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When is a Concrete Property Basic?

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ABSTRACT *We more or less understand how composition works in the case of objects. We cement bricks together to build a wall. We stir together red paint and yellow paint to get orange paint. In both cases, one way or another, $A = B + C$. This paper examines composition in the case of concrete natural properties. It explains why property composition is so much less straightforward than object composition. Then it distinguishes strictly basic properties (like the mass of an electron), compositely basic properties (like the mass of a planet), and fully non-basic properties (like the saltiness of blood). It shows how strictly basic properties compose, or result in, compositely basic and fully non-basic properties, which differ from, yet depend for their natures on, the strictly basic properties they result from. It explains the characteristics and differences of these types of properties. It notes that the existence of compositely basic and non-basic properties grounds an argument for the genuine existence of composite properties as well as the composite objects they characterize. Finally, it defends the usefulness of these distinctions by identifying projects they assist, and by applying them both to mark off distinct metaphysical views too often conflated and to correct sundry metaphysical mistakes.*

I.

Our world has basic objects like electrons and non-basic objects like telephone poles. Telephone poles are non-basic because they consist of objects more basic than themselves. Electrons are basic because nothing more basic composes them.¹ Composition works simply here; and philosophers understand it well enough. Nature builds the way a mason cements bricks together. Or nature mixes the way a painter stirs red paint and yellow paint to get orange paint. In both cases, and in one way or another, $A = B + C$.

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¹Or so we assume. Electrons will not count as basic if, say, they consist of ‘congealed’ mass-energy. The science does not matter so long as we have something basic to talk about.

But how does it go with properties? The electron has basic properties like mass and charge.² These are basic in the same way the electron is basic. Nothing else, much less anything more basic, composes them. But you yourself have mass and charge. We think of these as basic properties of you. But they cannot be basic in the same way the electron's mass and charge are basic. You also have other properties, non-basic properties, like the wetness of your tongue and the saltiness of your blood. So we wonder: when and how do basic properties come together to make properties, like your mass and charge, that seem basic in a real yet second-hand way? And when and how do they come together to make properties, like wetness and saltiness, that seem straightforwardly non-basic? Indeed, can we treat your mass as somehow basic and your blood's saltiness as non-basic when both are built of entities more basic than themselves?

For many reasons we should care about these issues. First and foremost, we need an understanding of property composition, an understanding philosophers do not yet have, to match our understanding of object composition.³ We want, especially, to learn how basic properties give rise to straightforwardly non-basic properties like wetness and saltiness. We cannot do this without the concepts and distinctions developed here. Second, an

²Mass and charge may be imperfect examples of basic properties. Mass seems to bestow many powers: to resist acceleration, to pull on other massive bodies, to change into and congeal out of energy, etc. (even though general relativity may entitle us to regard inertial and gravitational dispositions as two sides of the same coin). The Higgs field gives additional reasons for thinking mass a non-basic property. And charge, for its part, comes in two distinct interacting forms—positive and negative. Also, some physical theories—such as string theory—treat mass and charge as higher-level non-basic properties. So perhaps it makes most sense to regard mass and charge as stand-ins for the real basic properties, whatever they turn out to be. It does not matter so long as shortcomings in the examples do not cloud the underlying ideas.

³Some philosophers have gestured in this direction. See, for example, Crane, *Elements of Mind*, 88; Hawthorne, 'Quantity in Lewisian Metaphysics'. But perhaps L. A. Paul has worked most on property composition. Following suggestions by Rudolf Carnap, Nelson Goodman and D. C. Williams, she has developed an ontology recognizing only properties and a primitive relation of restricted property composition or fusion. So-called objects consist of properties thus fused together. Paul's work differs in at least three ways from the proposals made here. First, Paul focuses mostly on how properties compose objects, then uses the results to untangle sundry metaphysical knots. This paper, on the other hand, asks how basic properties compose various kinds of non-basic properties within an object-property framework. Second, Paul understands fusion as yielding a sum or conjunction of properties. So the fusion of *being red*, *being round* and *being located thus-and-so* gives the conjunctive property *being red, round and located thus-and-so*. This paper, by contrast, explores the ways basic properties compose higher-level properties whose characteristics, powers and susceptibilities might not result additively from those of their basic constituents (see Section VI). Hence Paul can readily adopt a modified form of classical mereology whereas this paper cannot. Third, Paul sees properties as logical parts of fusions and therefore can apply her property mereology to all kinds of properties. This paper, however, sees basic properties as input raw material from which higher-level properties result lawfully. Accordingly, it limits itself to concrete natural properties and the composites that issue lawfully from them. See Paul, 'Building the World', 'Coincidence as Overlap', 'Logical Parts'.

