

## RELATIONAL *vs.* CONSTITUENT ONTOLOGIES

Peter van Inwagen  
The University of Notre Dame

In a companion piece to this essay, an essay entitled “What is an Ontological Category?”,<sup>1</sup> I have tried to give an account of the concept of an ontological category, and I have suggested that ontology is the discipline that attempts to answer Quine’s “ontological question” — ‘What is there?’ — in terms of a system of ontological categories. And I have suggested that *an* ontology is any given such attempt at an answer.<sup>2</sup> Very roughly speaking, in that essay I have defended the view that there are natural classes — classes whose boundaries are not simply matters of arbitrary convention — and I have contended that the ontological categories are natural classes that are in a certain sense very “high” or very comprehensive.

In the present essay, I’m going simply to assume that we have some sort of intuitive grasp of these concepts — “natural class”, “ontological category,” “ontology” (mass term), and “ontology” (count-noun).

I will begin by presenting a classification of ontologies. (This classification ignores the fact that one way to divide ontologies is into “Meinongian” and “Non-Meinongian” ontologies. In the sequel, I will proceed on the assumption that existence and being are the same thing and that everything exists/is. I leave for another occasion the task of setting out a more general classification of ontologies, a classification that takes into account the fact that the Meinongian/non-Meinongian opposition is at least as important for the taxonomy of ontologies as is the relational/constituent opposition that is the focus of the present essay.)

The major division my proposed classification recognizes is a division of ontologies into *monocategorical* and *polycategorical* ontologies. A monocategorical ontology is an ontology that implies that there is only one primary ontological category — that there is only one ontological category that is not a subcategory of any other ontological category,—and that everything belongs to that category.<sup>3</sup> That is to say, a monocategorical ontology implies that the universal class is an ontological category. A polycategorical ontology, of course, implies that there are two or more primary categories.<sup>4</sup>

Here are some examples of monocategorial ontologies:

- “Austere” nominalism: there exist only concrete particulars.<sup>5</sup>
- 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; concrete particulars — including adherents of the New Bundle Theory—do not exist).<sup>6</sup>
- 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 concrete particulars — 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, whatever non-primary ontological categories they may belong to, they are one and all members of the only primary ontological category, the category “property”).<sup>7</sup>

I will give examples of polycategorial ontologies in connection with the subdivisions of that division. Polycategorial ontologies may be divided into *relational* and *constituent* ontologies.<sup>8</sup> This distinction — central to the present essay — is best explained in terms of the concept of “ontological structure.”

Let us say that a relation is *quasi-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 object is either one of its parts or some object that is not, in the strict sense, one of its parts, but stands in some quasi-mereological or part-like relation to it.

Let us say that to specify the *mereological structure* of an ordinary particular (substance, individual, concrete thing) is to specify the other ordinary particulars, if any, that are its parts in the strict and mereological sense — by saying which other ordinary particulars bear the part-whole relation to it —, and perhaps by saying something about how those other ordinary particulars 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 ordinary particular (etc.) is to specify the objects in any categories other than “concrete particular” that bear some quasi-mereological relation to it.

A relational ontology is a polycategorial ontology (one of whose primary categories is “concrete particular” or something in the ontological neighborhood, something to very much the same ontological purpose: substance, individual, concrete thing...) that implies that concrete particulars have no ontological structure — that implies that concrete particulars are, in Armstrong’s terminology, blobs. (This is a feature that relational ontologies share with austere nominalism.) According to any relational ontology, the only structure that

concrete particulars have is good, old-fashioned everyday structure: *mereological* structure.<sup>9</sup> A constituent ontology, like a relational ontology, includes “concrete particular” in its inventory of ontological categories. But, unlike relational ontologies, constituent ontologies imply that concrete particulars have an ontological structure: they have constituents (perhaps parts in the strict sense, perhaps not) that do not belong to the category “concrete particular.”

The so-called bundle theory (*sc.* of the nature of concrete particulars) 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, universals) and that something is a bundle of properties if and only if it is a concrete particular. 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 concrete particulars have constituents — properties or universals — that do not belong to the category “concrete particular.” And, obviously, if an ontology implies that concrete particulars have “bare particulars” as constituents or have “tropes” as constituents, that ontology too will be a constituent ontology. But almost all constituent ontologies imply that among the ontological constituents of concrete particulars are properties (although those properties may be tropes rather than universals). And, of course, any such ontology will imply that 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 — is intimately related to the idea of properties-as-constituents: the properties that a concrete particular *has* (or exemplifies or instantiates) are exactly those that are its constituents: ‘the concrete particular *x* has the property *F*’ is equivalent to ‘the property *F* is a constituent of the concrete particular *x*’.

