

*Against ontological structure**Peter van Inwagen*

Let us use the term ‘individual’ for the common objects of everyday perception and thought and reference and also for any things sufficiently like them that those things count as, well, let us say, ‘the same sort of thing for metaphysical purposes.’ I use the word without regard for any philosophical associations it may have (e.g. it may be hard for some philosophers to hear or read the word ‘individual’ without supposing that one of its functions is to stand in opposition to some other word, such as ‘universal’ or ‘attribute’). So: we human beings are individuals, tables and chairs are individuals, pebbles and boulders are individuals, protons and variable stars are individuals, elves and goblins are individuals, gods and demons are individuals, reflections in a mirror and shadows and holes and surfaces are individuals . . . That is to say, the items in this list are individuals provided (i) that they exist, and (ii) that they really are ‘the same sort of thing for metaphysical purposes’ as the common objects of everyday perception and thought and reference. (As to the point of the second qualification, consider the case of protons. Suppose that ‘a proton is a *thing* – like a *rock!*,’ a statement I once heard a Nobel laureate in physics make. That statement, if it were taken as a serious contribution to metaphysics, would seem to imply that ‘protons’ are indeed sufficiently like pebbles and boulders to count as the same sort of thing for metaphysical purposes. But it has been said that – owing to the very non-everyday properties ascribed to protons by quantum-field theories like the Standard Model – to take that statement and other such offhand statements by physicists at metaphysical face-value¹

¹ Many such statements could be quoted. Here’s another, also by a Nobel laureate (it’s about atoms, not protons, I concede – but it’s the protons in the nuclei of atoms that are responsible for the ‘repelling’ it touches on):

If in some cataclysm all scientific knowledge were to be destroyed and only one sentence passed on to the next generation of creatures, what statement would contain the most information in the fewest words? I believe it is the atomic hypothesis (or atomic fact, or whatever you wish to call it) that all things are made of atoms – little particles that move

is to embrace ‘the philosophy of “A” level chemistry,’ a statement that is pretty obviously intended to imply that protons are very far indeed from being sufficiently like pebbles and boulders to count as the same sort of thing for metaphysical purposes. The point of this example is that whether one counts so-and-sos as ‘individuals’ in the present sense will depend to a very great extent on what features one ascribes to so-and-sos.)

‘Nominalists,’ let us say, are metaphysicians who hold that everything that exists is an individual.² ‘Realists,’ let us say, are metaphysicians, who hold that there are ‘attributes’ or ‘qualities’ or ‘properties’ or ‘features’ or ‘characteristics.’ (As I use them, these five terms are synonyms. I generally prefer ‘property’; when, on occasion, I use ‘attribute,’ it is simply because I have grown tired of writing ‘property’ and have decided to use another, synonymous word for a while.) There are, however, disagreements among realists about the nature of these ‘properties.’ One important disagreement concerns the question whether properties are particulars³ – ‘tropes’ or ‘individual accidents or ‘property instances’ – or universals. (And, of course, some realists hold that some properties are particulars and that others are universals.) A second important disagreement among realists about the nature of properties, and one that is less commonly remarked on, is between those who believe that some or all properties have causal powers and those

around in perpetual motion, attracting each other when they are a little distance apart, but repelling upon being squeezed into one another. In that one sentence, you will see there is an enormous amount of information about the world, if just a little imagination and thinking are applied. (Feynman et al. 1963–65; vol. 1, 2)

² But what about the possibility, just now conceded in the text, that, e.g., protons may not be individuals? Does this definition imply that nominalists are in danger of finding themselves committed to denying the existence of protons? (One does not have to turn to physics to find entities that raise this question or raise questions that are essentially the same as this question. It is easy to imagine a metaphysician who holds that reflections and shadows and holes and surfaces are real things that are not sufficiently like human beings and tables to count as the same sort of thing for metaphysical purposes. Does this position commit its adherents to the thesis that nominalists, *qua* nominalists, must deny the existence of shadows?) And isn’t that apparent implication of what I have said a problem – a problem either for my definition of ‘individual’ or my definition of ‘nominalism’? There is a problem, I suppose, but it is a verbal, not a substantive problem, and requires only a verbal solution. It is a merely verbal problem owing to the fact that, if a proton is insufficiently like such paradigmatic individuals as chairs and stars to count as the *same* sort of thing for metaphysical purposes, it is at any rate vastly more like them, metaphysically speaking, than is a trope or a universal (supposing those things to exist). And it is tropes and universals that nominalists mean to deny the existence of. In my view, these reflections imply that the problem is merely verbal. And here is its merely verbal solution. Let us say that sub-atomic particles are, if not individuals, then *semi-individuals* – or quasi-individuals or honorary individuals or whatever. (And let shadows and reflections and the rest also be semi-individuals.) And let us say that nominalism is the thesis that everything that exists is either an individual or a semi-individual. Let this (merely verbal) refinement of the concept of ‘nominalism’ be implicit in every statement about ‘nominalism’ and ‘nominalistic ontologies’ and ‘individuals’ in the remainder of this essay.

³ I use ‘particular’ to mean ‘non-universal.’ Individuals and tropes – if tropes exist – are both particulars.

who deny this. Consider, for example, the following passage from Jonathan Lowe's *The Four-Category Ontology*:

Perception . . . involves a causal relationship between the perceiver and the object perceived and we perceive an object by perceiving at least some of its properties. We perceive, for instance, a flower's colour and smell.⁴

This passage occurs in the course of an argument for the conclusion that some properties must be tropes or individual accidents (or whatever one chooses to call them; Lowe's term is 'modes') – for, in Lowe's view, universals cannot enter into causal relations and therefore cannot be perceived. Other realists – L. A. Paul, for example – think that some universals can be perceived.⁵ But Lowe and Paul agree that some *properties* can be perceived and therefore can enter into causal relations. With scant regard for the historical appropriateness of these terms, I will call realists who hold that properties have causal powers aristotelian realists or aristotelians, and I will call those realists who deny that properties have causal powers platonic realists or platonists. (The lower-case spellings are intended to dissociate my use of these two terms from the philosophies of their eponyms.)