understanding of property composition helps us mark off views that might otherwise seem to run together. It also saves us from mistakes we might otherwise make. The paper says more about this in Section VIII. Third, some philosophers hold to a kind of panpsychism that grants basic conscious properties to basic physical objects and then builds complex consciousness properties, like your conscious state right now, out of them.⁴ Thinking through such ‘mental chemistry’ calls for a broader understanding of property composition.⁵ And fourth, some philosophers find unreal the distinction between properties and objects (or properties and substances), dismissing it as a distinction of thought—a mere abstraction resulting from something like Locke’s ‘partial consideration’—which does not mirror a distinction in nature.⁶ These philosophers must explain why object composition seems relatively straightforward while property composition seems both different and also less straightforward, even though, on their view, there can be no sharp divide between them. This paper takes a few first steps towards meeting these sundry needs.

II.

The paper treats properties as ways objects are. It takes as given that properties cannot exist apart from the objects they characterize. It also takes as given that objects cannot exist without being some way. The paper does not understand these objects as composed of properties held together by some bare (and mysterious) substratum. It does not view properties as ingredients in that way. Rather, it understands objects as existing only through having some determinate nature, where the object and its nature form a single entity we speak of as object and properties. If these assumptions hit the mark, then our concepts <property> and <object> might not define two disparate categories of being the way many philosophers think. That said, the paper nevertheless works within a framework of objects as basic concrete existents and concrete properties as the ways those objects exist. Thus far, and in thought at least, the paper grants objects priority over properties.⁷

Objects and their properties exist at levels—levels of organization or complexity. For example, basic physical particles and their properties fill out the bottom level (if such exists), and bigger and more complex composites with more complex properties sit at higher levels one above another. These levels differ from the first-order and higher-order levels envisioned by philosophers who populate higher levels with entities realized by lower-level

⁴See, for example, Lewtas, ‘Building Minds’.

⁵The term ‘mental chemistry’ comes from Nagel, ‘Panpsychism’.

⁶See Strawson, ‘The Identity’; Strawson, ‘Panpsychism?’; Heil, *From an Ontological Point of View*, 172.

⁷Heil defends this kind of ontological framework. Heil, *From an Ontological Point of View*.

entities. They differ also from the first-order, second-order and higher-order properties envisioned by philosophers who have in mind properties of objects, properties of properties of objects, and so on.

The paper concerns itself only with concrete properties of concrete objects. Let us understand concrete objects as those that exist, and/or have effects, within the space–time world. Then concrete properties are properties such objects have—or at least those of their properties that characterize the objects as they exist, and/or have effects, in the space-time world. Furthermore, the paper deals only with natural properties—properties that, as it is colorfully but perhaps unhelpfully put, carve nature at the joints. It envisions a sparse realm of these natural properties which serve as truth-makers for statements using the many (and potentially infinite) predicates we humans coin for one purpose or another.⁸ Finally, the paper assumes that all strictly basic properties are intrinsic to the objects that have them—that there are no purely relational strictly basic properties.⁹

The paper leaves open whether the entire space-time world, the cosmos, derives its being from its tiniest parts or whether instead those parts, along with everything else in the cosmos, derive their being from the whole. The paper nonetheless takes local ‘pluralism’ and local ‘smallism’ as givens: it allows that any higher-level concrete entity (except, possibly, the cosmos as a whole) consists of, and derives its nature from, the lower-level entities that make it up. It allows, that is, that ‘being’ and ‘propertied-ness’ flow upward. Thus, if being and propertied-ness do issue from the whole, they forthwith ‘dive’ to the bottom level and work their way upward from there.¹⁰ The paper also leaves open whether there exists a bottom level populated by metaphysically indivisible atoms, or whether instead the world has levels below levels, without end, each inhabited by entities that break apart into more basic entities.¹¹ However, it does assume a bottom level for propertied-ness. Thus, if gunky, the world has some level below which the entities are smaller packages of kinds instanced or tokened at (at least some) higher levels. For example, perhaps basic physical particles ‘evaporate’ into protean mass-energy at some low level. Below that there reside ever smaller quanta of the same kind of mass-energy. The paper therefore rejects two (possibly overlapping) metaphysics: (1) a monist world where being and propertied-ness feed continuously down from the whole; and (2) a gunky world with no bottom level of propertied-ness (where entities at each level resolve into

⁸Heil defends this view of properties and predicates. *Ibid.*

⁹Strictly basic properties are basic properties in the fullest sense, like the mass of an electron. See Section III for a proper account.