My own favored ontology can serve as an example of a relational ontology.<sup>10</sup> According to this ontology, members of the primary category that can be variously called “substance,” “concrete thing,” “individual thing,” and “particular thing” are without ontological structure. Such structure as a particular thing like a dog 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 particular thing is itself a member of the primary category “particular thing.” This must be, for (the Favored Ontology contends) everything that is

not a particular thing is an abstract object or relation (a proposition, property, or proper relation). And there is no possible sense of ‘constituent’ in which an abstract object can be a constituent of a substance/concrete particular/individual thing. 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 something by saying a certain thing 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<sup>11</sup>, to be contrasted with a saturated assertible or proposition (the proposition that there are xenophobes, for 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 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 a concrete particular,” 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 concrete particulars 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’) — or, more exactly, by any ontology that includes what Lewis called ‘properties’ and which treats these Ludovician properties as forming a natural class.<sup>12</sup> 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 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.”<sup>13</sup>

I will now give some reasons for preferring a relational to a constituent ontology — reasons for repudiating the idea of ontological structure. The austere nominalists, of course, will want to remind me that we relational ontologists are not the only ones to repudiate the idea of ontological structure. An austere nominalist might remind me of this fact by a making a speech along these lines: “The picture we austere nominalists have of concrete particulars is identical with your picture of concrete particulars: we, like you, see them as what Armstrong calls blobs.” And this reminder would be perfectly correct. But in this essay, my target is constituent ontologies, not nominalism.<sup>14</sup> 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 universal and a particular 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 the constituents of concrete particulars are said to be physical quantities with numerical measures. 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.)

[Consider] 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. (p. 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 the 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  $9.11 \times 10 \exp -31$  kg. (I’ve rounded the figure off to two decimal places; pretend I’ve written out the exact figure.) If ‘ $9.11 \times 10 \exp -31$  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 ‘ $9.11 \times 10 \exp -31$  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 ‘ $9.11 \times 10 \exp -31$  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  $9.11 \times 10 \exp -31$  kg.<sup>15</sup>) You can perform *arithmetical operations* on this object, for goodness’ sake. You can divide it by a number, for example (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.<sup>16</sup> I can attach no sense to the idea that something one can apply arithmetical operations to a “constituent” of might be 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 the paradigmatic space-occupiers, concrete physical particulars). But if not properties, *what?* The features attributed to immanent universals by those who believe in them seem to me be an impossible amalgam of the features of substances 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 balls that are perfect duplicates of each other. Among their other features, each is 10 centimeters in diameter and the color of each is a certain rather distressing variant on lime green. Apparently, some people understand what it means to say that each of the balls has its own color — albeit the color of either 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 (10 centimeters), the color of one of the balls *is* the color of the other (that “rather distressing variant on lime green”).

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 greenness or the color green (as far as I can see, ‘greenness’ and ‘the color green’ are two names for one thing), may be a property of two particular things, such as two balls; they and I disagree about what it is for a property to be a property *of* a given particular. 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’.<sup>17</sup> The Lewis-Heidegger problem may be framed as a question: ‘How does a certain concrete object (a green ball, for example) reach out and take hold of a certain proposition (the proposition that there is at least one green ball, for example), an abstract object, and make it *true*?’ The question, ‘How does a concrete object (like a green ball) reach out and take hold of a property (like the color green), 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.

I am experienced enough to know that there are philosophers who take offence when you tell 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, a charge of meaningfulness should be no more offensive than a charge of falsity. 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 false*, 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.<sup>18</sup> Most of the barbs he directs at “analytic metaphysics” miss because they are based on misapprehensions or bad reasoning.<sup>19</sup> But one of them hits the mark squarely: I heartily applaud all 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 typical of constituent ontologists, and I suspect that at least some relational ontologists 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 ordinary particulars like apples and books can explain how particulars 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 particulars' having certain *structures*, and to postulate some common item in the structures of the members of every two-or-more-membered class of particulars 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 earlier called mereological structure, for the apple and the book have no concrete particulars as common parts — no atom or neutron or quark is common to them both. The kind of structure that will do the explanatory job that Alice wants done must therefore involve concrete particulars' having constituents that belong to some ontological category other than "concrete particular." 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 concrete particulars 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 particulars 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 in 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 achieved by proceeding in this way: "I have solved a metaphysical problem — I have explained how objects 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, ‘concrete particular’.”

