

EMERGENT INDIVIDUALS

BY TIMOTHY O'CONNOR AND JONATHAN D. JACOBS

When we consider the nature of the human mind in a philosophical vein, perhaps the most fundamental questions we ask are these:

What is the nature of a human person's conscious experience—his having conscious thoughts and sensations, experiencing emotions, and so on?

And what kind of thing is the thinker that has them?

Most contemporary philosophers respond to these questions with variations on a basic materialist theme: a person's having conscious experiences is constituted by complex states in his nervous system, and he is entirely constituted by the simples comprising his body. Despite its orthodox status, the first of these broad materialist doctrines seems to us wholly unsatisfactory. How could one's present state of puzzlement over the nature of mind, for example, be wholly constituted by a complex pattern of neuronal firings? It is an altogether different kind of state, exhibiting basic qualitative and intentional features that separate it sharply from anything recognizably material. Yet the second materialist doctrine concerning the kind of thing we are is attractive. We certainly seem to have mass and occupy space. Furthermore, substance dualism notoriously faces conceptual puzzles concerning one's relationship to one's body, and empirical worries as well.

Thus, we look to develop a plausible account which rejects the materialist thesis concerning the nature of mental states while accepting (in a qualified form) the thesis that we are material substances. We believe (and shall here presuppose) that the most plausible such account will also incorporate two further claims: (1) We endure as three-dimensional entities (rather than perdure four-dimensionally). (2) Our mental lives are truly grounded in our physical nature, which claim we take to imply a nonreductionist realism about causation (rather than some form of regularity theory). A view we find attractive is that our conscious

mental life (at least) is ontologically emergent in the sense we lay out below. We aim to show that those philosophers who accept the thesis that some of our mental states are ontologically emergent have reason to accept, more strongly, that we ourselves are ‘emergent individuals.’ As we shall see, this is neither a form of mind-body dualism nor a variety of materialist monism, at least on its ordinary conception.

I Ontological Emergence: the Basic Elements

One of us has in various places defended an account of persons and their mental lives that we might call ‘ontological property emergence.’ (We emphatically warn the reader that this view needs to be sharply distinguished from others wearing the ‘emergentist’ label on which the operative notion of emergence is epistemological, rather than metaphysical, in character.)¹ On this view, I am indeed a biological organism, but some of my mental states are instantiations of simple, or nonstructural, properties. A property is ‘nonstructural’ if and only if its instantiation does not even partly consist in the instantiation of a plurality of more basic properties by the entity or its parts. (There is nothing remotely like a ‘realization’ relation holding between emergent states and complex, lower-level physical states, whether conceived as tokens or types. Emergent features are as basic as electric charge now appears to be, just more restricted in the circumstances of their manifestation.) Further, having such emergent states is, in general, a causal consequence of having the requisite type of intrinsic and functional complexity. The emergent state is a ‘causal consequence’ of the object’s having such complexity in the following way: in addition to having local influence in a manner familiar from physical theories, fundamental particles and systems also naturally

¹ For discussion, see Timothy O’Connor, ‘Emergent Properties’, American Philosophical Quarterly, 31 (1994), pp. 91-104. (1994); Persons and Causes (Oxford University Press, 2000a), Ch.6 (‘Agency, Mind, and Reductionism’); and ‘Causality, Mind, and Free Will’, Philosophical Perspectives 14: Action and Freedom (Blackwell, 2000b), pp.105-117.

tend (in any context) toward the generation of such an emergent state. Their doing so, however, is not detectable in contexts lacking the requisite macro-complexity, because each such tending is, on its own, incomplete. It takes the right threshold of complexity for those tendencies, present in each micro-particle, to jointly achieve their characteristic effect, which is the generation of a specific type of holistic state.

This will at least characterize the onset of emergent states within a system. Since the initial emergent states themselves will help to determine similar subsequent states—possibly resulting in a complex, stratified range of such states—the microphysics alone will not determine these later states. Likewise, emergent states will work in tandem with the underlying micro-states to determine later micro-states, manifesting a sort of ‘downward’ causation. Hence, the existence of emergent states is contrary to the assumptions of much contemporary metaphysics and philosophy of mind, assumptions which typically include the truth of some fairly strong mental-physical supervenience thesis and the causal closure of the microphysical realm. Neither of these assumptions will hold if there are emergent states as here defined.