¹⁰Schaffer discusses this as a possibility. Schaffer, ‘Monism’.

¹¹The latter view coheres well with monism. For, if the source of reality and being must lie somewhere, and the entities at each level derive their reality and being from entities at lower levels, then, it seems, there can be no source for reality and being. This leaves only the whole—the ‘top level’—as the needed source.

different kinds of entities at lower-levels—Russian nested dolls inside differently shaped Russian nested dolls without end).

The paper uses the results relation—results from and results in—to catch the ways a higher-level entity can relate to lower-level entities such that the higher-level entity is nothing over and above the lower-level entities.¹² The results relation covers relations like identity, composition, realization, etc. Non-basic higher-level entities result from more basic lower-level entities. These more basic entities can bottom out in three ways. If radical emergence occurs, then some non-basic entities result from basic emergent entities that exist at some determinate higher level but not at levels below. Otherwise all non-basic entities ultimately result either from fully basic entities, if a bottom level exists, or, if a bottom level does not exist, from ever smaller amounts of some kind (or kinds) of entity (or entities). Henceforth, the paper will speak of a bottom-level, but mostly to avoid clumsy disjunctive sentences.

Given the framework of objects and their properties sketched above, the paper aims to understand—or to take first steps towards understanding—the ways higher-level objects are in terms of the ways their bottom-level constituents are. Thus the paper aims to understand higher-level properties in terms of bottom-level properties. This makes sense if bottom-level objects have natures (and existence) only through the ways they are, only through the properties they have. This entitles us to understand non-emergent higher-level properties as resulting from lower-level and ultimately bottom-level properties.

This project contrasts with two others. First of all, in two ways it differs from a mereological inquiry into the part-whole relation. First, mereology concerns itself with relations among objects. It does not carry over well to properties, where the higher-level resultant might confer different characteristics, powers and susceptibilities than do its lower-level constituents, and thus often differs from a straightforward aggregation of them. Second, mereology addresses the formal logic of composition and decomposition relations independently of the naturalness of the resulting fusions and divisions. But this paper has a more specific target: the ways lowest-level concrete properties actually result in higher-level concrete properties. We want, that is, to home in on the particular composition/decomposition relations that cut, and build, nature at the joints.

The relations investigated here also differ from the grounding relation developed by philosophers like Fine and Schaffer.¹³ The grounding relation, like the relation of property resultance, speaks to metaphysical dependency. But it does so much more broadly and often much more abstractly. Thus a

¹²The paper borrows the term from the British emergentists who contrasted resultants with emergents. Emergents stand over and above their subvenient bases. Resultants do not. See the discussion in McLaughlin, 'Rise and Fall'.

¹³Fine, 'Question of Realism'; Schaffer, 'On What Grounds What'.

grounding relation can take many forms—realization, composition, entailment, truthmaking, etc.—and can hold between entities of many kinds—objects, properties, sentences, propositions, etc. We best think of grounding as a determinable of which actual world property resultance is one determinate. We focus here on that determinate.

III.

We noted in Section I that an electron's mass and charge are basic properties: together with other entities they result in higher-level entities, but nothing results in them. Let us call these *strictly basic* properties. The concept of strict basic-ness gets at, and only at, the feature of not resulting from other entities. It thus leaves open at what levels strictly basic properties obtain. Physicalists, for instance, put all strictly basic properties at the bottom level. Emergentists, on the other hand, recognize strictly basic properties that exist only at higher levels. By the same token, the concept of strict basic-ness says nothing about the complexity of the strictly basic property. Physicalists only envision simple strictly basic properties. Here we understand a simple property as one that confers very few (kinds of) characteristics, powers or susceptibilities. A complex property, by contrast, confers more (kinds of) characteristics, powers or susceptibilities. But emergentists countenance very complicated strictly basic properties. For example, emergentists understand conscious properties as very complex strictly basic properties characterizing very complex non-basic physical objects. Think of your overall current conscious state.¹⁴