I will call any metaphysical theory whose primary concern is with individuals and properties and the relations between them an ontology.⁶ I propose a taxonomy of ontologies that groups them into three broad classes:

Nominalistic ontologies: ontologies according to which there are individuals and only individuals (and are therefore no properties).⁷

Platonic ontologies: ontologies according to which there are both individuals and properties, and properties are without causal powers (or: 'properties do not enter into causal relations').

⁴ Lowe (2006). The quoted passage occurs on p. 15.

⁵ And, I would suppose, everyone who holds that individuals are 'bundles of universals' must believe that universals can be perceived: the whole purpose of the 'bundle theory' is to provide an account of individuals according to which they do not contain an unperceivable ontological constituent.

⁶ In this essay alone. In other essays I have used the count-noun 'ontology' in other senses.

⁷ By a nominalistic ontology, I therefore mean what Michael Loux would call an *austere* nominalistic ontology. A *non-austere* or *luxuriant* nominalistic ontology – a luxuriant nominalism, for short – would be an ontology that denied the existence of universals but affirmed the existence of tropes (or whatever one chooses to call them): the referents of phrases like 'the wisdom of Solomon,' 'the rectangularity of central park,' and 'the aridity of Arizona' – phrases that denote properties of Solomon, Central Park, and Arizona, respectively, and which do *not* denote properties of the Twin Earth counterparts of those objects. In my taxonomy of ontologies, a luxuriant nominalism is an aristotelian ontology. (Luxuriant nominalisms, of course, lay claim to the title 'nominalism' on the ground that they entail that everything is a particular.) It may be that there is only one nominalistic ontology: nominalism *tout court*, nominalism *simpliciter*, the ontology whose central thesis is that there are individuals and only individuals. If there are distinct nominalistic ontologies, they are individuated by their different and incompatible accounts of what it is for something to be an individual.

Aristotelian ontologies: ontologies according to which there are properties and properties have causal powers and enter into causal relations.

Aristotelian ontologies may be divided into those that are monocategorical and those that are polycategorical.⁸ (Of course nominalistic ontologies are also monocategorical ontologies, and all platonic ontologies are polycategorical ontologies.) I know of only two examples of monocategorical aristotelian ontologies:

- The ‘New Bundle Theory,’ invented by – but by no means endorsed by – James Van Cleve: there exist only properties (and these properties have no fusions or mereological sums; individuals – including adherents of the New Bundle Theory – do not exist).⁹
- The ontology that is being worked out by L. A. Paul: there exist only properties (but the members of any non-empty set of properties have a fusion; the fusion of any set of properties is itself a property; among the various fusions of properties are individuals – like L. A. Paul; thus certain objects that traditional ontologies would place in other categories than ‘property’ do exist, but, whatever else they may be, they are one and all members of the only ontological category there is,¹⁰ the category ‘property’).¹¹

My primary concern in this essay is not with these monocategorical aristotelian ontologies but with polycategorical aristotelian ontologies, and with the contrast between those ontologies and polycategorical ontologies of the other kind, namely the platonic ontologies.

Polycategorical aristotelian ontologies are the most important of the ontologies that Wolterstorff and Loux have called *constituent* ontologies.¹²

⁸ These terms seem to imply that things fall into various ‘ontological categories’ – a category that comprises individuals, it may be, or a category that comprises properties. I endorse the implication. (I note that, although almost all metaphysicians who accept the existence of both individuals and properties would take it for granted that nothing is both an individual and a property, this seemingly obvious thesis is not universally accepted: L. A. Paul’s ontology represents individuals – what *I* am calling individuals – as certain very complex properties.) A monocategorical ontology, then, is an ontology that recognizes only one *primary* ontological category: only one ontological category that is not a proper subcategory of some other ontological category; and a polycategorical ontology is an ontology that recognizes more than one primary ontological category. (Note that the concept of a primary ontological category does not rule out overlapping primary categories.) In the present essay, I will not attempt to define ‘ontological category.’ For a proposed definition, see van Inwagen (2012), reprinted in van Inwagen (2014: 183–201).

⁹ Van Cleve (1985).

¹⁰ At any rate, the only ‘primary’ ontological category there is (see note 8): if there are other ontological categories, they are subcategories of ‘property.’

¹¹ The earliest statement of Paul’s ontology was in Paul (2002) (reprinted in Rea 2008). More recent statements of the ontology can be found in Paul (2012a) and (forthcoming). There are useful summaries of the ontology in Paul (2006a) and (2006b).

¹² See Wolterstorff (1970a) and Loux (2006a).

And platonic ontologies (polycategorical, one and all) are just exactly those that Wolterstorff and Loux have called *relational* ontologies. The concepts ‘constituent ontology’ and ‘relational ontology’ are best explained in terms of the concept of ontological structure (which, by an odd coincidence, is the central topic of this chapter).

Let us say that a relation is *broadly mereological* if it is either the part–whole relation or is in some vague sense ‘analogous to’ or ‘comparable to’ the part–whole relation. And let us say that a *constituent* of an individual (in the sense of ‘individual’ set out above) is either one of its parts or an object that is not, in the strict sense, one of its parts, but nevertheless stands in some broadly mereological or *part-like* relation to it.