We take the existence of such emergent states to be empirically open. Strong evidence in favor of a competing, reductionist view of any ‘high-level’ feature, H, of organized physical systems requires a plausible theory of lower-level structures which yields an account of the characteristic effects of H in terms of such structures. It is not enough to note that the lower-level theory receives direct confirmation from observed results in experimental contexts not embedded within a structure complex enough for the existence of the higher-level feature. (And that, of course, is the typical scenario, as sound experimental-design procedure bids one to eliminate as many extraneous influences as possible.) For all we know on present evidence, some perfectly respectable biological and chemical features are ontologically emergent in this way. By the same token, we do not think there is any clear positive reason to suppose so.

But, it seems to us, things are different with respect to psychology. A person's experiences and other conscious mental states exhibit features quite unlike those of physical objects, whether as revealed in ordinary sense perception or as uncovered in the physical and biological sciences. And the maximally direct nature of our first-person awareness of these conscious states precludes the a posteriori ascription to them of underlying physical micro-structure hidden to introspection. (By contrast, the causally-mediated awareness of a computer screen gives only coarse-grained information about its surface properties. Precisely because such information is causally transmitted, it is conceivable to each of us that we are and have been radically deceived by our sensory experiences, so that the world is quite unlike how we take it to be. But it is not conceivable, given the immediacy of our conscious awareness, that we be deceived about the intrinsic character of our experience itself.) The upshot of this familiar reflection, if it stands, is that our experiences and other conscious mental states have fundamentally distinctive characteristics and, furthermore, lack intrinsic features that are not directly accessible to their subjects. Some philosophers acknowledge that this sort of 'Cartesian' picture captures how we naively think about conscious experience but contend that it is an illusion. For our part, we think that such philosophers underestimate the difficulties for a theory of empirical knowledge that maintains that we are subject to a radical and pervasive cognitive illusion at the very source of all our empirical evidence.

Arguments supporting the above contentions and materialist replies are well-known in the literature, and we shall not enter that foray here.² We will presume that emergentist possibilities for theorizing about the mind are not merely open, but quite plausible. Given

² See, e.g., Frank Jackson, 'Epiphenomenal Qualia', Philosophical Quarterly, 32 (1982), pp.127-36, and David Lewis 'What Experience Teaches', in William Lycan, ed., Mind and Cognition (Blackwell, 1990), pp.499-519.. More recent discussions include David Chalmers, The Conscious Mind (Oxford University Press, 1996), and Michael Tye, Ten Problems of Consciousness (MIT Press, 1995).

that presumption, we wish to carefully scrutinize the view that an emergentist understanding of the mental allows for a straightforward substance monist view of human beings consistent with a property, or state, dualism. On such a view, I am a biological substance having sui generis mental states; I am at any moment simply the mereological sum of each of my fundamental parts, though these parts collectively instantiate 'simple' states that are no less fundamental, ontologically, than the energy state of a basic particle. We now try to show difficulties for such a minimalist emergentist view concerning personal identity through time.

The difficulties can be laid bare only in the context of a general ontology of particulars and their properties. Alas, general ontology is more controverted than the philosophy of mind. So we consider four broad ontological schemes to which we are willing to assign at least a modest degree of plausibility: transcendent ("Platonist") universals theory and one of its variants, kind-Aristotelianism; immanent universals theory (also sometimes laying claim to the 'Aristotelian' label); and trope theory, on which there are no universals, but only property instances. We argue on familiar grounds that the first two of these ontologies suffer from deep obscurities. Furthermore, the first cannot ground an emergentist picture, while the second hints at a way to do so, but only at the cost of even deeper obscurity. Accordingly, we focus on the last two ontologies for the purpose of exploring the question of personal identity, given a property emergentism. Reflection on each, we suggest, pushes the property dualist toward a stronger view, which we dub 'substance emergentism.'