Now consider the mass of a towel. This does not count as a strictly basic property: it results from the masses of the towel's basic constituent objects. But the towel's mass nevertheless qualifies as the same *kind* of property as the electron's mass. (1) It confers the same kinds of characteristics, powers and susceptibilities—in this case the same kinds of inertial and gravitational dispositions, etc. (2) It does not confer any characteristics, powers or susceptibilities of a different kind. (3) It results from, and only from, strictly basic mass properties. (4) It differs from composite properties that result from more than one kind of strictly basic property (such as wetness or saltiness). For these others confer (kinds of) characteristics, powers and susceptibilities different from those conferred by any of the strictly basic properties they result from (for instance, quarks, gluons and electrons are neither wet nor salty).¹⁵ So the towel's mass is in many ways unlike everyday

¹⁴This holds for the conscious property that emerges. Some emergentists allow these strictly basic emergents to combine, at higher-levels still, into even more complicated non-basic conscious properties. In this case, the higher-level (and non-emergent) conscious property results from the lower-level strictly basic emergents. See Chalmers, *Conscious Mind*, 214.

¹⁵See Section IV for further argument.

‘mongrel’ composites like wetness or saltiness and in many ways like non-composites like strictly basic mass. So, while composite and therefore not basic, the towel’s mass is not typically non-basic. It has a peculiar nature intermediate between the strictly basic and the standardly non-basic. We can thus classify it as a ‘purebred’ composite. We thereby recognize it as having what we might understand as derivative or second-hand basic-ness. Again, this second-hand basic-ness rests on—is grounded in—the things that go into the property as well as the things it is and does—in other words, in its actual characteristics rather than in conventions of ours.

The paper has spoken of *kinds* throughout because the towel’s mass does differ from the strictly basic masses that compose it. (1) Its value exceeds the values of strictly basic masses (it has more mass than does an electron, quark or gluon).¹⁶ (2) Its value can vary over time (which, for example, the electron’s mass cannot, at least for any fixed frame of reference).¹⁷ (3) It confers traits that depend on how the towel sits in space and time: the towel’s center of gravity will change as we smooth the towel out or bunch it up.¹⁸ Strictly basic properties lack these kinds of traits. But note why. Strictly basic mass lacks features (1) through (3), not because those traits clash with the traits conferred by mass, but because traits (1) through (3) can only characterize composite entities. Almost any composite property will have at least some of those (kinds of) traits. Composite properties, for example, typically vary in value or degree, whereas strictly basic properties cannot.

We acknowledge the intermediate status of the towel’s mass by categorizing it as a *compositely basic* property. Three key ideas are at work here: (1) a compositely basic property results from, and only from, strictly basic properties of a single kind; (2) it confers, and only confers, the same kinds of traits as those conferred by the strictly basic properties that result in it; and (3) it depends, partly, on how those strictly basic properties sit in space and time. Think here how an object’s center of gravity, an aspect of its compositely basic mass, depends on the object’s shape and extension. Or think how a

¹⁶Electrons and quarks have different masses, and therefore different strictly basic mass properties. This is not a problem, since nothing requires strictly basic mass to come in one form only (so long as none of the forms results from anything else). Of course, as note 2 suggests, perhaps mass is not a strictly basic property at all, but a higher-level result of other entities. And perhaps the basic entity that results in mass comes in one form only (but also perhaps not).

¹⁷The paper assumes that a principle of conservation applies to strictly basic properties, or at least to those like mass and charge that function as building blocks (although perhaps not to strictly basic properties like baryon number and parity that function as natural ‘book-keeping’ devices rather than as building blocks). For arguments in support of such a conservation principle, see Lewtas, ‘Building Minds’. Note that a quark’s changing flavor might seem a counterexample to the claim in the text. Perhaps, however, changing flavor instead hints at underlying structure. For recent scientific work along these lines, see Lincoln, ‘Inner Life of Quarks’. For reasons set out in Section V, the paper very strongly leans this way.

¹⁸This will not hold of strictly basic properties even if extended simples exist (provided these simples maintain constant shape and size).

skater's spin changes as he pulls in or extends his arms, thereby shifting the spatial distribution of his compositely basic mass.

