

Abstract: Hylomorphism is the Aristotelian theory according to which substances are composites of matter and form. If my house is a substance, then its matter would be a collection of bricks and timbers and its form something like a structure that unites those bricks and timbers into a single substance. Contemporary hylomorphists are divided on how to understand forms best, but a prominent group of theorists argue that forms are emergent powers. According to such views, when material components are arranged appropriately, a novel substance emerges with the power to impose unity on its components through time. I argue that these accounts of form fall prey to a bootstrapping problem, and so, suffer from issues of redundancy, given plausible assumptions about inherence. In their place, I suggest an ontologically minimalist conception of forms as collective manifestations of the powers of matter.

Keywords: Hylomorphism, Form, Matter, Substance, Powers, Dispositions

1. Introduction

Hylomorphism is the Aristotelian theory according to which substances—human beings, oak trees, and chemical compounds—are composed, in some sense, of matter and form.¹ If my house is a substance, then its matter would be a collection of bricks and timbers and its form something like the structure a carpenter imposes on those bricks and timbers. While hylomorphism was developed by Aristotle originally as a theory of change, many of its contemporary proponents take it to be a theory of unity or composition, an account of how, say, a house is one thing despite having numerous material parts. Hylomorphists claim that the house is

¹ While the language of composition suggests that matter and form are parts or constituents of substances, it is controversial, in both Aristotle scholarship and contemporary debates on hylomorphism, whether forms should be understood to bear a mereological relation to substances. Those who defend a mereological or constituent interpretation of Aristotle's hylomorphism include Fine (1992), Haslanger (1994), Koslicki (2006), Lewis (1991, 1995), and Loux (2005, 2006), and those who reject it include Gill (1989), Halper (1985), Kosman (2013), Scaltsas (1994), Sellars (1967), and Wedin (2000). In the contemporary literature, Fine (1999), Koons (2014, 2018), Koslicki (2008, 2018), Oderberg (2007), Stump (1995), and Toner (2013) defend mereological or constituent versions of hylomorphism, and Eynine (2016), Jaworski (2014, 2016), Johnston (2006), Marmodoro (2013), Rea (2011), and Shields (2019) defend non-mereological versions. For a recent argument against mereological approaches to form, see Renz (forthcoming).

one thing, even though it has many parts, because of the presence of an appropriate form. So, forms unify disparate material parts into a single substance.

While few hylomorphists would quibble with this bromidic description of the theory, it smooths over a controversial issue: that of figuring out *what*, exactly, forms are. While the example of a house suggests that forms are structures or polyadic relations, many hylomorphists are not content with such an everyday conception of form. Substances are thought to have a single form, but often instantiate numerous structures (Oderberg 2014). Mereologically simple substances might have forms, but since they lack parts, there's no way they could be structured (Renz 2018). And structures fail to capture the dynamism characteristic of substances, especially living organisms (Skrzypek 2017, 2021, forthcoming).²

To avoid these and other issues, a growing number of hylomorphists claim that forms are best conceived as *powers* or *dispositions*. Roughly, hylomorphists of this stripe claim that forms are understood best as special unifying powers (or manifestations of those powers) possessed of substances to impose unity, top-down, on their parts. In this paper, I argue that this strain of hylomorphism can't be quite right, at least if we understand forms primarily as unifiers. More specifically, if forms are powers, and powers are inherent entities, then they require a unified subject to inhere in. But forms *themselves* are supposed to get us unified subjects in the first place. So, for forms to do any unifying work they require the unity of the very subject that they're meant to explain. Because of this bootstrapping problem, positing forms as emergent powers is redundant, unnecessary in an explanation of the unity of substances.³

I first lay out some preliminary points about the nature of inherence. Then I consider the view of one prominent defender of the emergent powers view, William Jaworski, and show it is subject to my bootstrapping argument. Next, I consider a similar view developed by Anna Marmodoro, which posits only powers, and not substances. I argue that Marmodoro's view, despite lacking substances, and so, an inherence

² For further discussion and criticism of structural hylomorphism, see Evnine (2016: ch. 2), Koons (2014), and Rooney (2022: ch. 2).

³ My argument is focused on those who claim that forms are powers of emergent substances, but it applies to any hylomorphist who takes forms to be properties, qualities, features, or aspects of emergent individuals or substances, whether dispositional or not.

relation, is nonetheless subject to my argument, or else fails to identify forms with powers. I close with a proposal for a different understanding of forms, based on powers, informed by the lessons of my critical argument.

2. Inherence

My argument relies on two points about inherence. First, forms are entities that exist in subjects; forms are inherent entities.⁴ This means that *for a form to exist, there must exist a subject for it to exist in*.⁵ Just as we don't find the color yellow milling about the world on its own, but always *in* lemons, bananas, and post-it notes, we don't find forms out on their own. Since this is uncontroversial among hylomorphists, I won't defend this point here.