II Emergence and the Ontology of Transcendent Universals³

Consider two electrons, eleanore and eddie, and suppose that they are mereological simples, having no objects as parts. According to our current physics, eddie and eleanore each have a

³ David Armstrong, Universals and Scientific Realism, vol.I (Cambridge University Press, 1976), Ch.7, heavily influences what we say in this section.

number of basic qualities, such as spin, mass, and electric charge, all to a determinate value, or perhaps value-interval. On the ontology of transcendent universals, their having, say, spin $1/2$, consists in their individually instantiating a universal property, spin $1/2$, which itself exists outside of space and time. If there had been no objects instantiating this property, the property itself would still have existed. The sixty-four dollar question in this theory is: What is instantiation?

It seems that the defender of the theory will be pushed in one of two directions. Going one direction, she will emphasize the ontological distinctness of eleanore and the universal (taking a cue, perhaps, from Plato's 'imitation' metaphor in the Parmenides). Instantiation then seems very much like an external relation, though sui generis and necessary—and itself not a universal, on pain, notoriously, of a vicious regress. One problem with going this route is that it is hard to make sense of causal realism, which we are here assuming. A realist about causality wants to say that things act as they do because of the way they are. Their properties confer primitive causal capacities or are at least bound up in primitive causal relations to those of their effects. But it's hard to see how eleanore's bearing an external relation to something outside space and time could result in such causal capacities. We'll not press this contentious matter here. A related and more directly compelling worry for the Platonist view is that there is no end to the universals a thing instantiates, yet most such universals, one supposes, have nothing to do with how a thing behaves. There is no clear story of a realist sort that a defender of transcendent universals can tell about why those universals that science focuses attention on should determine the basic capacities of physical entities. And so it seems that one who accepts the sort of ontological property emergence described above cannot go in this direction.

The second direction the defender of transcendent universals may go is reflected in the alternative metaphor from the Parmenides of 'participation.' On this view, the very being of eleanore is bound up with the property, spin $1/2$. It is a mistake to conceive instantiation as a kind of external relation, even if sui generis, between them. Nor even does an internal

relation get it right. For consider a typical internal relation such as being the same color as. It is plausible to think that such a relation holds in virtue of the intrinsic features of the relata; they are the same color because they are each intrinsically as they are, color-wise. But we do not want to say this of eleanore and the transcendent universal of spin 1/2, as it suggests that there is something about eleanore intrinsically that is logically prior to her instantiating the property. So what we want to say is that in some sense, eleanore is partly constituted by the property. But notice that this clarification of the theory of transcendent universals is really either a modification in the direction of the kind-Aristotelian view or, better, a change to our third ontology, that of immanent universals.

III Emergence and Kind-Aristotelianism

In one major strand of Aristotle's thought, the notion of essential kinds plays a central role. Michael Loux (1998) has recently elaborated and defended this view and we shall take his version as canonical.

On this account, objects, or certain privileged categories of objects, are basic individuals or substances. They exemplify various properties, but as with the Platonist view these properties are not literally parts or constituents of the objects. More important than the properties they exemplify at any given time are the kinds of which they are members. Kinds are a special sort of universal, distinct from the ever-changing properties of objects. They are prior in reality and in the order of analysis to their members, giving the members their identity—their being the things they are—though not by being a part of the members, nor by any causal influence over them. The individual substances are held to be irreducible, yet the kinds are said to 'induce particularity.' Were it not—per impossibile—for this function of the kinds, there would be no individuals as distinct parts of the world. Aristotelians frequently advert here to a cookie-cutter metaphor: kinds carve up the world into a collection of individuals of distinct sorts.

Now, we take all this to be deeply—even irremediably—obscure. How could the instantiation relation—or for that matter, any relation—induce particularity? If particulars are involved at all, it should be as one of the relata, rather than as a consequence of a relation between two non-particulars. But on the proposed account, at least for basic particulars, a relation of instantiation would hold between the kind-property and, well, what? Nothing in particular, it seems. (Formless matter, which is not particular.) It might be suggested that in place of formless matter at the bottom of things, there are special objects which are not matter-form composites, the arrangement of which serves as the ‘matter’ for familiar composites.⁴ This pares back the claim that kind-universals induce particularity; instead, they are responsible only for there being certain kinds of particulars (hydrogen atoms, elm trees, etc.), and not particularity per se. Fair enough, although we might now wonder why universals are needed at all, if some kinds of objects (the basic ones) can exist and presumably be the subjects of true predications without them.