Consider now the towel's electric charge. Suppose the towel has been rubbed so that one side has positive charge while the other has negative charge. The towel's charge does not count as a strictly basic property because, as with the towel's mass, it results from the strictly basic properties, in this case the strictly basic charge properties, of the towel's basic constituents.¹⁹ But the towel's charge shares the features, listed in the previous paragraph, that set apart the towel's mass from run-of-the-mill mongrel composites.²⁰ It also shares the features that distinguish the towel's mass from strictly basic mass. But now things become a little more complicated. The towel's strictly basic mass properties do not move within the towel. They change their spatial relations one to another only as the towel changes shape—as it bunches up, folds over, flattens out, etc. But the towel's strictly basic charge properties can and do move within the towel. They can also enter the towel from outside and, at least to some extent, leave the towel. So the towel's overall charge depends on more, and more complicated, arrangements and events in space and time. Still, these complexities do not force us to change our understanding of composite basic-ness. They result from nothing more than the overall charge's composite nature together with the nature of the strictly basic charge properties that make it up—most relevantly their capacity to move about relative to the towel.

We can now put forward a definition of composite basic-ness.

A property A is *compositely basic* iff (1) instances of A result from, and only from, instances of some strictly basic property B; and (2) instances of A confer all but only the same kinds of characteristics, powers and susceptibilities as are conferred by instances of B; except insofar as (3) the characteristics, powers and susceptibilities of A are affected by the spatio-temporal distributions of the instances of B which result in it.

Note that any basic property—mass, charge, charm, color, etc.—has, and has necessarily, its strictly basic form. Some—such as mass and charge—have compositely basic forms as well. Others—such as charm and color—apparently do not have compositely basic forms. Perhaps they do not because, as a matter of contingent fact (known empirically), they characterize only basic (and bottom-level) objects—in this case quarks. Or perhaps scalar strictly

¹⁹We assume here that the towel's charge results entirely from the charges of the towel's constituents, and not also from entities outside the towel. Outside entities might affect the towel's charge, but only by affecting the charges of the towel's constituents. Even if this assumption fails, the example still illustrates the ideas behind composite basic-ness.

²⁰The towel's charge results from positive as well as negative strictly basic charges. The paper leaves this aside, assuming that both positive and negative charge fall under the same kind. We could complicate, or change, the example if this assumption fails.

basic properties also have their compositely basic forms whereas non-scalar strictly basic properties do not.²¹

IV.

Non-basic properties include compositely basic properties. But, as we have seen, compositely basic properties differ, in both pedigree and nature, from mongrel non-basic properties. This warrants us in recognizing a third kind of property, the *fully non-basic* property, which is neither strictly nor compositely basic. Like all non-basic properties, a fully non-basic property results from strictly basic properties, but, unlike compositely basic properties, it either (1) results from more than one kind of strictly basic property; or else (2) confers a characteristic, power or susceptibility of a kind different from those conferred by instances of any of the strictly basic properties that it results from. That, at least, follows logically from our definitions. However, and in fact, every fully non-basic property satisfies both disjuncts, making the definition of a fully non-basic property effectively conjunctive. Why? Because any property that results from two or more distinct kinds of strictly basic properties will confer characteristics, powers and susceptibilities affected by the distinct characteristics, powers and susceptibilities of its strictly basic constituents. Suppose, for example, that (instances of) fully non-basic property A result from (instances of) strictly basic property B and (instances of) strictly basic property C. Suppose that (each instance of) strictly basic property B confers (an instance of) power P_B and that (each instance of) strictly basic property C confers (an instance of) power P_C (and henceforth we shall drop the cumbersome talk of instances). Let P_A be the power conferred by fully non-basic property A. P_A will not have the same causal profile as P_B , because of the influence of P_C . Nor will it have the same causal profile as P_C , because of the influence of P_B . Its causal profile will differ from the causal profiles of each of the (kinds of) strictly basic properties that result in it. It will instead be some linear or nonlinear blend of the causal profiles of P_B and P_C . Now, even if A and B confer the same power(s), they must differ somehow—they must confer at least some different characteristics, powers or susceptibilities—for otherwise they would not differ at all and would count as instances of the same strictly basic property.²² But then the feature or aspect of A that results from the differing features or aspects of B and C will, following the above argument, differ from each of its strictly basic inputs. This shows that our definition of a fully non-basic

²¹Thanks to an anonymous reviewer for this suggestion.