My second point: the lemon is yellow, the banana is yellow, and the post-it note are yellow, but, plausibly, they are not all yellow in virtue of one instance of inherence. Whether the color yellow is a multiply-located universal, an archetype in platonic heaven, or a particularized mode or trope, what explains the lemon, banana, and post-it note all being yellow are three *distinct* instances of inherence. Why? Because *inherence is most plausibly a one-to-one relationship*, a relationship between *a* subject and *a* property (Heil 2012: 18-23).⁶

This second point about inherence is an intuitive one, and so, hard to present a tidy argument for. But we can appreciate it by trying, and failing, to develop a case against it. On a table sits a lemon, banana, and post-it note. Each is yellow and it is plausible to say that their collection is yellow. But we can explain the

⁴ Hylomorphists often distinguish between predication and inherence. Forms are predicated of portions of matter, while regular, mundane properties, so-called accidental forms, inhere in substances. So, when a predication obtains, the result is a substance, while inherence obtaining makes for an accidental unity, or a propertied substance. For my purposes here, this distinction makes no difference; for Jaworski and Marmodoro, forms are powers, and powers are not predicated of matter, they inhere in subjects. My point is just to highlight that forms are the sorts of entities that exist in subjects. For further discussion of the distinction in Aristotle, see Lewis (1991) and Loux (1991). For discussion of the distinction in Aquinas, see Brower (2014).

⁵ Some hylomorphists, for example, Thomists such as Jeffrey Brower and Eleonore Stump, may object, claiming that some forms, namely, human souls, can exist independently of a subject. I register this point here but pay it little attention: (1) these authors deny that it is *natural* for a human soul to exist apart from matter, and (2) a human soul existing apart from matter is a limit, not primary, case.

⁶ Some deny this, arguing that inherence may be, in some cases, a many-one relationship. For example, Caves (2018) and Cornell (2017) argue that certain pluralities may serve as subjects for the inherence of properties. However, these authors are motivated by a desire to countenance emergent, or non-redundant, properties within a metaphysics of mereological nihilism. Given that hylomorphists are squarely at odds with mereological nihilism, I see little reason why they would be open to these arguments.

yellowness of the collection in one of two ways: (a) the collection is yellow just in the sense that in each of its members inheres the color yellow, or (b) the collection *itself* is yellow, the color yellow inheres in *it*. Two considerations speak in favor of (a).

First, we can explain the yellowness of the collection in a bottom-up fashion by appeal to the individual yellownesses of the lemon, banana, and post-it note. The members of the collection are yellow individually and as a result their sum, the collection, is yellow. Considerations of parsimony speak against positing an additional yellowness of the collection, and so, treating the collection as a subject of inherence itself. Second, the collection seems only to have properties identical with the properties of its parts or redundant properties. For example, the collection is yellow, just as its parts are, and the mass of the collection just is the mass of its parts summed. So, there seems little reason to posit the collection itself as a unique bearer of properties.

So, (1) for inherent entities to exist, they must exist in a subject, and (2) inherence is a one-to-one relationship, one that holds between properties and sufficiently unified subjects.⁷

3. Jaworski's Hylomorphism

William Jaworski (2014, 2016, 2019) has advanced hylomorphism as a wholesale metaphysics ready to answer questions about composition, identity over time, various mind-body problems, and more. According to Jaworski, substances such as human beings are composed of various material components and an emergent structuring power, or form.

For Jaworski, following Heil, Martin, and others, there are substances and particular, or trope-like, powers.⁸ A power is a property that is primitively directed at some type of manifestation, one that can bring

⁷ Note that this second point is wholly compatible with the view that we can and do truthfully predicate things of collections and entities that aren't sufficiently unified. It is true that 'the collection is yellow,' but what makes this predication true are the individual, one-to-one instances of inherence that hold between the lemon, banana and post-it note and the color yellow. So, truths and their truthmakers might not be 'ontologically isomorphic.' See Heil (2003: ch. 3).

⁸ More specifically, Jaworski (2016: ch. 4) endorses a powerful-quality view of properties of the sort developed by Heil (2003, 2012), Heil and Martin (1999), Jacobs (2011), and Martin (2007). On such views, a property has both a qualitative side or aspect and a dispositional side or aspect. For instance, a banana is yellow, and so, being yellow is a quality of the

about that manifestation should certain conditions obtain (2016: 93-98). For example, sugar has the power to dissolve in hot coffee: should I place a lump of sugar in my coffee, the sugar will engage in the activity of dissolving. Of course, sugar needn't ever actually dissolve, but dissolving is a type of manifestation that the sugar is ready to engage in. Similarly, forms are powers that are directed at unifying various material components. For example, the form of a human being is directed at unifying various organic bits into a well-functioning, complex organismal system. What sets forms apart from other powers, however, is that forms manifest of necessity. That is, when the form of a human being exists, it doesn't sit dormant as does the sugar's power of solubility. Rather, when a form exists, it continuously manifests, ensuring the survival of the entity whose form it is. As Jaworski says (2019: 10):

[F]orms are best understood as powers and manifestations of powers—that is, powers and activities. Composite individuals [substances] are essentially and continuously engaged in forming (organizing, configuring—call it what you like) the materials that compose them. What sets forms apart from other powers and activities is that composite individuals are essentially and continuously engaged in manifesting them. A quantity of table salt needn't manifest its power to be dissolved; it needn't ever engage in the activity of dissolving. A composite individual, by contrast, cannot fail to manifest its power to configure the materials composing it lest it cease to be altogether.