Let us say that to specify the *mereological structure* of an individual (in the sense of ‘individual’ set out above) is to specify the other individuals, if any, that are its parts in the strict and mereological sense – to specify all the individuals bear the part–whole relation to it – and perhaps to say something about how those other individuals stand to one another in respect of certain relations thought to be ‘structure relevant’ (spatial relations, it may be, or causal relations). And let us say that to specify the *ontological structure* of an individual is to specify the non-individuals that bear some broadly mereological relation to it.¹³

A relational ontology is a polycategorical ontology (one of whose primary categories is ‘individual’ or something in the ontological neighborhood, something to very much the same ontological purpose: ‘substance,’ perhaps, or ‘particular’ or ‘concrete object’) that implies that individuals have no ontological structure – that implies that individuals are, in Armstrong’s terminology, blobs. (This is a feature that relational ontologies share with nominalistic ontologies – for, of course, if there are only individuals, then any part or constituent of an individual is an individual.) According to any relational ontology, the only structure individuals have is good, old-fashioned everyday structure: *mereological* structure.¹⁴

A constituent ontology, like a relational ontology, includes ‘individual’ in its inventory of ontological categories. But, unlike relational ontologies, constituent ontologies imply that individuals have an ontological structure: they have constituents (perhaps parts in the strict sense, perhaps not) that do not belong to the category ‘individual.’

¹³ I stipulate that to say, e.g., ‘No non-individual bears any broadly mereological relation to Catherine the Great’ is not to ‘specify the non-individuals that bear some broadly mereological relation to Catherine the Great.’

¹⁴ Unless, perchance, the ‘relationist’ thinks that some individuals are ‘extended simples’; someone who holds this view may want to say that extended individuals have no mereological structure but do have a spatial or spatiotemporal structure.

The so-called bundle theory (*sc.* of the nature of individuals) can serve as a paradigm of a constituent ontology – provided that we suppose the bundle theory to imply that there really *are* bundles of properties (that is, bundles of universals) and that something is a bundle of properties if and only if it is an individual. And provided, too, that we suppose that the bundle theory assigns bundles of properties (on the one hand) and properties *tout court* (on the other) to distinct and non-overlapping ontological categories. That is, only those versions of the bundle theory that do not treat apparent singular reference to and singular quantification over ‘bundles of properties’ as a disguised form of plural reference to and plural quantification over properties are examples of a constituent ontology. And only those versions of the bundle theory that do not treat bundles of properties as themselves properties are examples of a constituent ontology. By ‘the bundle theory’ I thus mean what might be called the standard-or-garden-variety bundle theory, the *classical* bundle theory, and not Van Cleve’s New Bundle Theory or Paul’s ontology. The classical bundle theory is a constituent ontology for the simple reason that it implies that individuals have constituents – properties or universals – that do not belong to the category ‘individual.’ And, obviously, if an ontology implies that individuals have ‘bare particulars’ as constituents, that ontology too will be a constituent ontology. But almost all constituent ontologies imply that among the ontological constituents of individuals are properties (although those properties may be tropes rather than universals). And, of course, any ontology according to which individuals have properties as constituents will identify the important relation that is variously called ‘having’ or ‘exemplifying’ or ‘instantiating’ – the most salient of the relations that Solomon bears to wisdom, Central Park to rectangularity, and Arizona to aridity – with constituency.¹⁵ That is, any such theory will imply that the properties that an individual *has* (or exemplifies or instantiates) are exactly those that are its constituents: ‘the individual x has the property F’ is equivalent to ‘the property F is a constituent of the individual x .’

My own favored ontology can serve as an example of a relational ontology.¹⁶ According to this ontology, members of the primary category that can be variously called ‘substance,’ ‘concrete object,’ ‘individual,’ and

¹⁵ More exactly, any such theory will identify an *individual’s* having a property with that property’s being a constituent of that individual. But, if individuals have properties, it is hard to see how it could be that properties do not have properties. If properties indeed have properties, then constituent ontologies face the problem of explaining the relation between the use of the phrase ‘has the property’ in the statement ‘This apple has the property redness’ and its use in statements like ‘Redness has the property instantiation’ and ‘Redness has the property “being a spectral-color property”.’ I do not mean to imply that this problem is insoluble – or even particularly difficult.

¹⁶ My ‘favored ontology’ is not the ontology of material things that was set out in my book *Material Beings*. It is, rather, the much more abstract and general ontology I described in van Inwagen 2006

‘particular’ are without ontological structure. Such structure as a dog (for example) has is the structure that supervenes on its parts (cells, electrons) and their spatial and causal relations to one another; and every part of a dog or any other individual is itself an individual, a member of the primary ontological category ‘individual.’ This must be, for (the Favored Ontology contends) everything that is not an individual is a member of the primary ontological category ‘relation’ (this category comprises propositions or o-adic relations, properties or monadic relations, and proper relations: dyadic relations, triadic relations, . . . , and variably polyadic relations¹⁷). And relations are *abstract objects*: necessarily existent, non-physical, and non-spatial things. Being necessarily existent, non-physical, and non-spatial, abstract objects cannot enter into causal relations: an abstract object can be neither agent nor patient.

Now if properties, like propositions and proper relations, are abstract objects, there is no possible sense of ‘constituent’ in which a property can be a constituent of an individual like a boulder or a dog. Consider, for example, my dachshund Jack and the property xenophobia – that is, aggressive hostility toward any living thing that one has not been properly introduced to. Xenophobia is certainly one of Jack’s properties (and it is certainly a universal, since he shares it with his little life-partner, my other dachshund, Sonia), but it is in no possible sense one of his constituents. For the proponent of the Favored Ontology, the dyadic relation ‘having’ that Jack and Sonia each bear to the property xenophobia is as abstract and ‘external’ as the variably polyadic relation ‘being numbered by’ that they enter into with the number 2.