²²Some philosophers identify characteristics (or qualities, or categorical properties) and powers (or dispositions). This paper sets aside this complication. See Heil, *From an Ontological Point of View*, Ch. 11; Strawson, 'Identity'.

property is effectively conjunctive even if we can logically infer only its weaker disjunctive form.

Consider wetness as an example. Wetness results from strictly basic charge properties as well as other properties of the objects (atoms or molecules or whatever) making up the liquid and, if any, the objects making up the wet thing (the molecules of a wet towel, for example). Thus it meets the first disjunct/conjunct of our definition of a fully non-basic property. Furthermore, wetness confers kinds of traits different from those conferred by strictly basic charge. This follows straightforwardly both from the fact that basic objects like electrons are not (and cannot be) wet and from the arguments in the paragraph above. Thus wetness meets the second disjunct/conjunct of the definition.

V.

Composite properties—both compositely basic and fully non-basic—can vary over time. They change when their constituents change or, when these stay the same, when they rearrange themselves within the whole. Thus the towel's charge, a compositely basic property, will change if electrons shift positions within the towel (same constituents; different arrangement); or if electrons leave or enter the towel (different constituents; different arrangement). Perhaps the towel's charge will remain the same if electrons leave and enter the towel such that each electron to enter replaces one that leaves (different constituents; same arrangement). Similarly, saltiness, a fully non-basic property, will change if some of the water molecules in a glass of salty water evaporate (different constituents; different arrangement).

Strictly basic properties cannot change, however. At least their non-relational traits cannot. Strictly basic properties cannot change because they do not have parts. And they do not have parts because nothing results in them; they are basic building blocks, after all. So, if a strictly basic property seems to gain a feature, then the new entity counts as a non-basic composite consisting of the original strictly basic property plus something else. And if an alleged strictly basic property loses a feature, then the original entity could not have been a basic building block in the first place. If we allow strictly basic properties to change, then we lose sight of what it means for something to be basic. We also commit ourselves to radical ontological emergence—in the forms of creation out of nothing and/or destruction into nothing.²³ (If a strictly basic property gains something, remains strictly basic,

²³Neither creation out of nothing nor destruction into nothing counts as a kind of results relation. Creation out of nothing brings forth something notwithstanding the absence of any relevant pre-existing building blocks. Destruction into nothing involves the creation of nothing (taken as a substantive) out of something. But nothing (taken as a substantive) cannot result from something because nothing (taken as a substantive) stands over and above something. (Note that virtual particles arise out of a pre-existing and infinite reserve of vacuum energy pursuant to pre-existing quantum laws. When they disappear they return to this reserve.)

and at all times lacks parts, then the accretion must have popped into existence out of nothing and from nowhere. And if a strictly basic property loses something, remains strictly basic, and again at all times lacks parts, then the entity lost must have disappeared into nothing.) And emergence is not a kind of results relation.

VI.

We can now glimpse, in rough outline at least, how object composition differs from property composition. We noted at the beginning of the paper that object composition works by a kind of aggregation. Just as a mason cements bricks together to build a wall, so nature cements quarks together to build a proton. The bricks survive in the wall, the quarks in the proton. Of course it is not quite this simple. The mason needs cement, just as nature needs gluons. And when we probe the roles played by cement and gluons we catch ourselves speaking of the properties of bricks and quarks—how the cement alters the surface chemistry of the brick, how the gluons engage with the quarks' basic dispositions. By contrast, property composition seems to work by a kind of blending. The input strictly basic properties do not survive the way bricks and quarks survive in wall and proton, but rather merge together to result in a single entity without obvious parts. To sum up, an artist adds together red paint and yellow paint to make orange paint—object composition by aggregation (input molecules and suspended solids stirred together)—during which the red color and the yellow color merge into orange color—property composition by blending.²⁴

Three points bear noting. First, object composition and property composition seem to take broadly different forms—aggregation versus blending. Second, property composition, as a kind of blending, is much less straightforward than object composition. Input objects survive, more or less qualitatively unchanged, in the output object. But input properties merge into a qualitatively distinct output property. This paper has little trouble tracing the links between the input strictly basic properties and the output compositely basic property because the inputs and output resemble one another so closely—in any case, closely enough that we can understand their few differences as straightforward results of the blending process. But things become much less straightforward in the case of those fully non-basic properties that result from many distinct kinds of strictly basic properties—wetness or saltiness, for example. This helps explain why philosophers have made relatively little progress understanding property composition. It also identifies the next steps to be taken—steps that could not be taken but for the distinctions developed here. Third, that object composition, when

²⁴The example serves merely to illustrate the different forms object composition and property composition seem to take. The paper does not by any means assume realism about colors.

looked at closely, involves both properties and property composition, hints at links between object composition and property composition. These links, when uncovered, may well shed light on the relation between objects and properties, perhaps bolstering or weakening the claims of those who deny basic ontological distinctions between them.