Jaworski also understands forms, and the substances that they structure, to be emergent entities. That is, he takes it that forms are novel, non-redundant entities that come to exist over and above the material components they unify. To quote him (2016: 104) again at length:

Structured individuals [or substances] are *emergent* individuals on the hylomorphic view. There are empirically describable conditions that are sufficient to bring into existence new structured individuals with distinctive powers where previously no individuals with those powers existed.

Principal among the powers of such individuals are powers to configure materials—powers that

banana, a way that it is, and, moreover, the banana's yellowness enables it to behave in various ways, e.g., to appear yellow to observers.

structured individuals are essentially and continuously manifesting. A structured individual comes into existence exactly when its activity of configuring materials commences, and the materials it configures are precisely those that compose it. Structured individuals are thus emergent individuals who are essentially engaged in the activity of configuring the materials that compose it. (emphasis original)

So, for Jaworski, forms are necessarily manifesting powers, and substances are emergent individuals engaged essentially in the activity of structuring their material components.

4. The Redundancy of Formal Powers

According to Jaworski, a substance is one thing because it possesses a form, a power whose manifestation is the structuring of various material components. But when we keep in mind the two points about inherence above, Jaworski's account of forms and so composition runs into trouble.

Consider some material parts that, when suitably structured, result in a unified substance, for example, a free proton and a free electron. For a form to unite the proton and electron into a whole, an atom of hydrogen, the form must exist. Non-existent forms cannot do or explain anything at all. Our first point about inherence prohibits free-floating or subjectless forms, so, there must exist some subject for the form of the hydrogen atom to exist in. Moreover, our second point has it that the subject the form inheres in must be sufficiently unified, as inherence is a one-to-one relationship.⁹

Since the proton and electron, pre-unification, are not sufficiently unified, the form cannot exist in them; taken together, they're just a collection or heap of material parts. It is implausible that the form of the

⁹ You might think that Jaworski, inasmuch as he takes properties to be particulars, is not committed to anything like an inherence relation. Inherence, the thought goes, is something the realist must countenance to explain how universals are tied to particular subjects. Because of this, perhaps Jaworski's view isn't bound by my two points about inherence. In response, I just don't see how this could be so, given Jaworski is committed to a two-category ontology. If there are substances and properties, whether those properties are universals or particulars, there must be some account of how properties are borne by substances, some account, whether it posits a genuine relation or not, of the relationship between properties and property-bearers. While Jaworski (2016: 47) appears silent on this issue, he seems comfortable with an account of the relation between substances and properties called *characterization*, propounded by E.J. Lowe (2006: ch. 3). Thanks to an anonymous reviewer for bringing this objection to my attention.

hydrogen atom exists in either the proton or electron pre-unification, as the existence of a form includes its necessary and continuous manifestation, and neither the proton nor electron, on their own, are hydrogen or exhibit signs of hydrogen-ness. For the same reason, it is implausible to suggest the form exists in some third-party subject beyond the proton and electron.

So, in what subject does the form exist? An obvious answer is that the form exists in the hydrogen atom. But here is the trouble: for the hydrogen atom to serve as the subject for its form, the hydrogen atom must exist, and for it to exist is for it to be sufficiently unified. But uniting the proton and electron into an atom of hydrogen is the very job of form. So, should the proton and electron be sufficiently unified such that the form of hydrogen can inhere in them, it looks like something besides form explains the unity of the hydrogen atom. In other words, we've got a bootstrapping problem: for the form to 'get on scene' to do its unifying work, it requires the very unity it is marshalled to explain. And if Jaworski's forms don't do the unifying work he claims they do, something else does, and so, positing forms as unifying powers is unnecessary, redundant.

You might think that I'm getting Jaworski all wrong. He claims that substances *and* their forms emerge *concomitantly*. He says, in the second quote above, "There are empirically describable conditions that are sufficient to bring into existence new structured individuals with distinctive powers where previously no individuals with those powers existed. Principal among the powers of such individuals are powers to configure materials—powers that structured individuals are essentially and continuously manifesting." So, substances and their forms emerge at the same time. But my argument seems to suggest that forms need to exist prior to the substances whose unity they explain. Does the temporal concomitancy of substance and form obviate my argument?