If, contrary to these worries, some such view could be satisfactorily made out, we would be able to avoid the indiscriminating profligacy of the Platonist view, since fundamental kinds are few and reflect general characteristics associated with emergence: special characteristics that confer fundamental causal capacities. It seems, indeed, that when the kind-Aristotelian is asked for an account of why organizing matter into the form of a living human being results in a fundamental kind, whereas organizing matter into the form of my computer screen does not, she will end up telling some kind of emergentist story. However, we can have the advantages of the kind-Aristotelian view without as much obscurity by placing properties within the structure of objects, and this is reflected in our next view.

IV Emergence and the Ontology of Immanent Universals

⁴ We owe this suggestion to Michael Rea.

Consider again eleanore. On the ontology of immanent universals, eleanore, while having no object parts, has each of several features—spin, charge, mass, and so on—as constituents. As universals, these features exist wholly in both eleanore and eddie, and also in myriad other particles. If this much is true, there must be more to eleanore than a mere cluster of universals, since she is a particular thing, and no cluster of universals can yield particularity.⁵ This something extra can only be, well, eleanore’s particularity or thisness, a non-qualitative aspect necessarily unique to her. Eleanore, then, is constituted by a cluster of universals plus such a particularity, bound in some sort of non-mereological structure, which we may call a ‘state of affairs.’⁶ When we consider the identity of eleanore, we look to the persistence of her thisness and whatever universals this may entail.

Now consider an individual water molecule, wilbur, which contains eleanore as a part. We will suppose that there is nothing ontologically emergent about such an entity. On that assumption, wilbur is not only constituted by a great many mereological simples, but each and every one of his basic features are wholly constituted by the instantiation of more basic features in his parts together with the basic relations between them. (Within a framework whereby all objects, including simples, are built up out of non-mereological property-parts, it is natural to seek to economize the number of basic properties, analyzing many others as structures constituted by the more basic ones, and perhaps treating other predicates as answering to only non-immanent concepts, which apply in virtue of properties in a many-

⁵ See Max Black, ‘The Identity of Indiscernibles’, Mind, 61 (1952), pp.152-64, Robert Adams, ‘Primitive Thisness and Primitive Identity’, Journal of Philosophy, 76 (1979), pp.5-26, and a more recent exchange between John O’Leary-Hawthorne (‘The Bundle Theory of Substance and the Identity of Indiscernibles’, Analysis, 55 (1995), pp.191-96) and Dean Zimmerman (‘Distinct Indiscernibles and the Bundle Theory’, Mind, 106 (1997), pp.305-309).

⁶ See David Armstrong, A World of States of Affairs (Cambridge University Press, 1997), Ch.1.

one relation. Otherwise, we should have to posit a brute difference between those property-parts that confer causal capacities and those that do not.)

Should we suppose wilbur to have a particularity all its own, wholly distinct from the particularity of his component simples? It seems not. Loose and popular discourse might encourage us in such thinking, but there seems little else to recommend it. For what accounts for this added something? Under what circumstances do such thisnesses arise, and whence do they disappear? Is it only when simples come into close proximity to one another, corresponding to the vague, commonsensical notion of objects? Or do we admit them for scattered objects as well? Without some motivated restrictions, there will be a bewildering variety of particularities instanced during every boring episode one may observe, some of them exceedingly short-lived.

If we embrace this ontology in a serious way, we should posit distinctive particularities in only mereological simples and those composites that exhibit some kind of objective, substantial unity. Systems exhibiting ontologically emergent properties are natural candidates. Those lacking such features, however much they may appear to be unified to the uneducated eye, are individual objects only by a courtesy born of practical concerns. Suppose we had a firm understanding of the microphysical dynamics and at the same time heightened powers of perceptual resolution to ‘see’ the interactions of fundamental material constituents (perhaps by being shrunken, as in Leibniz’s ‘mill’ thought experiment).⁷ We would apprehend the local interactions of basic entities, unconstrained in any fundamental way by nonderivative macroscopic forces, and recognize the vagueness of the boundaries of phenomena on the borders of commonsense objects. The effect, we submit, would be a quite reasonable dissolving of the sense of tight unity that unaided perception reinforces.