VII.

The definitions set out in this paper, together with the metaphysical reasoning behind them, have an important consequence. They show that non-basic properties—both compositely basic and fully non-basic—differ in kind from the strictly basic properties that compose them: they confer at least some different characteristics, powers and/or susceptibilities. Thus compositely basic properties will closely, but not exactly, resemble the strictly basic properties they result from. And fully non-basic properties will differ more or less from their strictly basic constituents, with the degree of difference ranging from very little to very great. But this means that non-basic properties, while nothing over and above their strictly basic constituents, nevertheless have real existence in their own right. We can understand them in terms of their strictly basic constituents. But we cannot eliminate them in favor of them. It may follow, further, that the composite objects which instantiate these non-basic properties also truly exist. That is, we cannot readily withhold reality from a composite object that instantiates an intrinsic non-basic property whose reality we do grant. But this point needs more argument than it can receive here.

VIII.

The distinctions explored in this paper have the various uses mentioned in Section I. They help us understand property composition, philosophical territory otherwise largely unmapped. They contribute to the metaphysical foundations of any panpsychism building higher-level and complex conscious properties from bottom-level and simple conscious properties. And they help explain the differences between object composition and property composition, a necessary precondition to assessing claims that our concept <object> and our concept <property> do not latch onto metaphysically distinct categories of being.

Our distinctions also help us draw clear boundaries around different metaphysical views, views often misunderstood and even more often only imprecisely marked off from one another. Thus physicalism holds that: (1) all strictly basic properties are simple; (2) all strictly basic properties are physical; and (3) all strictly basic properties obtain at the bottom-most level. Physicalism typically treats consciousness as a complex and fully non-basic property that obtains only at higher levels.

Emergentism holds that: (1) some strictly basic properties are physical and others are non-physical; (2) the physical strictly basic properties obtain only at the bottom-most level and the non-physical strictly basic properties obtain only at higher levels; and (3) the physical strictly basic properties are simple whereas the non-physical strictly basic properties are complex. Emergentism typically treats consciousness as a strictly basic property that only obtains at higher levels. Some emergentists then allow that these strictly basic conscious properties result in even more complex conscious properties at higher levels yet. These latter and non-basic conscious properties will count as compositely basic properties when they result from one kind of strictly basic conscious property, and as fully non-basic properties when they result from more than one kind of strictly basic conscious property.

Mind dust theories—like Nagel’s and James’s panpsychism²⁵—hold that: (1) all strictly basic properties are simple; (2) most strictly basic properties are physical, except for strictly basic conscious properties, which are non-physical; and (3) all strictly basic properties obtain at the bottom-most level. Mind dust theories therefore treat consciousness, in its simplest form, as a strictly basic property that obtains at the bottom-most level. They then treat higher-level consciousness—consciousness of the kind you and I enjoy, for example—as a non-basic basic property that results from strictly basic conscious properties. The higher-level conscious property will count as either compositely basic or fully non-basic depending whether it boasts a pure-bred or mongrel pedigree.

Neutral monism holds that: (1) all strictly basic properties are simple; (2) all strictly basic properties are non-mental and non-physical; and (3) all strictly basic properties obtain at the bottom-most level. Neutral monism treats physical properties and conscious properties as non-basic properties that obtain only at higher levels. Presumably these come in both compositely basic and fully non-basic varieties.

So, if we want to understand clearly the broadest outlines of a metaphysical theory, then we should ask what sorts of strictly basic properties it recognizes, what traits it gives them, and where it puts them. And we should ask which non-basic properties it takes to be fully non-basic and which it takes to be compositely basic. This will help us avoid both unwarranted conflations and unwarranted distinctions.