No. Forms are either temporally prior, concomitant, or posterior to the substances whose unity they explain. If they're prior, we need to find a unified subject for form to inhere in and no decent contender besides the unified substance itself appears available. If they're posterior, then it looks like substances are unified prior to the existence of the forms that are meant to explain such unity. But, even if substance and

form are temporally concomitant, we have trouble. This is because forms are inherent entities, and so, are *ontologically dependent* on the subjects they inhere in.¹⁰ Even if a substance and its form emerge at the same moment, the existence of the form depends on the existence of the substance; the form *exists in* the unified substance. Given that the substance cannot exist as a subject for the form without being sufficiently unified, and form is meant to explain the unity of substance, then, once more, form appears redundant in explaining substantial unity. A property of a substance—whether or not it is a power, whether it is universal or particular, whether it is possessed accidentally or essentially—cannot unify that very substance.

You might still be shaking your head. My discussion so far seems to assume that forms are agents in some sense, entities in the world pushing and pulling on material components so as to transform them into a novel and unified substance. But, you might think, forms just aren't supposed to be like this. Forms are entities (or principles) whose presence provides the means for an explanation, but are not entities that do real causal work. In other words, you might think I've confused and run together problematically *formal* causation with *efficient* or *agent* causation. I'm thinking forms as if they were foremen on a construction site, powers whose job it is to unite material components. But, instead, they are conceived by Jaworski and other hylomorphists merely as entities or principles that factor into an explanation as to why some material components compose or constitute some distinct and unified substance. Jaworski (2019: 17) himself appears to caution us in thinking about forms this way, "...forms are not agents. Forms are not individuals at all; they are instead what I have called explanatory *factors*." If this is right, then my criticism of Jaworski is just off. I'm criticizing his account of form from a perspective that he does not share.¹¹

Two points in response. First, inasmuch as Jaworski claims that forms are powers or manifestations of powers, it is unclear that he can deny that forms do efficient or agent causal work. For Aristotelians like Jaworski, powers are the engine of efficient or agent causation; in virtue of their powers, substances push and pull in the world. If the coffee has a power to dissolve the sugar, then the coffee is doing the efficient or agent causal work in dissolving the sugar. The coffee's power to dissolve the sugar is not a mere principle or

¹⁰ The ontological dependence of forms on substance is widely discussed, but see Corkum (2008) for discussion.

¹¹ Many thanks to two anonymous reviewers for bringing this important objection to my attention.

explanatory factor in the sugar's dissolution; it is a causal agent in the dissolution of the sugar. So, while Jaworski and certain other hylomorphists might claim that forms are mere explanatory principles or factors, and not agents, it is unclear how they can do so while identifying forms with powers or manifestations of powers.

Second, if we take it that forms, on Jaworski's view, are mere explanatory principles or factors, then it is unclear whether we need to posit them. That is, even if unifying powers possessed of emergent substances aren't supposed to play an efficient or agent causal role, then they seem redundant nonetheless. Suppose a physicist is producing hydrogen. They are the agent or efficient cause of the unity of the hydrogen, they are what's pushing and pulling in the world so as to unify the proton and electron. On the current objection, the proton captures the electron and a novel substance emerges, the hydrogen, which possesses a power to structure or unify the proton and electron. By my lights, positing this unifying power or form is needless: the physicist put the proton and electron in conditions such that the former would capture the latter, presumably because the proton has the power to capture the electron, and the electron has a corresponding power to be captured by the proton. So, the synchronic unity of the hydrogen is explained by the powers of the material components of the hydrogen. But why then suppose that the hydrogen, an emergent substance, needs a special unifying power to keep itself in existence at or through time? If the powers of the material components can get us synchronic unity, or the initial unity of the hydrogen, why can they not secure us diachronic unity as well? In other words, it just isn't clear why we ought to posit forms as emergent unifying powers if forms aren't meant to play an *efficient or agent causal* role.

5. Marmodoro's One-Category Powers Hylomorphism

My argument, so far, can be summed up thus: if forms are powers or manifestations, and powers or manifestations depend for their existence on a unified subject, then forms don't really explain the unity of substances. Since Jaworski has both substances and properties, a two-category ontology, he must have something like an inherence relation, some account of how properties are borne by substances. This is, I have argued, where trouble creeps in. But what if we could do away inherence? What if hylomorphists of

Jaworski's stripe posited just, say, powers and collections thereof? Without the troubles of inherence and the substance-property dichotomy, could we maintain that forms are emergent powers?

Anna Marmodoro (2017, 2018; see also 2013) has advanced a one-category ontology that deals in the currency of powerful tropes only. That is, she takes it that what exists, fundamentally, are particular instances of powers (and their manifestations). Her view is also hylomorphic, in that she takes substances (for her, powers) to be composed, in some sense, of matter and form.