According to the Favored Ontology, a property or attribute is something that one ascribes to an object by saying something about it; xenophobia, for example, is what one ascribes to something by saying that it’s a xenophobe. The attribute xenophobia – the thing I say about Jack or Hitler when I say of either of them that he’s a xenophobe – is, according to the Favored Ontology, an unsaturated assertible,¹⁸ to be contrasted with a saturated assertible or proposition (the proposition that there are xenophobes, for

(reprinted in van Inwagen 2014: 153–82). I concede that in that essay I did not explicitly state that properties (or, more generally, relations) constitute an ontological category, for my primary concern was with the question whether there *were* properties and relations. But the idea that ‘substance’ and ‘relation’ were the two primary ontological categories is certainly tacitly present throughout ‘A Theory of Properties.’

¹⁷ That is, relations that be entered into by m things *and* by n things, where m and n are distinct numbers. Such relations are expressed by open sentences containing plural variables – ‘the x s are fellows of the same college,’ for example, or ‘ x numbers the y s.’

¹⁸ My use of this term (in the essay cited in note 16) has caused some confusion. Observing, correctly, that I have borrowed it from Frege (the German word is *ungesättigt*), some of the readers of that

example). An attribute may be said to stand to a sentence in which one variable is free as a proposition stands to a closed sentence. Saturated and unsaturated assertibles – propositions on the one hand, and attributes and proper relations on the other – are much alike in many respects. Both are necessarily existent things to which spatial, temporal, and causal concepts – and the concept ‘constituent of an individual,’ as well – have no application. (And what does ‘has no application’ mean in this context? Well, here’s an example that may serve as a model for what I am trying to express by using this phrase. Johnny’s algebra teacher asks him to ‘extract’ a cube root; he requests a forceps to use in this operation. His request, you will probably concede, is ill informed: the extraction of a cube root is an operation to which the concept of a physical extracting tool has no application. It ought to be as evident that there is no sense of ‘constituent’ in which unsaturated assertibles are constituents of individuals as it is that there is no sense of ‘extraction’ in which a physical tool can be of use in the extraction of a cube root.)

A second example of a relational ontology is provided by David Lewis’s ontology of properties (what he calls ‘properties,’ and not what he calls ‘universals’).¹⁹ According to Lewis, a property is a set of possible objects. (Something is a property if and only if it is a set all of whose members are possible objects.) The property of being a pig or porcinity, Lewis says, is simply the set of all possible pigs – a set far larger than the set of actual pigs. Consider an actual pig, Freddy. Freddy of course has porcinity. And what is this relation ‘having’ that holds between the pig and the property? Why, simply set-membership. And the relation that a set of possibilities bears to its individual members is certainly not constituency. Freddy is no doubt

essay have inferred, incorrectly, that my use of the term implies that I accept something resembling Frege’s concept/object distinction: a property/object distinction modeled on the concept/object distinction. Far from it, however, for I do not understand the concept/object distinction. The objects I call properties are just that: objects. More exactly, they are objects in the very general sense that this word has in logic and mathematics: a property can be the referent of a noun or a noun-phrase (‘wisdom’; ‘Solomon’s most famous property’; ‘the property of being an x such that x is wise’) and properties can be ‘quantified over’ (‘Some properties are uninstantiated’; ‘An impossible property entails every property’); and when we quantify over properties we use the same logical machinery that we use when we quantify over shoes and ships and bits of sealing wax and cabbages and kings. (If one maintains that we do not use the same logical machinery in both cases, one must tell some ‘story’ that accounts for the obvious logical validity of many arguments that involve an intimate mixture of quantification over individuals and quantification over properties – arguments like: ‘Every living organism has some properties that are properties of all inanimate objects; There is a property that is a property of some living organisms; hence, If no inanimate object is a living organism, there is a property that is a property of every inanimate object and of some things that are not inanimate objects.’ I am happy not to have to tell such a story.)

¹⁹ See D. Lewis (1986a: 50–69).

in some sense a constituent of the set of all possible pigs – ‘constituent’ is a very flexible word, and it is probably flexible enough to permit that application – but there is no conceivable sense in which the set of all possible pigs is a constituent of Freddy.

Let this suffice for an account of ‘constituent ontology’ and ‘relational ontology.’²⁰

I will now give some reasons for preferring a relational to a constituent ontology – reasons for repudiating the idea of ontological structure. The nominalists, of course, will want to remind me that relational ontologies are not the only ontologies that deny the reality of ontological structure. A nominalist might remind me of this fact by a making a speech along these lines: ‘The picture we nominalists have of individuals is identical with your picture of individuals: we, like you, see them as what Armstrong calls blobs.’ And this reminder would be perfectly correct. But in this essay, my topic is constituent ontologies, not nominalism.²¹ I could rephrase my description of my project this way: to put forward reasons for repudiating the idea of ontological structure *given that there are properties or attributes*.

My principal reason for repudiating the idea of ontological structure is a reason *I* have for repudiating this idea, but it is not one that I can expect anyone else to share. This reason is a very straightforward one: I do not understand the idea of ontological structure or, indeed, any of the ideas with which one finds it entwined in the various constituent ontologies. I do not understand the words and phrases that are the typical items of the core vocabulary of any given constituent ontology. ‘Immanent universal,’ ‘trope,’ ‘exist wholly in,’ ‘wholly present wherever it is instantiated,’ ‘constituent of’ (said of a property and an individual in that order): these are all mysteries to me. Perhaps the greatest of all these mysteries – the one most opaque to my understanding – is the kind of language that is used when quantities with numerical measures are said to be among the constituents

²⁰ Consider the thesis (‘existential uninstantiationism’) that properties can exist uninstantiated, and the thesis (‘existential instantiationism’) that properties cannot exist uninstantiated. Advocates of relational ontologies tend to be existential uninstantiationists, and advocates of constituent ontologies tend to be existential instantiationists. But it is at least possible consistently to accept both a relational ontology and existential instantiationism, and it may even be possible consistently to accept both a constituent ontology and existential uninstantiationism. For that reason, I decline to regard existential instantiationism as essential to the idea of a constituent ontology, and I decline to regard existential uninstantiationism as essential to the idea of a relational ontology. Similar remarks apply to the question whether properties are ‘sparse’ or ‘abundant.’ Advocates of relational ontologies tend to hold that most open sentences (all of them but a few Russellian monsters) express properties, and advocates of constituent ontologies tend to hold that very few open sentences express properties. But I think that these tendencies are only tendencies, and that both can be resisted without contradiction.