Perhaps a few examples make sense here.²⁶ Jaegwon Kim has claimed that emergentism and non-reductive physicalism come to the same thing.²⁷ But

²⁵The mind dust theorist believes that basic (and otherwise physical) objects also have basic and non-physical conscious properties. Or at least that some of them do. Higher-level consciousness results when these bottom-level properties combine into composite properties through a sort of mental chemistry. Nagel, ‘Panpsychism’; James, *Principles of Psychology*.

²⁶The paper adapts the first two from Lewtas, ‘Emergence and Consciousness’, and the third from Lewtas, ‘Physicalism’.

²⁷Kim, ‘Being Realistic about Emergence’, ‘Downward Causation’, ‘Making Sense of Emergence’, *Philosophy of Mind*.

they cannot. Non-reductive physicalism insists that special science property instances are nothing over and above physical property instances even though special science properties and physical properties differ as types. Non-reductive physicalism would not qualify as physicalism if it did not include the nothing-over-and-above-ness claim—if it did not hold that special science properties are non-basic properties (probably in all cases fully non-basic properties) that result from strictly basic physical properties. But emergent properties do stand over and above, and do not result from, strictly basic physical property instances. They qualify as strictly basic properties themselves. A results relation, across the board, therefore counts as a necessary condition for non-reductive physicalism, and the absence of a results relation, across the board, as a necessary condition for emergentism. Non-reductive physicalism and emergentism cannot be the same.

By the same token, C. D. Broad and Sydney Shoemaker distinguish emergent properties from properties at the bottom level that remain latent until they manifest themselves at higher levels.²⁸ Similarly, J. S. Mill and Alexander Bain distinguish emergent properties from potentialities at the bottom level that manifest themselves only at higher levels.²⁹ These philosophers nonetheless believe that the contrasting property kinds, as Broad puts it, ‘in practice . . . are equivalent’.³⁰ True, so far as it goes. From a strictly epistemological outlook, nothing sets the contrasting property kinds apart. In both cases we have a property invisible below the level at which emergence occurs and identically detectable at that level and above. But we still have an all-important metaphysical difference. In the one case, the emergent case, we have a property with no existence of any sort below the level at which emergence occurs, but present as a strictly basic property of a non-basic physical object at that level and above. In the other case, the potentiality case, we have a strictly basic property at the bottom level with no effects below the level at which ‘emergence’ occurs, but with (presumably non-basic) effects at that level and above. So, the emergent case puts at least some strictly basic properties at higher levels, whereas the potentiality case puts all strictly basic properties at the bottom level. The contrasting formulations therefore cannot refer to the same thing.

Finally, some physicalists—Kantian physicalists³¹—understand lowest-level physical properties as dispositions underlain by phenomenal (or proto-phenomenal) categorical properties. They claim thereby to retain the strengths, while avoiding the shortcomings, of standard physicalism (the kind characterized above). But Kantian physicalism and standard

²⁸Broad, *Mind and its Place in Nature*; Shoemaker, ‘Kim on Emergence’.

²⁹Mill, *System of Logic*; Bain, *Logic*.

³⁰Broad, *Mind and its Place in Nature*, 496.

³¹The label comes from Jackson, *From Metaphysics to Ethics*. Other labels include ‘funny physicalism’ and ‘Russellian panpsychism’. Goff, ‘A Posteriori Physicalists’; Chalmers, ‘Panpsychism and Panprotopsyism’.

physicalism cannot count as variants of the same metaphysical doctrine. Kantian physicalism treats all physical properties as non-basic properties that result from strictly basic phenomenal (or proto-phenomenal) properties and which obtain only at higher levels. Standard physicalism treats basic physical properties as strictly basic properties that obtain at the bottom level and other physical properties as non-basic results of these strictly basic physical properties. Kantian physicalism treats basic phenomenal (or proto-phenomenal) properties as strictly basic properties that obtain at the bottom level and other phenomenal properties—like your conscious state right now—as non-basic results of these strictly basic phenomenal (or proto-phenomenal) properties. Standard physicalism treats all phenomenal properties as fully non-basic properties that result from strictly basic physical properties and which obtain only at higher levels. The two doctrines therefore have grossly disparate metaphysical structures.

IX.

This paper leaves much unsaid, of course. Most importantly, we want a more fine-grained and informative account precisely explaining the characteristics, powers and susceptibilities of fully non-basic properties in terms of the characteristics, powers and susceptibilities of their constituent strictly basic properties—a need discussed in Section VI. But enough has been done, both to show how that project might get started, and to lay down a groundwork without which it probably would not get far.

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