According to Marmodoro, there are *structural powers* and *substantial powers*. Structural powers are not, strictly speaking, powers, but, rather, are structured collections of individual powers (2017: 118-121). For example, a house has various individual powers—mass, load tolerance, roof pitch—but it is not a haphazard collection of these powers. A house is an interconnected structure of these powers, where this structure captures various ontological dependencies (2017: 119). Substantial powers, on the other hand, are powers, and are constituted by and emerge from structural powers. For Marmodoro, when a substantial power emerges, a merely *physically united* structural power is transformed into a *metaphysically unified* whole. To quote Marmodoro at length:

The physical structure of the electron's powers *constitutes* the electron, but *is not* the electron. The electron is an activity, [...] an instance of the power of an electron. This is a single emergent power, constituted of a physical structure of powers—mass, spin, charge, space-time—which are holistically composed into one emergent entity, the electron, under the individuation principle of the sortal “electron.” I call the structure of powers constituting an emergent entity a *structural power*; the electron is constituted of a structural power—the structure of mass, spin, charge, space-time [...] The single power of an electron emerges from the unification of the physical structure of powers into a single individual; I call the emergent power of an electron a *substantial power*. This is constituted of a structure of powers of the electron, which are re-individuated as qualifications of a subject according to the principle of the sortal “electron.” (2017: 121-122; emphases original)

So, on Marmodoro's view, the individual powers in a structural power are akin to matter, structural powers are something like form, and substantial powers are what the two-category ontologist would call substances. And the shift from a merely physically united structural power to a truly unified substantial power, claims Marmodoro, is accomplished by stripping the individual powers of a structural power of their identity, transforming them into mere qualifications, or properties, of the new whole. So, while Marmodoro does seem to identify forms with powers—structural powers—one difference between her view and Jaworski's is that, according to her, forms are not *emergent* powers, substances are.

That said, does Marmodoro's view, without the substance-power dichotomy, avoid the bootstrapping problem I claim afflicts Jaworski? By my lights, she avoids the issue only to the extent that she abandons the idea that forms are powers of some sort.

First, notice that Marmodoro takes structural powers to play the role of forms, but *denies* that they are powers. She writes:

Merely physically united powers are a plurality of many, just like the grains of sand on a beach. (2017: 118)

A physical structure is a plurality of interrelated powers. (2017: 119)

A physical structure (of powers) is not a power. A physical structure (of powers) consists of ontological dependencies between powers [...] Although a structure of powers is not a power, it is powerful, on account of the powers that make it up. (2017: 119)

I call the structure of powers constituting an emergent entity a *structural power* [...] In itself, the structural power of the electron is a structure of powers; it is a whole of many powers. Is it a power? Strictly, no; it is many powers; a powerful whole of many powers; it is literally plural powerfulness. (2017: 121)

Given these remarks, it is hard to see how a structural power could *be* a power. And for Marmodoro, powers are all that exist. So, first, it is unclear how Marmodoro could genuinely posit structural powers, given her

commitment to a one-category ontology of powers. She claims that structure or “relatedness” arises from the directionality of powers; structure arises in a world of just powers because powers themselves are structured, or point beyond themselves (2017: 119). But it is unclear how a power being directed, being ready to bring about a manifestation, implies that a one-category ontology of powers can admit of non-powers. A power having structure doesn’t imply that there is structure beyond powers.

But set this worry aside. Suppose that there are such things as structural powers, but that they are not, strictly speaking, powers. If a structural power is not a power, then, plausibly, it is a structure or relation, the arrangement of individual powers that leads to and allows for the emergence of a substantial power. For, the only difference between a collection of individual powers and a structural power composed of powers is the structure or arrangement of the latter. On this view, should you have the right individual powers structured in the right way, a novel power, a substantial power, emerges. What, you might wonder, is wrong with this? In short, nothing, but it abandons the conception of forms as powers. On this view, the structure or arrangement of individual powers is what appears to do the work of form, not a power. There is no power whose job it is to transform a plurality of individual powers into a single substantial power. There are just individual powers that, when mingled in the right way, allow for a novel substantial power to emerge. This certainly appears to be a kind of hylomorphism, but not one that takes forms to be powers.

But perhaps the foregoing discussion has been wrongheaded and confused; perhaps structural powers are indeed powers. Now, for a structural power to unite individual powers so that a substantial power can emerge, the structural power must exist. Since we needn’t find a bearer for the structural property in Marmodoro’s one-category ontology, it can exist alongside the individual powers to be united into a substantial power. So, the structural power might be conceived as something like a special ingredient that, when incorporated with other powers, turns them into a truly unified substantial power. But the issue here is a familiar one. If forms are parts or ingredients of substances in the same way that matter is supposed to be,

then we need an account of what unites the matter with form, and so on. This is just Aristotle's famous regress argument in *Metaphysics* Z.17.¹²

Now, Marmodoro does seem comfortable with substantial powers bearing other powers. As she says, the individual powers in a structural power are transformed and reidentified by a substantial power, and are borne by it as qualifications. And if what the two-category ontologist takes to be a substance has powers, and Marmodoro identifies substances with powers, viz., substantial powers, it seems to follow that substantial powers could have powers of their own. So maybe structural powers are borne by substantial powers, perhaps structural powers are powers of substantial powers? Here, though, we run into the original bootstrapping problem. If forms get us unified subjects, but forms are properties or powers of those very unified subjects, then Marmodoro must presuppose the very unity that her forms are meant to explain. So, even without a two-category ontology, and so, an inherence relation, it seems hylomorphists who conceive of forms as powers run into trouble.