²¹ For my reasons for rejecting nominalism, see van Inwagen (2006).

of individuals. The following passage from *On the Plurality of Worlds* is a good example of such language. (In this passage Lewis is expounding a theory that, although he stops short of endorsing it, is for him a living option. He certainly does not think that the words in which he expounds that theory are meaningless. Note that the ‘universals’ referred to in this passage are not ‘Ludovician properties’: they are immanent universals, not sets of possible objects.)

[C]onsider two particles each having unit positive charge. Each one contains a non-spatiotemporal part corresponding to charge. [It is a universal] and the same universal for both particles. One and the same universal recurs; it is multiply located; it is wholly present in both particles, a shared common part whereby the two particles overlap. Being alike by sharing a universal is ‘having something in common’ in an absolutely literal sense. (D. Lewis 1986a: 64)

Such talk bewilders me to a degree I find it hard to convey. Perhaps I can ‘evoke the appropriate sense of bewilderment’ by quoting a passage from a referee’s report I wrote a few years ago. (I should say that I was not recommending that the editor reject the paper under review because I thought that core vocabulary of the author’s ontology was meaningless; I was rather trying to convince the editor that the ideal referee for the paper was not someone who, like me, thought that that vocabulary was meaningless.)

The author contends that the “features” of an electron (the electron’s mass, charge, and spin are the examples of its features the author cites) are “constituents” of the electron. I don’t care who says this – not even if it’s David Lewis – it just doesn’t make any *sense*. Consider the case of mass. Let Amber be a particular electron. Amber’s (rest) mass is $9.11 \times 10 \text{ exp} - 31 \text{ kg}$. (I’ve rounded the figure off to two decimal places; pretend I’ve written out the exact figure.) If ‘ $9.11 \times 10 \text{ exp} - 31 \text{ kg}$ ’ is a name of something (if the ‘is’ of the previous sentence is the ‘is’ of *identity*), it’s a name of an abstract object. (And if ‘ $9.11 \times 10 \text{ exp} - 31 \text{ kg}$ ’ *isn’t* a name of anything – if it is, as Quine liked to say, a syncategorematic phrase – or if it is a name of something but is not a name of Amber’s mass, why would anyone suppose that ‘Amber’s mass’ is a name of anything? It looks to me as if either ‘Amber’s mass’ and ‘ $9.11 \times 10 \text{ exp} - 31 \text{ kg}$ ’ are two names for one thing, or ‘Amber’s mass’ isn’t a name for anything; there just isn’t anything for ‘Amber’s mass’ to name other than $9.11 \times 10 \text{ exp} - 31 \text{ kg}$.²²) You can perform *arithmetical operations* on this object, for goodness’ sake. You can divide it by a number, for example

²² This parenthesis is one illustration among many possible illustrations of a very general point about the semantics of physical-quantity terms. Consider, for example, what is perhaps the simplest case of a physical quantity: distance (or length or displacement). The two putative denoting phrases ‘the

(if you divide it by 6, the result is $1.518 \times 10 \exp - 31$ kg), and you can multiply it by another physical quantity (if you multiply it by 10 m/sec/sec , which is the magnitude of an acceleration, the result is $9.11 \times 10 \exp - 30$ kg-m/sec/sec). These “results” have other names. Other names for the first result are ‘one-sixth the rest mass of an electron’ and ‘the amount Amber’s mass would increase by if Amber were accelerated to half the speed of light from rest.’ Another name for the second result (if Amber is near the surface of the earth) is ‘the magnitude of the gravitational force (in the direction of the center of the earth) that the earth is exerting on Amber’ – since 10 m/sec/sec is the magnitude of the acceleration toward the center of the earth of a body (near the surface of the earth and in free fall) that is due to the earth’s gravity.

Performing calculations like the ones I performed to get those results is what solving the problems in physics textbooks largely consists in: applying arithmetical operations like multiplication and division to items like masses, charges, and spins.²³ I can attach no sense to the idea that something one can apply arithmetical operations to is a “constituent” of a physical thing.

And, I contend, what goes for ‘quantitative’ immanent universals like mass and charge goes for ‘non-quantitative’ immanent universals like color universals and shape universals. Since these universals are non-quantitative, I cannot, in trying to describe the bewilderment I experience when I try to understand what their proponents have said about them, complain that they are objects that one can apply arithmetical operations to. The bewilderment I experience arises when I try to form some conception of what immanent universals could *be*. I can see that they are not what I call properties – not things that stand to one-place open sentences as propositions stand to closed sentences. Not things that are like propositions in that the concepts ‘truth’ and ‘falsity’ apply to them, and unlike propositions in that they are not true or false *simpliciter* but are rather true of false *of* things – true, perhaps, of this thing and not of that thing. I can see that they can’t be properties (what I call properties) because, if for no other reason, they are supposed to have some sort of presence in the physical world: they can be constituents of physical things and can be located in space (albeit their spatial features are strikingly different from those of individuals, the paradigmatic space-occupiers). But if not properties, *what?* The features

equatorial diameter of the earth’ and ‘ $1.276 \times 10 \exp 7 \text{ m}$ ’ are either both real denoting phrases and denote the same thing *or* are both syncategorematic.