⁷ See section 17 of the Monadology. (Monadology and Other Philosophical Essays, Paul Schrecker and Anne Martin Schrecker (trans. and eds.), Bobbs-Merrill, 1965 [1714].)

Now let us turn to ourselves. Our holistic mental states (or perhaps certain enduring 'baseline' states in particular) confer on us a substantial unity as thinking biological substances, requiring one to treat persons as wholes in any adequate characterization of the dynamics of the world. This functional unity does not itself constitute a particularity as an enduring thing, but it plausibly implies it. Surely our particularity is primitive, rather than deriving from the primitive particularity of our parts, as those are constantly changing. Furthermore, one who embraces this general ontology will probably want to put essentialist constraints on thisnesses—lest we permit the absurdity that the thisness of eddie the electron could have been the thisness of me—and my essential properties are not going to be any kind of function of those of my fundamental parts.

So, given the ontology presently in view, it seems that as organized entities exhibiting holistic features, we ourselves have distinctive thisnesses. At first glance, this looks to be a kind of substance dualism, albeit of an emergentist sort, on which the 'mind' asymmetrically depends for its existence on the activity of the underlying 'body.'⁸ For unlike other complex 'objects' recognized only as a courtesy, an emergent entity has a distinctive particularity and distinctive, fundamental properties. Our ontology has two basic sorts of genuine objects: microphysical and emergent macrophysical. We should, however, distinguish three conceivable emergentist scenarios, only the last of which is being contemplated here:

- (1) A new object emerges, with its distinctive thisness and a rich range of emergent features, and it does not continue to depend on its underlying origin in a complex system. Once spawned, it is set loose to seek its own fortune.
- (2) A new object emerges and continues to depend for its existence on the structure that generated it. The underlying composite system and the new thing nonetheless interact

⁸ William Hasker, The Emergent Self (Cornell University Press, 1999) advocates this view. It is discussed favorably by Peter Unger in 'Free Will and Scientiphicalism', Philosophy and Phenomenological Research, forthcoming.

with each other as distinct units—strictly speaking, there are a bunch of physical simples that jointly interact with the emergent object—so that the emergent object affects other things in its environment only via affecting the originating system.

(3) The new object is itself the composite system. The simples jointly compose the object, which has a distinctive thisness and some distinctive features.

The first of these scenarios is a radical kind of creation ex nihilo, and whether conceivable or not, there are no remotely plausible candidate instances. As for the second, consider that we are apparently asked to contemplate a composite physical system's giving rise, all in one go, to a whole, self-contained, organized system of properties bound up with a distinct individual. Applied to human beings, the view will imply that at an early stage of physical development, a self emerges having all the capacities of an adult human self, but most of which lie dormant owing to immaturity in the physical system from which it emerges. Presumably, in order to soften the envisioned discontinuity and bring the picture of the mind's workings into better accord with empirical evidence, we shall want to say that while the emergent individual is in principle detachable from its sustaining base (at least 'by the power of God'), its actual 'inner' workings in the natural order are intimately bound up with the lower level. To the casual observer, that is, it would look to be a single unified individual, though in reality it would be a two-part composite. Not conclusively ruled out, we judge, but not terribly attractive, either. A theist could get around the implausibility of positing the natural emergence of an entire, wholly distinct individual by supposing that while such individuals always come into existence under precisely specifiable conditions, in fact these are merely the occasions on which God generates and solely sustains the emergent individual. However, this gambit faces the problem of explaining how, once such an individual is generated, it comes to act uniquely on this brain, and not some other. It appears to require one to allow that causality can be haecceitistic: that a causal agent, x, could have a capacity to act that is uniquely directed at one particular object, y, independently of any general external relationship between the two that could subsequently

obtain between x and some appropriate third object, z, leading to the same sort of causal connection that x and y currently enjoy. Though some views of causality allow for such an outcome, by our lights, such accounts are mistaken.⁹

It is, then, the third scenario that we have in mind. On it, the emergent things we are, are none other than living organisms, albeit they may well have an ontological status not had by organisms in general. So it is not a mind-body dualist variety of emergence, as is true of the first two scenarios. Nor does it seem to be what people have had in mind (including one of us in previous writings) in espousing mere property emergence. We rather seem to have identified a distinctive, third form of emergence between the two which by our lights is the most promising of the bunch.