6. A Different Way Forward

So far, I have argued that hylomorphists who take forms to be powers run into trouble. More specifically, whether forms are inherent entities or not, for them to get on scene presupposes the unity that they are meant to explain. I haven't argued that hylomorphism, in general, is misguided, that no account of forms can accomplish what its proponents think it can (see Fiocco 2019). To put my worry in the most general terms, I think that making forms powers, properties, features, or qualities *of the substances whose unity they're meant to explain* is wrongheaded.

However, I do think Jaworski and Marmodoro are right to connect forms with powers, rather than with special, non-material, structural parts or constituents, as other hylomorphists have (e.g., Fine 1999;

¹² To be clear, I am *not* attributing this view to Marmodoro; my discussion here is just a fleshing out of the ways one could interpret her view. Marmodoro is clear, in other places, e.g., her (2013), that she does not conceive of forms as special parts of substances.

Koslicki 2008, 2018).¹³ I just think they've connected forms with the wrong powers, and, well, missed how many powers might go into a form.

Plausibly, a proton and electron have corresponding powers to unite. The proton is positively charged, the electron is negatively charged, and when the two are mingled, in the right circumstances, they exercise these powers and unite, resulting in the generation of an **electron**. It would be hard to deny this: if the proton and electron lacked these powers, it would be a mystery as to why, how, they do in fact unite. Now, if they possess corresponding powers to unite, then the manifestation of those powers just is the union of the proton and electron, the atom of hydrogen. For, the manifestation of a power to *unite* just is a *unity*. So far, what seems to explain the unity of the new substance, the hydrogen, is the manifesting of certain powers of matter.

Here is, in my view, a plausible account of form—although one I can only introduce, not thoroughly defend, here. A form is the *collective manifestation of the powers of matter to unite*. A substance, then, just is a collection of material components actively manifesting their powers to unite.¹⁴ Since the individual powers of matter are possessed, let's assume, given the hydrogen atom case, by mereologically simple substances, there is no worry about finding unified subjects for them to exist in. For, the proton and electron are unified primitively, inasmuch as they lack material components. And since forms are not possessed by the mereologically complex substances whose unity they're meant to explain, there is no worry about the substance being unified prior to form's arrival. So, forms don't suffer from a bootstrapping issue or explanatory redundancy because they are not powers, manifestations, properties, qualities, or what have you, that are possessed by the unified subjects whose unity we're attempting to explain.

¹³ See also Johnston (2006), although he denies forms bear a mereological relation to the substances

¹⁴ To be clear, I do not think that the material components of substances possess special uniting powers. Rather, material components have powers, like charge, that enable them to unite. Following Heil (2003, 2012), I take powers to be multi-track: one and the same powers can bring about different types of manifestations, given that power is stimulated differently, or mingled with different powers. For instance, a ball is round, and in virtue of this power, the ball can (1) roll when placed on an incline, (2) appear round to an observer, and (3) leave a circular impression on a pillow. So, the proton is positively-charged, and this enables it to repel other protons, but it also enables it to capture and so unite with an electron. What powers account for the unity of substances, then, will be an empirical project.

A few things to note about this proposal. First, I'm not the first to suggest that forms could or should be conceived as collective manifestations, processes, or activities of matter. Jeremy Skrzypek (2021, forthcoming) has developed a view according to which forms are *processes* which collections of matter undergo or are engaged in. And Christopher Austin (2020) suggests that forms are *activities*, where the form F is just some matter being an F, engaging in the activity of F. However, I take it that a process or activity just is a manifestation of powers through time, and so, think cashing out this sort of view is done best, most perspicuously, in terms of powers and their manifestations.¹⁵

Second, my view is compatible with—but doesn't require—certain aspects of Jaworski and Marmodoro's views. For instance, both Robert Koons (2014) and Michael Rea (2011) have defended versions of hylomorphism that could be described as hybrids of my view and the views of Jaworski and Marmodoro. For Koons, the collective manifestation of the powers of matter sustains an emergent individual in existence, but that emergent individual exerts downward causal control over matter.¹⁶ For him, different types of ontological dependencies run back and forth between matter and an emergent substance, ensuring substances—like human persons—are causally relevant but not existentially detached from matter. Rea (2011: 349) hints at the idea that collective manifestations of matter could be forms, but also suggests that they may bring about emergent entities who play certain other roles traditionally associated with forms. This is all to say that one *could* take forms to be collective manifestations of the powers of matter to unite but also, say, posit emergent individuals and powers.

