity and in}\]

\textsuperscript{29} See e.g, \textit{E2p10s; Treatise on the Emendation of the Intellect} §§ 19–22 (C, 12–14).

\textsuperscript{30} See note 8 above.

\textsuperscript{31} See \textit{Metaphysics} 1032b1–2, 1035b32 (\textit{CWA II}, 1630, 1635).
the same way as from the nature of a triangle it follows, from eternity and to eternity, that its three angles are equal to two right angles. (E1p17s.)

Spinoza uses a geometrical example to illustrate the way in which the world with all the finite modifications is produced: the same way in which a certain property follows from the nature or essence of a triangle. Now as Paolo Mancosu states, the essence of a geometrical figure was still in the seventeenth-century philosophy of mathematics customarily seen as the *formal* cause of its properties:

The scholastic tradition would have assumed this [the proof concerning a triangle’s angles] to be a causal proof by maintaining the triangle must have an essence (given by a definition) that determines, as in a formal cause, the rest of its properties, in particular, the sum of the internal angles is equal to two right angles.32

Thus, strange as this may sound to us, the exemplarity of geometrical objects strongly suggests that the causal activity of all things should be conceived in terms of a prominent type of formal cause, namely in terms of an essence that is the cause of its bearer’s necessary properties (in traditional parlance, *propria*). In fact, it is quite unlikely that Spinoza would have been unaware of the fact that geometry was widely considered to be intrinsically linked to formal causality. Be this as it may, an important lesson to be learned from this is that *one can reject hylomorphism without rejecting every aspect of formal causality*: adopting a model of causality at least partly deriving from the formal causality pertaining to geometrical

objects – which have nothing to do with matter or the material cause – is completely consistent with the denial of hylomorphism.

Second, Spinoza uses emanative terminology traditionally connected to the operation of the (substantial) formal cause. We have already seen him claim that all modifications “have necessarily flowed [effluxisse], or always follow” from the essence of God-or-Nature. His 1676 letter to Oldenburg contains a more explicit reference to emanation:

The good which follows from virtue and the love of God will be just as desirable whether we receive it from God as a judge or as something emanating from the necessity of the divine nature. (C II, 471; see also C II, 387.)

The point here is that Spinoza’s God is not to be regarded as an anthropomorphic and transcendent agent who has a free will with which he chooses from various ends: things are what they are and the way they are because they necessarily follow, or emanate, from God’s nature. This is very much reminiscent of the way in which many late scholastics saw certain properties (such as heat or risibility) necessarily to follow from the substantial forms of natural things (such as fire or a human being). Spinoza once even calls the human mind the formal cause of its (adequate) ideas: “The third kind of knowledge depends on the mind, as on a formal cause [tangum a formali causa], insofar as the mind is eternal” (E5p31). However, I do not wish to press this terminological point too heavily. For the present purposes it suffices to point out that here the contrast is hardly to the final cause; the passage invites the reader to recon-
sider what exactly is the nature of “efficient” causality in Spinoza. It seems clear that it is, at least to a notable extent, molded after what was traditionally called the formal cause.33

Third, we have noted the late scholastic way of regarding natural agents as physical causes that bring about certain effects by their forms. For Spinoza, all things, including God, are natural and, more importantly, causally efficacious in virtue of their natures or essences: “Nothing exists from whose nature some effect does not follow” (E1p36). The contrast to Descartes’s conception of extension, which does not seem to have anything dynamic in it, is as striking as the philosophical intuition behind Spinoza’s tenet is easy to grasp: it surely is difficult to understand what it would mean for a real entity not to always have at least some effects on its surroundings (and perhaps on itself). At the very least, it must be capable of occupying a certain region of space or extension.

Finally, from early on Spinoza is very much alive – considerably more so than Descartes and Hobbes were – to the philosophical demand for features responsible for the way in which the world is structured; features that make things what they are, namely particular entities with certain core features. This, I believe, pushes him toward assigning essences a task corresponding to the metaphysical aspect of substantial forms. Two passages, one early, the other late, are enough to show this despite the fact that their precise meaning is a matter of some interpretation:

Understand the definite nature, by which the thing is what it is, and which cannot in any way be taken from it without destroying it, as it belongs to the essence of a mountain to have a val-

33 See e.g. Hübner 2015.
ley, or the essence of a mountain is that it has a valley. This is truly eternal and immutable, and must always be in the concept of a mountain, even if it does not exist, and never did.\textsuperscript{34}

I say that to the essence of any thing belongs that which, being given, the thing is [NS: also] necessarily posited and which, being taken away, the thing is necessarily [NS: also] taken away; or that without which the thing can neither be nor be conceived, and which can neither be nor be conceived without the thing. (\textit{E2d2}.)