All of this, however, has been assayed within the immanent universals ontology, championed of late by David Armstrong. Let us now consider what we as emergentists might be led to say within the ontology of tropes.

V Emergence and Trope Ontology

Where Armstrong sees a single universal instantiated within multiple particulars, the trope theorists sees several, wholly distinct property instances that primitively resemble each other. According to this theory, everything that is, is particular. What we call ‘individuals,’ even basic individuals such as (perhaps) electrons, are comprised of a number of more basic particular building blocks, the tropes.

On one version of the general theory, basic individuals are simply mereological bundles of tropes that are ‘compresent’ to one another, where that relation involves at least spatiotemporal co-location. This view has been advocated recently by Keith Campbell (1990). Indeed, Campbell holds that it is a contingent fact that multiple tropes are always compresent in a given location. He’d allow that there might have been solitary, ‘free-

⁹ For fuller discussion of this whole matter, see O’Connor (2000b), op. cit.

floating' tropes, despite its repugnance to common sense opinion. Alternatively, one might posit as a basic necessity that every trope type requires for its being instanced a threshold number of other compresent tropes.

On a second version of trope theory, the substance-attribute version, we again have the addition of primitive thisness, which here is intended to account not for the individual's particularity (since tropes are themselves particular) but its 'thinginess.' Such a theorist regards tropes, even bundles of tropes, as ontologically dependent entities, best thought of as ways things are, rather than as things in their own right.¹⁰

Consider the nature of complex objects lacking emergent features. It seems that what we should say here, on either version of the trope theory, will closely parallel our remarks concerning such objects within the immanent universals ontology. Such composites are nothing over and above the array of basic objects and their relations to one another. At least, they are no more objectively there than an arbitrary scattered object that one might choose to name. We certainly should not posit special, overall tropes or thisnesses to such things. Parallel to an immanent universals picture, tropes would constitute a relatively sparse base of truthmakers for an abundance of supervening concepts.¹¹ Their properties will be nothing more than mereological structures of property and relational tropes in and between the constituting simples.

¹⁰ See C.B. Martin, 'Substance Substantiated', Australasian Journal of Philosophy, 58 (1980), pp.3-10, who develops a view of this sort which he sees as implicit in Locke.

¹¹ Nowadays, philosophers often take the indispensability of certain concepts for human investigation of the world as a sufficient justification for ascribing the corresponding property to the world (e.g., Jerry Fodor, 'Special Sciences', Synthese, 28 (1974), pp.97-115, and Louise Antony, 'Making Room for the Mental', Philosophical Studies, 95 (1999), pp. 37-44.). We take this to be poorly motivated, but cannot argue this here. For discussion, see Timothy O'Connor and Hong Yu Wong, 'The Metaphysics of Emergence', currently unpublished.

When we turn to cases involving emergence, the two versions suggest different results concerning the composite object's individuality. The substance-attribute version is the easiest to assess, as it seems precisely parallel in relevant respects to the theory of immanent universals. Since we will have enduring holistic tropes attaching to the bundle of particles, consistent with constant change in the bundle's membership, we should require a specific thisness of the overall composite object. And as with the universals case, this amounts to a special new kind of substance, but not a dual to the body.

The alternative, bundle-of-tropes approach, at least in the austere variety propounded by Campbell, doesn't mesh well with the idea of a literally enduring-yet-changing object. An object's being is exhausted without remainder by its tropes. Therefore, to the extent that the individual tropes have changed, the bundle's very being has changed.