Third, on my view, forms are built into the matter of an object. The form of the hydrogen atom is the manifestation of certain powers of the proton and electron, powers possessed, and so, built into, the proton and electron. The form is not some entity, be it a power of the hydrogen or anything else, that could be conceived as an extra ingredient in the hydrogen alongside its material components—it is just the manifestation of the powers of matter, an activity, process, or happening that the matter is engaging in. Because of this, forms are, on my view, resultant entities. After all, the manifestation of powers is posterior,

¹⁵ We might follow Heil (2012: ch. 6) and call forms, the manifestations of powers, 'happenings.'

¹⁶ However, Koons seems to have changed his account of forms. See his (2018).

ontologically and temporally, to the powers it is the manifestation of. So, my view is hylomorphic inasmuch as it posits a formal *aspect* of objects, but not inasmuch as it takes objects to possess some single, special formal component, power, or principle that unifies matter.

However, even if you think my case against Jaworski and Marmodoro is right, you might think my account just isn't an adequate fill-in. On the view I've just briefly proposed, a substance is a collection of material components engaged in a certain kind of collective manifestation of powers. This seems to make mereologically complex substances into second-rate ontological citizens. What is there, one might ask, to an atom of hydrogen, cell, or human being if all they are is a big swarm of simple material components collectively manifesting certain powers? Is the substance genuinely a substance, or is it some epiphenomenal by-product?

I think a proponent of my view can make some sense of the reality of mereologically complex substances and not fall into a stark reductionist picture; it just involves a reimagining of what higher-level entities, mereologically complex substances, are. If a mereologically complex substance—an atom of hydrogen, cell, or human being—is a collection of material components engaged in a large-scale power-manifestation, and not an emergent entity possessing unique powers of its own, it doesn't follow that mereologically complex substances are unreal.¹⁷ It's just that the nature of mereologically complex substances turns out to be different than what some hylomorphists thought. Even if the hydrogen isn't an emergent individual, or metaphysically unified in Marmodoro's sense, it isn't just a conjunctive mess of a proton and electron, but a proton and electron engaged in a particular sort of manifestation of powers. In more traditional terms, the hydrogen is an *actuality* of a sort that a mere heap of a proton and electron is not. A mere heap is potentially one, unified, but a collection of material components actualizing their powers to unite is, well, actually united. While such an actuality isn't so unified to bear properties of its own, it is causally

¹⁷ See Heil (2003) for a strategy for making representations of mereologically complex objects truth-apt and meaningful without taking them to be full-blown, fundamental substances.

relevant in the sense that its parts, in tandem, can do what those same parts alone, or in a merely conjunctive union cannot.

There are two ways to flesh this last point out, that is, explain how a substance without non-redundant powers of its own may nonetheless be causally relevant. First, we can think of the seemingly novel powers of substances as weakly-emergent, system-level capacities. This would be, following Heil (2012: 23-26), to ascribe powers *by-courtesy* to substances. For instance, the material components of a ball cannot roll, but, should those components manifest certain powers to unite, the unity which they compose can roll. The power to roll here is novel, but it is not a sparse, fundamental power possessed of an emergent individual. Rather, rolling is merely something that the whole, conceived as a system of many material components, can do.¹⁸

Second, one could conceive of the seemingly novel powers of substances as newly unlocked powers possessed of its parts. The idea is that what appear to be powers of a whole are really just powers of its parts, but powers those parts may manifest only when in the presence of other parts (see Martin 2007: chs. 3-4). For instance, hydrogen can be used as fuel, but we cannot load our cars full of protons or electrons and expect them to run. Here, the idea would be that the power to be used as fuel is really a power of, say, protons, but one protons may manifest only when antecedently manifesting their powers of charge with electrons. So, once more, we can appreciate that substances possess seemingly novel powers, but do so without positing substances as emergent wholes with a host of sparse powers of their own.

So, to be clear, the account of substance a view like mine can deliver is not as robust as those provided by Jaworski and Marmodoro. However, given that my view avoids the problems besetting their views, I think my account is worth taking seriously. Once more, it just involves hylomorphists reconceiving of what substances truly are. Moreover, I think the machinery of emergence and downward causation involved in the accounts of Jaworski and Marmodoro is fairly controversial and burdensome, and so likely dissuades theorists from even considering a hylomorphic view of objects (Austin 2020). So, my view can be seen as

¹⁸ See also Koslicki (2018: 208-215).

something of a hylomorphism-light; a way to be a hylomorphist of sorts without the heavy-duty notions of emergence and downward causation.