²³ Or one might want to say that applying arithmetical operations like multiplication and division to items like masses, charges, and spins is the typical *final stage* of finding the solution to a physics problem. (In the earlier stages, one generally has to engage in some mathematical reasoning that involves techniques rather more ‘advanced’ than multiplication and division; the purpose of this reasoning is to reach the point at which one can find the answer to the problem by applying simple arithmetical operations to the particular physical quantities that were specified in the statement of the problem.)

attributed to immanent universals by those who believe in them seem to me be an impossible amalgam of the features of individuals and the features of attributes. I must make it clear that when I say these things, I do not pretend to be presenting an argument. What I am presenting is rather a confession. Just as a confession of faith – someone's recitation of the Nicene Creed, for example – is not a presentation of an argument for the thesis that anyone other than the speaker should accept the propositions the confession comprises, a confession of bewilderment is not a presentation of an argument for the thesis that anyone else should be bewildered by whatever it is that the speaker finds bewildering.

What goes for immanent universals goes for tropes. I don't understand what people can be talking about when they talk about those alleged items. I will attempt, once more, to evoke the appropriate sense of bewilderment.

Consider two tennis balls that are perfect duplicates of each other. Among their other features, each is 6.7 centimeters in diameter, and the color of each is a certain rather distressing greenish yellow called 'optical yellow.' Apparently, some people understand what it means to say that each of the balls has its own color – albeit the color of one is a perfect duplicate of the color of the other. I wonder whether anyone would understand me if I said that each ball had its own diameter – albeit the diameter of one was a perfect duplicate of the diameter of the other. I doubt it. But one statement makes about as much sense to me as the other – for just as the diameter of one of the balls *is* the diameter of the other (6.7 centimeters), the color of one of the balls *is* the color of the other (optical yellow).

On that point, the friends of immanent universals – those who are not also friends of tropes – will agree with me. Setting to one side the fact that it is difficult to suppose that they and I mean the same thing by 'property,' they and I agree that one property, such as 'optical yellowness' or the color optical yellow (as far as I can see, 'optical yellowness' and 'the color optical yellow' are two names for one thing), may be a property of two individuals, such as two tennis balls; they and I disagree about what it is for a property to be a property *of* a given individual. The friends of immanent universals spell this out in terms of constituency, and I don't spell it out at all – nor do I have any sense of what it would be to *spell out* what it is for a given property to belong to a given object or objects. Those of you who are familiar with a controversy I had with David Lewis a long time ago will see that we have wandered into the vicinity of what I once called 'the Lewis–Heidegger problem.'²⁴ The Lewis–Heidegger problem may be framed as a question: 'How does a certain concrete object, a certain individual (an optical yellow

²⁴ In van Inwagen (1986: 204ff.).

tennis ball, for example) reach out and take hold of a certain abstract object, a certain proposition (the proposition that at least one individual is optical yellow in color, for example), and make it *true*?' The question, 'How does a concrete object (like an optical yellow tennis ball) reach out and take hold of a property (like the color optical yellow), an abstract object, and make it *had* or *exemplified* or *instantiated*?' is at least a very similar question. (It could be regarded as a generalization of the former question – a generalization based on the fact that propositions are true or false *simpliciter* and properties are true or false *of things*.) In my opinion, these questions have no answers: no meaningful statement among all possible meaningful statements counts as an answer to either of them. And if that is so, the questions are meaningless: 'The *riddle* does not exist. If a question can be put at all, then it *can* also be answered.'

I am experienced enough to know that there are philosophers who take offense when you tell them that what they are saying is meaningless or that they are proposing answers to questions that have no answers. I'll say what I have said many times: in philosophy, and particularly in metaphysics, the charge 'What you are saying is meaningless' should be no more offensive than the charge 'What you are saying is wrong.' Meaninglessness is what we *risk* in metaphysics. It's a rare metaphysical sentence that does manage to express a proposition and expresses a false one – and on those rare occasions on which a metaphysical sentence does do that ('The physical world has always existed' might be an example), that is generally because a metaphysician has encroached on someone else's territory. If my metaphysical writings contain meaningless sentences, and no doubt they contain a good many of them, that is simply because I'm doing my job – trying to work out a metaphysical position. If I weren't willing to risk saying and writing things that were, in Wolfgang Pauli's immortal phrase, *not even wrong*, I'd take up the history of philosophy.

Enough about my *principal* reason for rejecting constituent ontology in all its forms. I'll now say something about one of my ancillary reasons, a reason that is epistemological or methodological or something in that area. Bas van Fraassen, as many of you will know, is rather down on what he calls analytic metaphysics.²⁵ Most of the barbs he directs at 'analytic metaphysics' miss because they are based on misapprehensions or bad reasoning.²⁶ But one of them hits the mark squarely: I heartily applaud all

²⁵ See van Fraassen (2002: 1–30).

²⁶ So I say, at any rate. See van Inwagen (2007a) and my APA Central Division Presidential Address in van Inwagen (2009). The latter is reprinted in van Inwagen (2014: 31–49).

that van Fraassen says against those metaphysicians who ape the practice of scientists – or what they take to be the practice of scientists – by appealing to ‘the method of inference to the best explanation.’ If I had ever thought that there was a method called ‘inference to the best explanation’ that could be used as an instrument of metaphysical discovery (or which could be used to validate a metaphysical theory however it had been discovered), van Fraassen would have convinced me otherwise. But thank God I never have! I suspect, however, that use of this ‘method’ is widespread among those who construct constituent ontologies, and I suspect that at least some ‘relationists’ besides myself will find it as foreign to their way of thinking as I find it to mine. Let me try to flesh these intuitions of mine out – these intuitions about what has motivated the work that has led to the construction of constituent ontologies – by giving an example. The example is fictional, but, like many fictions, it has got some important bits of reality embedded in it.