These passages say, at the very least and to my mind uncontroversially, that essences constitute things, make them what they are.\textsuperscript{35} Given this, it is understandable that, as I read it, in the following passage Spinoza designates precisely essences as the metaphysical ground of individuality so that as long as there is a certain essence there is a certain individual (say, what we call a horse) whose level of perfection can – and often does – change; but should that essence be replaced by another essence, there is not mere change \textit{in} the individual anymore but a change \textit{into} another individual altogether (to, say, what we call an insect):

\textsuperscript{34} \textit{Short Treatise} I.1; C I, 61.

\textsuperscript{35} The most prominent controversial question is whether Spinoza’s essences are individual, i.e. unique to their possessors, or general, i.e. common to many things (see e.g. Martin 2008); however, here we can set this question aside.
[W]hen I say that someone passes from a lesser to a greater perfection, and the opposite, I do not understand that he is changed from one essence, or form, to another. For example, a horse is destroyed as much if it is changed into a man as if it is changed into an insect. (E4pr.)

Here Spinoza even talks about “essence, or form,” which intriguingly suggests that he is aware of his essences taking over a major role previously played by substantial forms.

On the basis of the two lastly mentioned points, I would argue that Spinoza’s understanding of essence is to a notable degree similar to the more traditional Aristotelian doctrines of form: for Spinozistic things, essences – the key operative ingredient of which was, for the Aristotelians, substantial form – are both centres of causal efficacy and individualizers. Spinoza does not really explicate how these two roles relate to each other; given that he designates striving (conatus), which is power (E3p6d), as the actual essence of finite things (E3p7), it can be argued that to be a thing is to be causally efficacious in a certain way. The relationship between metaphysics and physics is left considerably more unclear still.36 However, it is clear that Spinozistic essences occupy both the physical and the metaphysical domains of the territory left vacant by the demise of substantial forms.

36 In the so-called Physical Digression of the second part of the Ethics, Spinoza famously indicates that the identity of a complex body depends on a “a certain fixed manner” in which its constituents “communicate their motion to each other” (E2le3a2d), but he says nothing about how this physical notion of an individual relates to the obviously more general, i.e. metaphysical, notion of a finite thing the essence of which is striving to “persevere in its being” (E3p7). This has understandably resulted in differing interpretations; see e.g. Garber 1994, 58–63; Garrett 1994, 97.
The aforesaid strongly suggests that there is a story to be told about Spinoza’s view of causation much more profound than the familiar mechanistic one: obviously, essential causation is not about impacts of bodies (and still less about regular succession of event types). More specifically, it seems that something very much akin to formal causation is involved in determining the essence/property structure of all things – also of geometrical objects, even though no efficient (nor final and material) causality pertains to them. Indeed, it is precisely the “following” (from essences to properties) pertaining to geometrical objects that is meant to give us the right idea of necessity and intelligibility involved in causation; the late scholastic doctrines of emanation (e.g. coldness is considered to emanate from the essence of water) are incapable of revealing this. For Spinoza, in real (that is, natural) things, this “formal” structure (that is, being structured in a way that fundamentally matches the inner essence/property structure we can find in geometrical objects) is as it were converted into real (or “natural”) efficacy. Spinoza’s doctrine of essentialist causation thus involves an original coupling of formal and efficient causality, and, more generally, his anti-hylomorphist ontology is certainly novel enough for its essentialism not to be a mere rehash of old doctrines. Moreover, Spinoza’s naturalism boldly denies any distinction between natural and non-natural things, and his rationalism quite drastically diverges from the empiricism of the Aristotelians. However, the discussion above shows that in the big picture, Spinoza does share with the Peripatetics the sensitivity to certain key philosophical intuitions to the extent that he is willing, and able, to find place in his system for entities having both of the two core tasks substantial forms had in hylomorphism. This is in line with the fact that the distinction between natural philosophy and metaphysics is in Spinoza’s system, as it is in Aristotelianism, relatively difficult to draw.
4. Leibniz and the form as metaphysical force

I have argued that Descartes’s and Spinoza’s relationship to the notion of substantial form is not as clear-cut (that is, unproblematically negative) as one might be tempted to assume. Leibniz’s case is in an important sense much more straightforward; after all, he does make deliberately Aristotelianism-invoking declarations of approval of substantial form, such as the following:

[T]he mind acts and [...] matter is passive, since in every corporeal substance I conceive two primitive powers, that is the entelechy or primitive active power, [...] which is, in general terms, the substantial form of the ancients, and then the primary matter or primitive passive power which provides resistance. Thus it is properly the entelechy which acts, and the matter which is passive, but the one without the other is not a complete substance.\(^{37}\)

That the great polymath really did champion the doctrine of substantial form can hardly be doubted,\(^{38}\) but it may still be asked, how exactly did he understand that doctrine to work in the context of his metaphysics of substances? An answer aspiring to be anywhere near to complete would have to be a very long one. For the present purposes it suffices to focus on two intertwined points which bring out the

\(^{37}\) G III, 457–458; translation by Daniel Garber (in Garber 1985, 70–71). Cf. e.g.: “Substantial unity requires a complete indivisible being [...]. Such a thing could never be found in either shape or motion, [...] but only in a soul or substantial form, something like what I call myself.” (WF, 117–118.)

\(^{38}\) For informative and brief, to an important degree autobiographical summaries of how Leibniz came to the conclusion that substantial forms are not to be discarded, see Discourse on Metaphysics § 11 (AG, 43); “New System” (AG, 139).
way in which Leibniz diverges from the well-trodden Aristotelian path, summarize the view that emerges, and finally assess his relationship to the two aspects of the Renaissance scholastic notion of substantial form to better see how metaphysics and natural philosophy relate to each other within the Leibnizian framework.

We should begin by acknowledging that the all-important question is how we should understand the Leibnizian notion of force as it is presented for instance in “A Specimen of Dynamics” of 1695, for precisely that notion is given explanatory priority: “Whether we call this principle [of corporeal things] form or entelechy or force does not matter, as long as we remember that it can only be explained through the notion of forces” (AG, 125). So (substantial) form should be understood in dynamic terms; more exactly, the derivative physical forces are rooted in the primitive ones, substantial form being the primitive active force (AG, 119–120). Despite the fact that this framework contains some indisputably novel elements, it is in itself by no means non-Aristotelian in character: substantial form of the late scholastics can be seen as a primitive power from which flow powers and faculties through which natural substances cause effects on themselves and on other substances. However, Leibniz is quite critical of the Aristotelian conception of the activity of substances:

39 Cf. “Their [substantial forms’] nature consists in force[,]” (“New System”; AG, 139.) That the notion of force is preeminent for Leibniz has gained increasing attention; for a recent discussion that argues that Leibniz is to be seen first and foremost as a force ontologist, see Jorati 2018.

But inactive faculties – in short, pure powers of the Schoolmen – are also mere fictions, unknown to nature and obtainable only by abstraction. For where will one ever find in the world a faculty consisting of sheer power without performing any act? (NE II.1.2.)

The claim is thus that the late scholastic conception of powers as faculties is fundamentally misguided in allowing powers that can remain merely potential, be never exercised. Instead, substantial force is “endowed with conatus or nisus, attaining its full effect unless it is impeded by a contrary conatus” (AG, 118). Force properly understood has conatus character and can never be causally inefficacious.

Second, Leibniz makes the well-known and difficult claim that derivative forces are limitations or modifications of primitive forces, for instance in the following fashion:

And just as shape is a certain limitation or modification of passive force or extended mass, so derivative force [...] is a modification [...] of something active, that is, of a primitive entelechy. Therefore, derivative and accidental or changeable force will be a certain modification of the primitive power that is essential and that endures in each and every corporeal substance. (AG, 254.)

I would suggest that we understand this passage as follows. The way in which a modification – traditionally, a special subclass of properties – is transparent of that which it modifies (it lets the modified nature “shine through” as it were so that one cannot conceive of the modification without conceiving of

---

41 For more on this, see Myrdal 2012, 45–47; Jorati 2018.
what is being modified) is in an important sense different from the way in which the Aristotelian faculties (such as intellect, will, perception, nutrition, etc.) and accidents are grounded in their substances: those faculties and accidents do not appear to be in the same way conceived through the substantial form as such modifications as shapes are conceived through extension and derivative forces through the primitive forces of substances.42