At this point, let me consider two lurking objections. First, notice that, on my account, what explains the unity of a substance is not itself unified. What explains the unity of an atom of hydrogen are powers possessed of its parts, not some unified unifier. But, traditionally, hylomorphists take it that forms must themselves be unified (Oderberg 2011: 95-96). For, if forms were not unified, then we'd need an account of what unifies *them*, and so on, and we've got a regress.¹⁹ Relatedly, Robert Koons (2018: 8) argues that a view like mine, where unity bubbles up, in a way, requires a problematic sort of pre-established harmony:

Why can't unity come about or emerge as a result of the unified *cooperation* of the many parts? To take a simple example, why couldn't there be two simple things *A* and *B*, such that *A* has the natural power to unify under certain circumstances with *B*, and *B* has the complementary natural power to unify in those same circumstances with *A*? In this picture, there doesn't have to be a single unifier [or form]: instead, the many unified things are themselves mutual unifiers. However, this would require a very improbable and ad hoc pre-established harmony among the powers of the many mutually unifying parts—a coordinated distribution of mutually exercisable powers. This problem ramifies as the number of components to be unified increases. It becomes quite untenable when billions of components must unite with each other. (emphases original)

In response to the worry of a regress, a few points. First, the unity of substances on my account is less robust than traditional hylomorphic accounts of unity. Perhaps traditional accounts require a unified unifying form, but perhaps mine does not, inasmuch as it does not deliver a traditional, robust account of unity. Second, it seems that there is no in-principle reason to deny that forms, or unifiers, can be complex, or that they may be less unified than the unity they bring about. Kathrin Koslicki (2008: 195-196) imagines an example of a volatile glue that can bond two pieces of wood together. Here, the idea is that what unifies some components is less unified than the unity it brings about: the glue has parts and is unstable, but may nonetheless unify the

¹⁹ Thanks to an anonymous reviewer for bringing this objection to my attention.

pieces of wood. Lastly, on my view, since forms are resultant, it is unclear whether they need to be unified. On my view, forms are not entities that impose unity of matter; rather, objects have *formal aspects* inasmuch as their material components are engaged in a particular sort of manifestation. So, since forms are not entities distinct from matter that impose unity on matter, on my account, it is unclear my view is liable to a regress.

Regarding Koons's worry about a pre-established harmony, I have two responses. First, just as a trope theorist explains similarity by appealing to numerically distinct, exactly similar tropes, rather than some single, shared universal, I appeal to powers of material components to explain unity instead of some single unifying form. So, just as we needn't make sense of similarity by appealing to one and the same thing, a universal, we needn't make sense of unity by appealing to one, unified thing. Second, it is no mystery that certain material components can unite. The proton has positive charge, which is, in part, a power to capture objects with negative charge, and the electron has negative charge, which is, in part, a power to be captured by objects with positive charge. It just is part of what it is to be these powers to behave as they do, to unite. So, it is no mystery as to why unity might be achieved through a cooperation of material components, or, at least, it is no more of a mystery than why objects have the properties and so powers they do.

Second, if a substance is just a collection of material components collectively manifesting certain powers, you might wonder whether my view has the resources to restrict composition.²⁰ Does any collective manifestation of powers result in a substance? When I set my computer on a desk, does the manifestation of the powers of the two result in a new substance, the desk-computer? If so, it is unclear my view captures enough of what hylomorphists want captured so as to be taken as a viable alternative to, say, the views of Jaworski and Marmodoro, views that can restrict composition in a principled way.

From an ontological point of view, my account doesn't distinguish between substances and desk-computers, trout-turkey's, and the rest. As I see it, there is no principled way to distinguish a privileged set of powers whose manifestation leads to the generation of a novel substance from those that do not. There's nothing different, metaphysically, between the manifestation of the powers of charge possessed of the proton

²⁰ Thanks to two anonymous reviewers for pushing me to consider this objection.

and electron and the manifestation of the powers of mass possessed of my computer and a desk. Of course, the former leads to **seemingly** novel powers and the latter doesn't, and the former is longer-lived, or more stable, than the latter. And this is exactly why we usually countenance things like atoms of hydrogen but not desk-computers. But both are collective manifestations of the powers of material components.

That said, I don't envision my view as trying to restrict composition, as an answer to the special composition question. My view is an account of what it is that explains the unity of a substance, whether or not substances enjoy a special kind of unity. On my view, all we need are certain powers possessed of the material components of a substance. But this doesn't mean that my view isn't hylomorphic. As I see it, my project is one that seeks to provide an account of the *truthmakers* for hylomorphism and hylomorphic truths, but does so without an appeal to special formal components or problematic emergent powers. So, the view I've just briefly sketched here is not so much an alternative to the views of Jaworski and Marmodoro, but rather an invitation to conceive of the hylomorphic project differently. Of course, my criticism of Jaworski and Marmodoro doesn't mean we should *abandon* a more traditional conception of hylomorphism, a conception that seeks principled ways to restrict composition. But it suggests at least that a reconceptualization of hylomorphism is worth thinking about and taking seriously.

7. Conclusion

I have argued that hylomorphists who identify forms with unifying powers possessed of emergent substances face a bootstrapping problem that leads to issues of redundancy. In their place, I've gestured to an account of form, based on powers, that avoids these problems. While the admittedly brief sketch of my view isn't likely to convince skeptics, I think it is plausible enough, especially given the trouble for the emergent powers approach to form, for hylomorphists to take seriously.²¹

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²¹ [Acknowledgements omitted]

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