The very idea of being a trope-constituted basic individual at a time seems to be something of an arbitrary matter. Some trope theorists help themselves to the assumption that all basic tropes are instanced at dimensionless spatiotemporal points, which would permit one to say that basic individuals are entirely composed of all the tropes instanced at a given such point. But even if this conjecture were true, it hardly seems a conceptual truth, and so doesn't seem to give a clear analysis of object individuality within this framework. And in any case, things are clearly rather difficult in cases involving emergent features of larger systems. For we will be hard pressed to give a similarly principled answer to the question: What would make two emergent properties be those of the same individual, when they are? Perhaps the properties are not even spatially located, as most property dualists have supposed concerning the mental. We suppose that the best criterion will be causal, implying that we have two emergent properties of the same composite system just in case they are simples and the instantiation of each results from the system's joint causal activity in the manner described in our introductory remarks. If that is thought insufficient to characterize the overall system as an individual, as against a collection of trope-bundles in causal interaction with one or two unbundled emergent tropes, the 'austere' trope theorist

might say that whether or not we have an emergent individual which is comprised of component tropes admits of degrees. As we move to scenarios exhibiting more emergent tropes associated with a given system and greater degrees of hierarchical structure at the emergent level (anchored by baseline, long-enduring features), it becomes more natural to speak of an emergent individual, whose identity is constituted by a continuing manifestation of smoothly-evolving, emergent psychology bound up with an underlying flux of micro-level basic trope-bundles and temporary emergent tropes.

We speak of the above as an ‘austere variety’ of the trope-bundle approach since there is an alternative currently on offer, the ‘nuclear theory’ of Peter Simons (1994). Simons wants objective individuality in trope-bundles without resort to substrata, such as thinsnesses. He directs our attention to the possibility of a bundle of co-located tropes (the ‘nucleus’), each of whose members are essential to the existence of the others, together perhaps with other tropes (the ‘accidents’) on which the nucleus does not depend. So if there are basic causal laws requiring that tropes of a certain number of kinds can be instanced only together with instances of the other kinds, we will have the requisite nuclei. A number of dependent aspects will thus together constitute the essential core of an individual whose aspects they are. (And again, this individual may also have other aspects contingently.) So long as the nucleus endures, the individual does likewise.

Now imagine a system of such nuclei-enduring individuals that come together at a point in time and thereby give rise to emergent features. If we are to adhere consistently to the proffered analysis of individuality, we should say that the result would be an emergent individual if and only if a plurality of emergent tropes constitutes an enduring nucleus, one that will invariably be accompanied by more short-lived accidental emergent tropes. Suppose this to be so. Here, it seems that we finally have the makings of a true substance dualism. For the emergent-level nucleus itself suffices for individuality, despite its causal dependence on the underlying system of lower-level nuclei. We would have a distinct substance, then, causally interacting with and continually dependent on the lower-level

system of substances. However, consider that there will be peripheral tropes associated with this high-level nucleus at any given time, which tropes are the changing features of the emergent individual. We consider these to be part of the emergent individual because both the nucleus and its accidental accompaniments are bound up with the same underlying system of individuals. While one could, in strict consistency, treat that as an external condition on inclusion of accidents in the high-level individual, it is more natural to take the emergent individual as encompassing the sustaining system itself as an accidental (and constantly changing) part of its nature. What is essential to me, then, is the core nucleus of emergent tropes—the very ones that now partly constitute my being, not merely ones that resemble these—and there being some lower-level trope-individuals or other that constitute a structure capable of sustaining this emergent nucleus.

We have considered three different trope-based accounts of the unity of particulars and their implications for the nature of an emergently-proprieted composite. The substance-attribute account yields the same result as its counterpart within an ontology of immanent universals: an emergent system which is a true composite. The more austere bundle theory has less sharp implications, but will plausibly suggest something approximating this result where the range of emergent features is rich and tightly structures, as we may suppose is true in our own case. Only Simon's novel nuclear account would imply that emergent individuals are dual to their bodies. While we take Simon's account to be intriguing, we are not inclined to adopt it, and so we take the likeliest form of trope theory to also endorse the emergent composite view of human persons, given the basic hypothesis of emergent states.

VI Two Alternative Views, Briefly Considered

Substance emergentism permits a robust realism about our mental lives consistent with the supposition that such episodes are largely a product of, and are continuously dependent upon, purely physical aspects of our nature. This is an attractive combination, it seems to us, and so the view merits further elaboration and exploration.

There are alternative views with some currency that might seem rather similar to ours. We want to briefly note two prominent such views in order to make plain their substantial difference from our own.