When combined with the doctrine explained above, of substantial form as primitive active force (matter equaling primitive passive force), the result is a view according to which what we have is always (active or passive) force, albeit modified in different ways. We may call this the force–modification view of substance.43 Here the crux of the modification thesis can be explicated as follows. Since the core of force is causal efficacy – “a certain efficacy has been placed in things, a form or a force”44 –, it is quite understandable that derivative forces in virtue of which bodies act on each other by producing motion cannot but be faithful to (that is, retain the basic character of) the causally efficacious nature of substances.45 Strikingly but consistently with this, Leibniz insists that even in physical collisions, bodies move

43 As far as I can see, the force–modification view is general to the extent that it makes no difference here whether Daniel Garber (1985; 2009) is right in arguing that Leibniz endorsed the doctrine of corporeal substances during the period ranging approximately from the late 1670s to mid-1690s: from the dynamic point of view, the crucial thing is that Leibniz consistently explains his view of substance in causally efficacious terms. For more on the linkage between Leibniz’s dynamics and the intelligibility of properties as modifications, see Rutherford 1995, 241–244.
44 *On Nature Itself* (AG, 159).
45 See Jorati (2018) for the argument that derivative active forces are aspects of primitive force.
spontaneously by their own causal efficacy, namely by their innate elasticity. In this unificatory overall picture of substances as constituted by forces, reality is in itself causally active, comprising simply of intrinsically powerful entities whose active and passive aspects are modified in certain ways.

These points make it clear that Leibniz reinstates substantial forms their causal role; however, the philosophical landscape of which the force–modification view forms a major part is so dramatically different from the Aristotelian one that things simply cannot remain the same. In this new landscape, a sharp, deliberate, and innovative distinction is made between the metaphysical and physical domains; accordingly, primitive forces are certainly causally efficacious, but strictly at the metaphysical level and – unlike in Aristotelianism – by no means needed to explain natural phenomena. However, the substantial form as primitive force is the true basis of derivative forces forming the core of physical phenomena: modifications are ontologically posterior to what they modify. As a consequence, obtaining the full philosophical picture of the world is not possible, according to Leibniz, without taking the substantial form as primitive force into account even though substantial forms are to be expunged from natural philosophy.

An important corollary of the force–modification view helps us to appreciate the philosophical importance of the notion of form as force: the metaphysico-causal activity called “substantial form” is the ground of individual unity. As is well known, Leibniz argues over and over again that reality cannot be infinitely divisible but must have genuine unities as its basis. A key passage of the “New System” explains how this connects to the notion of substantial form:

46 For a helpful account of this, see Garber 2009, 201–204.
47 See e.g. AG, 42, 119, 126, 139.
[A] multitude can derive its reality only from *true unities* [...]. Therefore, in order to find these *real entities* I was forced to have recourse to a formal atom [...]. Hence, it was necessary to restore, and, as it were, rehabilitate the *substantial forms* which are in such disrepute today, but in a way that would render them intelligible [...]. I found then that their nature consists in force, and that from this follows something analogous to sensation and appetite, so that we must conceive of them on the model of the notion we have of *souls*. [...] Aristotle calls them *first entelechies*; I call them, perhaps more intelligibly, *primitive forces*, which contain not only *act* or completion of possibility, but also an original *activity*. (AG, 139.)

So giving an account of unity requires reinstating substantial forms as active forces. As Daniel Garber (2009, 115) helpfully observes about the development of Leibniz’s thought, “[t]he recognition of forces, active and passive, led Leibniz, by a different path, to the same position that he was led to by considerations of unity and individuality, to the revival of substantial form in the physical world.”48 In the passage above these two features – causality and unity – are closely intertwined, which is certainly appropriate and obviously reflects the fact that, as Garber (2009, 138) puts it, “the two approaches to substance,” namely that which focuses on unity and that which focuses on force, “are, at root, concerned with a single notion of substance.” This is undoubtedly true; but the metaphysically dense passage from the “New System” suggests something more still: by moving from unity to substantial forms and from substantial forms to primitive forces, it puts the emphasis on causal activity. The idea is thus that since the

---

48 Garber 2009, chs. 2–4 presents the full story behind these two routes to substantial form.
unifying substantial forms are constantly active forces, their causal efficacy is ontologically prior to unity. Perhaps it could be said that what makes a unified individual is being causally efficacious in a certain way: unification takes place through action. This is also strongly suggested by the slogan “to act is the mark of substances.” Moreover, this activity is needed to explain not only the synchronic identity of thing; as Leibniz argues in On Nature Itself,

persisting things cannot be produced if no force lasting through time can be imprinted on them by the divine power. Were that so, it would follow that no created substance, no soul would remain numerically the same, and thus, nothing would be conserved by God[.] (AG, 160.)