A certain philosopher, Alice, sees, or thinks she sees, a certain metaphysical problem. She calls it, perhaps, the Problem of One over Many: How can *two or more* objects be in a perfectly good sense *one*, or in a perfectly good sense *the same* (one in color or of the same color, for example)? This Granny Smith apple and this copy of *A Theory of Justice* are both green. It follows that, in spite of the fact that they are two distinct things, they are one in color. How can we account for such facts? What metaphysical picture of the nature of individuals like apples and books can explain how individuals that are not the same *simpliciter* can nevertheless be the same *in a certain respect*? Obviously (Alice announces), the way to proceed is to explain this phenomenon in terms of individuals’ having certain *structures*, and in postulating some common item in the structures of numerically distinct individuals that are the same ‘in a certain respect.’ Now the kind of structure that Alice proposes to appeal to in giving an explanation of this sort obviously can’t be what I have called mereological structure, for in most cases in which an individual *x* and an individual *y* are the same in some respect, no individual – no atom, no neutron, no quark – is a part of both *x* and *y*. The kind of structure that will do the explanatory job that Alice wants done must therefore involve individuals’ having constituents that belong to some ontological category other than ‘individual.’ Alice therefore (let us suppose) makes a proposal regarding a common constituent of – to revert to our illustrative example – the apple and the book. She proposes, let us say, that both the apple and the book have among their constituents a certain *immanent universal*: an object that is wholly present wherever any of the individuals of which it is a constituent is present. She proposes, that

is, that the common *feature* of the book and the apple – what is ordinarily called greenness or the color green – is a common *constituent* of the book and the apple. And why should one believe in such a thing? Well (Alice contends), the theory that explains best describes best: if the postulation of such a common constituent is both a *prima facie* successful explanation of the sameness of color of numerically distinct individuals and superior to all other *prima facie* successful explanations of that *explanandum* (if there indeed are other *prima facie* successful explanations), that will be sufficient to warrant our believing that that constituent really exists. (Cf. the kind of warrant enjoyed by an early twentieth-century geneticist's belief in genes or by Einstein's belief in the effect of the presence of mass on the local metric of space-time.)

So Alice proceeds. Before we take leave of her, let us allow her to summarize what she claims to have achieved by proceeding in this way: 'I have solved a metaphysical problem – I have explained how individuals that are not the same (that are numerically distinct) can nevertheless be the same in a certain respect – and, in doing so, I have made a contribution to ontology: I have provided a good reason for supposing that a certain ontological category exists (that is, has members, is non-empty). I have, moreover, demonstrated an important truth about the way in which the members of this category – “immanent universal” – are related to the members of another category, “individual.”'

I am happy to concede that the story of Alice – which was put forward as a parabolic representation of the philosophical method that gives rise to constituent ontologies – is not only fictional but a caricature. I could hardly present anything other than a caricature of a philosophical method in such a brief compass. But I do think it is a caricature that is not utterly divorced from the actual practice of many metaphysicians. I don't suppose that I shall succeed in convincing anyone who is not already inclined to agree with me that Alice's use of 'inference to the best explanation' is a bad method for metaphysics. In my judgment, it can lead only to quasi-scientific theories that (supposing that the words in which they are framed mean anything at all) fail to explain what they were supposed to explain. (I distinguish quasi-science from pseudo-science. A pseudo-scientific theory like astrology makes empirical predictions; a quasi-scientific theory does not.) When I say that Alice's theory fails to explain what it is supposed to explain, I do not mean that someone else may eventually devise a theory that explains what her theory has failed to explain. I mean rather that there's nothing there to be explained, that no set of statements among all possible sets of statements counts as an explanation of what it is for an individual to have a property or for two individuals to have the same

property.²⁷ (I am, you see, what Armstrong would call an ostrich nominalist – or would be but for the fact that I am not a nominalist. Perhaps I am an ostrich platonist.) And I would say more or less the same thing about any metaphysical theory that presents itself as an explanation of some phenomenon: assuming that that phenomenon exists at all,²⁸ it will not be a thing that it makes any sense to speak of explaining.²⁹

And what does the Favored Ontology have to say about the common properties of individuals? I'll answer this question by setting out what I have to say about the common properties of individuals, for I am the only proponent of the Favored Ontology I am aware of.

I do believe that there is an object I call 'the color green.'³⁰ And, of course, I think that the color green or the property greenness is exactly what all green individuals have in common, and I of course think that they share this thing that they have in common with no non-green individual. But I should never want to say that the fact that greenness was a property of both the apple and the book explained the fact that they were both green or the fact that they were both of the same color. In my view that would be as absurd as saying that the fact that the proposition that the book and the apple are both green is *true* explained the fact that the book and the apple were both green. ('Daddy, why is the sky blue?' 'Well, sweetheart, that's because the proposition that the sky is blue is true.' 'Oh, Daddy, how wise you are!') I do think that there are such things as propositions, and I do think that they have the properties truth and falsity, and I do think that ascribing these properties to propositions plays an important and indispensable role

²⁷ That is, no possible set of statements is an explanation of these things that is of the kind that constituent ontologies claim to provide. But the fact that the book and the apple are both green could have other kinds of explanation. It is no doubt possible to construct a causal narrative that explains how the book got to be green and no doubt possible to construct a causal narrative that explains how the apple got to be green. And those two narratives, taken together, would, in one sense, explain the common greenness of the book and the apple. Again, it may well be possible to identify certain physical features of the surfaces of objects of a certain sort, a 'sort' that contains things like apples and books, such that for a thing of that sort to be green *is* for it have a surface with those features – and possible to identify a corresponding set of surface-features of objects of the book-apple sort for each color. If those things were accomplished, one could, in one sense, give an account what it is for distinct objects of that sort to be of the same color.

²⁸ The phenomenon that Alice set out to explain is uncontroversially real; at any rate, it is uncontroversially true that there are green individuals that have no individual as a common part. (Which is not to say that *no* philosopher has denied its reality: 'One cannot conceive anything so strange and so implausible that it has not already been said by one philosopher or another.') But the reality of many of the alleged phenomena for which metaphysicians have proposed explanations is more controversial: synthetic propositions known *a priori*, uncaused free choices, temporal passage. . .