Peter van Inwagen (1990) presents an elaborate argument for the conclusion that mereological simples and living organisms are the only material beings there are. Thus, he upholds a position similar to our own: an ontology which restricts composition to those collections of particles satisfying a non-trivial condition unconnected to contingent human interests and purposes. And at first glance, his motivation appears to bear a family resemblance to ours. He contends that we must accept the existence of thinkers because of the correctness of Descartes' cogito argument that thought implies thinkers. He writes: "I do not see how we can regard thinking as a mere cooperative activity...things cannot work together to think—or, at least, things can work together to think only in the sense that they can compose, in the strict and mereological understanding of the word, an object that thinks" (p. 118). However, he also holds that this point is neutral on the metaphysics of thinkers, and he goes on to suggest that the ground of unity for thinkers does not reside in anything mental but in facts constituting their being alive. And earlier in the book he tells us that he is inclined to reject the thesis of holism, on which "the properties of organisms are not wholly determined by, do not wholly supervene upon, the properties of their parts" (p. 90).

For our part, we find all this confusing. If (as we suspect) he rejects the existence of emergent mental properties in our sense of emergence, then we fail to see the force of his remarks against the thesis that thinking is a cooperative activity among non-thinking simples. If we are composite objects that have no emergent mental features, then it seems that thinking must be a cooperative project between the simples that compose us. It is possible, however, to read van Inwagen this way:

There probably are not any emergent aspects to merely being alive, but thought (in Descartes' liberal sense) does involve emergence. The existence of these emergent

features, however, merely established the existence of thinkers, without thereby providing the criterion of composite existence. Here, we must look at thinkers as we know them (they turn out to be biological composites, and not immaterial simples, as Descartes concluded) and try to discern what is fundamental to their nature. The most plausible candidate is life. (Indeed, thinkers whose current existence is indubitable on Cartesian grounds could continue to exist after losing entirely the capacity for thought.)

We do not find this position well motivated. Our Leibnizian shrunken observers, for example, would not notice a simple qualitative or dynamical difference between the storm of atoms in a merely living system and those within a stable, non-living system.

Our aim here, however, is not to rebut his position, on either construal. Instead, we note that its distinctness from our own is a consequence of a somewhat different set of motivations. As readers of Material Beings will know, van Inwagen is motivated to adopt a restricted ontology of composites in order to satisfactorily respond to a range of familiar puzzles, including the Ship of Theseus. Our animating goals are to account for the intuitive irreducibility of mental phenomena to any physical phenomena and, for reasons of theoretical economy, to admit only those composites which do fundamental causal work.

More recently, Lynn Baker (2000) has argued that persons are distinct from but constituted by their bodies. (She sees the constitution relation as holding between all manner of entities, such as artifacts and the lumps of material of which they are made.) Note carefully: persons are said to be constituted by their bodies, not by their bodies' parts. On this view, we have two body-sized unities here, not one. In a nutshell, the view developed is this: my body and I are coincident objects that share all our properties, but we have them in different ways. My body has the property of being six-feet-tall primarily, while I have it derivatively, in virtue of my body's having it. I, meanwhile, have the property of thinking about the mind-body problem primarily, and my body has it only derivatively (pp.46ff.).

An important motivation for Baker's coincident-objects approach is the conviction that many ostensible middle-sized objects (including persons and artifacts) are just as real as fundamental physical objects, even though they do not introduce fundamental physical forces in a way that would violate the causal closure of the physical. This particular non-reductionist strategy has an advantage over ours of making no empirically risky assumptions, but it comes at its own cost: the posited constitution relation is uncomfortably similar to the 'union' relation between mind and body on Cartesian dualism. Consider a Cartesian who says that my immaterial mind has the property of being six-feet-tall derivatively, in virtue of being joined to a body that is six-feet-tall simpliciter, and likewise for properties of my mind which are had derivatively by my body. Baker stipulates that an immaterial entity cannot enter into constitution relations (p.43), but she frankly admits that this stipulation was added precisely to avoid the unwanted implication that the view turn out to be a version of Cartesianism. Our composition-conferred-by-holism view is not subject to this and other difficulties associated with spatially coincident entities. There are not two composite entities occupying a body-sized region; there is but one, a composite which forms a true unity.

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