In other words, were substances not by their very nature causally efficacious forces, there would be no identity, synchronic or diachronic.

The aforesaid means that the Leibnizian substantial form has both an individualizing and a causal aspect, but in a way that does not map onto the metaphysical and physical aspects of its Peripatetic predecessor. Ultimately, all the work from causality to individual unity is done by the forces of the metaphys-

---

49 “A Specimen of Dynamics” (AG, 118). This idea, expressed in the passing already in reflections from the late 1670s as if it were self-evident, “I define substance as that which can act” (RA, 245), finds its way unscathed all the way to the beginning of the Principles of Nature and Grace: “A substance is a being capable of action.” (AG, 207.) For more on the agent as essentially operating, see Myrdal 2012, 47–48.

50 Here I agree with Jorati 2018.
ical level, discernible in an a priori manner by reason. All this allows us to draw two major conclusions concerning Leibniz’s system: first, in an apparently unprecedented fashion, it makes a clear distinction between the physical level (of natural philosophy) and the metaphysical level (of ontology); second, substantial forms retain their metaphysical role – reconceived as ontologically primitive forces – but are banished from the realm of natural philosophy. No doubt, the emergence of empiricist “sensibilism” that simply dismisses metaphysical system-building greatly contributed to the separation of natural science and philosophy; but it should be noted that Leibniz – one of the master system-builders and the philosophical starting point for the influential Wolffian school – also takes an important step on the path leading to the present-day situation by making a sharp distinction between physics and metaphysics, thereby designating to both natural science and much of theoretical philosophy what has come to be considered their proper domains.

5. Conclusion

The preceding discussion indicates that despite the fact that in the seventeenth century it was so fashionable to declare that substantial forms are absurd, occult, and nonsensical, early modern rationalism displays a steadily increasing sensitivity to philosophical issues around which the doctrines of substantial form traditionally revolved. The resulting philosophical line of development can be summed up as fol-

51 “[F]orce is among those things which are reached, not by the imagination, but by the intellect.” (On Nature Itself; AG, 159; see also AG, 125, 172, 180.)

52 For an instructive and thorough account of this, see Gaukroger 2010, esp. chs. 4–7.
lows. His hostility toward the notion of substantial form notwithstanding, Descartes ends up assigning to the soul one facet of the metaphysical role the Aristotelians assigned to the substantial form when he designates the soul as the bare identity-fixer, with no causality involved, of the human body. In spite of his anti-hylomorphism, Spinoza takes things further by giving essences both individualizing and causal roles reminiscent of those previously had by substantial forms while, however, leaving implicit much about the way in which the two roles relate to each other and being still less clear about the relationship between physics and metaphysics. Finally there is Leibniz’s view: in it, forces take up both individualizing and causal tasks, domains of natural philosophy and metaphysics are clearly distinguished from each other, and in metaphysics substantial forms are explicitly endorsed – reconceived as primitive forces in notable respects faithful to the Aristotelian idea of substantial forms as sources of causal efficacy and individual unity – even though there is no place for substantial forms in Leibnizian natural philosophy.

To conclude, it appears to hold for all of the three great rationalists that the question concerning individuality is philosophically such a pressing one that even though as progressive early modern thinkers – fully convinced of the superiority of the new mechanistic physics – they are anything but willing to accept any doctrine of substantial form as is, there is still an understandable philosophical need for something that does some notable parts of the work previously assigned to substantial forms. At the very least, one needs a theory of an identity-determiner, if the identity of things is not left a brute fact (or merely denied). In a sense, Descartes, Spinoza, and Leibniz all encountered the fact that the original motivation behind the introduction of substantial forms was anything but wholly ludicrous or irrational: regardless of how useless one finds substantial forms in natural philosophy, it is difficult to build a workable ontology without entities sharing significant features with the substantial forms of the Aristotelians.
telians. I have also argued that this is one of the reasons why philosophy and natural science came to be clearly distinguished from each other. Indeed, questions concerning the principled source of the identity of things may not fall under the purview of natural science; but with nothing playing an individuative role not unlike that of the substantial forms, questions also today considered to lie at the very heart of a branch of philosophy called metaphysics would only too readily be left simply without an answer.

Bibliography


Descartes, René. 1991. The Philosophical Writings of Descartes III. The Correspondence. Translated by John Cottingham, Robert Stoothoff, Dugald Murdoch, and Anthony Kenny. Cambridge: Cambridge University Press. = CSMK