²⁹ For an able defense of the contradictory of this thesis, see Paul (2012b).

³⁰ At any rate I think that there are attributes or properties, and I'm willing to suppose for the sake of the present example that greenness or the color green is one of them; but the physics and physiology of color are subtle and difficult, and the metaphysics of color must take account of the subtleties and difficulties that the special sciences have discovered.

in our discourse. (For example: ‘No false proposition is logically deducible from a set of true propositions’ and ‘If q is logically deducible from a set of statements that includes p and all of whose members other than p are true, then the conditional whose antecedent is p and whose consequent is q is true’ are fairly important logical principles.) But the concept of the truth of a proposition can play only a ‘logical’ role in an explanation of why some state of affairs obtains: the concept of truth can figure in an explanation only in the way in which concepts like logical deducibility and universal instantiation and transitivity can figure in an explanation. And the same point holds, *mutatis mutandis*, for the concept of the instantiation of a property.

‘Well, then,’ the interlocutor asks, ‘what method *do* you recommend in ontology, if not the method of constructing theories to explain observed phenomena? And what has this method you would recommend got to do with your adherence to a relational ontology?’

The answer to the first part of this question is complex, but fortunately I have presented it elsewhere – and in some detail (see, for example, van Inwagen 2006). Stripped to the bare bones, the method is this:

Look at all the things that you who are attempting to construct an ontology believe ‘outside’ ontology – the beliefs that, as it were, you *bring to* ontology. Subject them to quantificational analysis à la Quine. This will provide you with a large number of one-place open sentences that you believe are satisfied. Try to give a coherent account of the ‘satisfiers’ of those sentences, a project that will, in some cases, involve fitting them into a system of ontological categories. See whether the resulting system of categories satisfies you intellectually. Subject it to all the dialectical pressures you can muster – and attend to the dialectical pressures those who disagree with you bring against it. As you are carrying out these tasks, keep the following methodological rules of thumb in mind (and remember that they are only rules of thumb, not infallible guides to the truth):

- Suppose you contend that certain objects (which you have somehow specified) form or make up or constitute an ontological category – call it ‘category X’; remember that every object has, for every property, either that property or its complement: everything has a complete and consistent set of properties; and that obvious truth must apply to the members of X; if what you have said about X leaves it an open question whether certain specifiable members of X have the (intrinsic and metaphysically significant³¹) property F, you have probably not said enough about X.

³¹ A hard qualification to make precise. Obviously I am not telling the advocates of the existence of tropes that there is a serious lacuna in their theory of tropes if it does not include or imply an answer to the question, ‘Are tropes the same objects as the *formae accidentales* of Duns Scotus?’ A similar point applies to ‘the two putative denoting phrases A and B’ in the rule that follows.

- Suppose you contend that certain objects (which you have somehow specified) constitute an ontological category – call it ‘category X’; suppose that what you have said about X implies that each of the two putative denoting phrases A and B denotes a member of X; ask yourself whether A and B denote the *same* member of X; if what you have said about X leaves this an open question, you have probably not said enough about X.
- Do not multiply categories beyond dire necessity.
- Try to tie all your terms of art to ordinary language by some sort of thread that can be followed; for a good guide in this matter, look at any reputable introductory physics text, and learn from the way in which, starting with ordinary language, the author introduces technical terms like ‘mass’ and ‘force’ and ‘energy’ and ‘momentum.’

And, finally, don’t be seduced by anything like ‘the Quine–Putnam indispensability argument.’ (This imperative doesn’t get a bullet point because it’s not a rule of thumb. This imperative is an *injunction*.) If, for example, your analysis of scientific discourse convinces you that quantification over – say – the real numbers is an indispensable component of the practice of scientists, don’t go on to maintain that the undoubted fact that science has been ‘successful’ is *best explained* by postulating the existence of the real numbers. Stay *out* of the explanation business. Here endeth the lesson.

As to the second part of the interlocutor’s question (‘What has the method you recommend got to do with your adherence to a relational ontology?’), I have no good answer. I can do no more than record my conviction that if you follow the method I recommend, you will end up with neither a monocategorical ontology (a nominalistic ontology or a ‘properties only’ ontology like the New Bundle Theory or the ‘Pauline’ ontology) nor a constituent ontology. I think you will end up with a relational ontology (if you end up with anything at all; perhaps you will confess failure). But I should not regard it as a tragedy if someone were to demonstrate that this conviction was wrong. If some philosopher showed me how to eliminate quantification over properties (and, more generally, over abstract objects) from our discourse – an achievement that would in my view make the world safe for nominalism – I’d be delighted, for I’d really *like* to be a nominalist. And if a philosopher adopted my proposed method and ended up with a constituent ontology or an aristotelian ontology of some other kind – well, if I didn’t find that outcome delightful, I’m sure I should find it instructive: I should almost certainly learn something valuable by retracing the intellectual steps that had led that philosopher to that result. In any case, whatever you end up with, it won’t be an explanatory theory. Explanatory theories belong to everyday empirical investigation

(the investigations of police detectives, for example) and to the empirical sciences. What you can *hope* to end up with is an ontology that it is plausible to suppose is the ontology that we tacitly appeal to in our everyday and our scientific discourse.³²

³² This chapter is a deep revision of my earlier paper 'Relational *vs.* Constituent Ontologies,' which appeared in John Hawthorne and Jason Turner (eds.), *Philosophical Perspectives*, vol. 25: *Metaphysics* (Malden, MA: Wiley-Blackwell, 2011), pp. 389–45. Although there is much new material in the present chapter, a significant proportion of the material in the two versions is the same – although much of the 'old' material has been extensively revised and rewritten. The structure of the present chapter is different from the structure of its predecessor. I believe that the way the present chapter is structured makes better logical sense. This restructuring has resulted in some differences between the technical terminology of the two essays.