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 claims; a quasi-scientific theory does not.) When I say that a theory like Alice’s fails to explain what it is supposed to explain, I do not mean that someone else may eventually devise a theory that explains what Alice’s 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 a particular to have a property or for two distinct particulars to have the same property.<sup>20</sup> (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 what does the Favored Ontology have to say about the common properties of concrete particulars? I’ll answer this question by setting out what I have to say about this matter, 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.’<sup>21</sup> And, of course, I think that the color green or the property greenness is exactly what all green objects have in common, and I of course think that they share this thing that they have in common with no non-green object. 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 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 have 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, the essay “A Theory of Properties,” cited in note 10.) Stripped to the bare bones, the method is this:

Look at all the things that you, the ontologist, 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 class 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 property F, you have not said enough about X.
- 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 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 (like austere nominalism) 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 abstract objects from our discourse — an achievement that would in my view make the world safe for austere nominalism —, I’d be delighted, for I’d really *like* to be an austere nominalist. And if a philosopher adopted my proposed method and ended up with a constituent ontology — 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 a constituent ontology. 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 a system of ontological categories that it is plausible to suppose is the system that we tacitly appeal to in our everyday and our scientific discourse.

I will close by turning briefly to a different topic, a possible objection to the classification of ontologies that I have proposed.

I have said that constituent ontologies are a species of the genus “poly-categorical ontology.” But at least two monocategorical ontologies — the New Bundle Theory and L. A. Paul’s ontology — pose a problem for my scheme of classification, for there is considerable intuitive plausibility to the thesis that they and the constituent ontologies together constitute a natural class and that a perspicuous taxonomy of ontologies should recognize this fact by placing those two monocategorical ontologies and the relational ontologies in the same genus. One might plausibly contend that the primary division in a taxonomy of ontologies should not be twofold (“monocategorical” and “polycategorical”) but threefold; something like this:

- (1) austere nominalism
- (2) relational ontologies
- (3) the New Bundle Theory; the “Pauline” ontology; constituent ontologies.<sup>22</sup>

The lines of division drawn by this alternative taxonomy, it will be observed, cut across the lines my taxonomy draws: my genus “monocategorical ontology” is composed of the member of (1) and some of the members of (3), and my genus “polycategorical ontology” is composed of the members of (2) and the remaining members of (3).

What can be said in favor of this alternative scheme of classification? *Why* does it seem that the ontologies grouped together in (3) form, as I put it, a natural class? Is there a common characteristic of the members of the third division that argues for their being grouped together? If there is such a common characteristic, is it of sufficient importance to outweigh the fact that some of the ontologies that share it are monocategorical and some of them polycategorical?

I can think of one characteristic common to the members of (3) that might provide an interesting answer to these questions. I have had a very instructive conversation with Professor Paul concerning the very different ways in which she and I conceive of properties. When I thought about what she had said in this conversation, it became clear to me that her conception of properties and the constituent ontologists’ conception of properties were, if not identical, then at least very similar, and very similar despite the fact that she and they disagree about the mode in which properties, so conceived, function as constituents of things.<sup>23</sup> I base this judgment on a supposed feature of properties — and a very significant feature it is — that is certainly common to Paul’s conception of properties and the constituent ontologists’ conception of properties. This common feature is nicely laid out in the following quotation 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.<sup>24</sup>

This passage occurs in the course of an argument for the conclusion that some properties must be accidents or tropes (Lowe’s term is “modes”) — for, in Lowe’s view, universals cannot enter into causal relations and therefore cannot be perceived. Unlike Lowe, Paul does think that some universals can be perceived. But Lowe and Paul agree that some *properties* can be perceived. Lowe is a constituent ontologist, and I think that all his fellow constituent ontologists would agree with him and Paul on this point — and that New Bundle Theorists, if there ever are any, *should* agree with him and Paul on this point.<sup>25</sup> And this, I suggest, is the “common characteristic” in virtue of which it is natural and

intuitive for the taxonomist of ontologies to assign Paul's ontology and the New Bundle Theory and the constituent ontologies to the same genus.

I have no space to develop this suggestion in detail, but I would suggest that anyone who thinks that my twofold taxonomy of ontologies is objectionable because it places the Pauline ontology and the New Bundle Theory in a different genus from the genus that contains the constituent ontologies should consider the following proposal: that the primary division of ontologies should be into

— those for which the only primary ontological category is “concrete particular” or “individual” or “ordinary object” or “substance” and which therefore deny the existence of properties or attributes. (This genus may have only one member, austere nominalism. Or it may turn out that “austere nominalism” is a species, a species whose members are individuated by their differing specifications of the one primary category.)

— those that affirm the existence of properties or attributes and treat properties as wholly abstract things to which the concepts of location and causation have no application (and which therefore cannot be objects of perception).

— those that affirm the existence of properties and affirm further that at least some properties are perceivable (and therefore have some sort of spatial location and are capable of entering into causal relations).

## Notes

1. To appear in Daniel Novotny (ed.) *Metaphysical Disputations: Contemporary Neo-Aristotelian Perspectives* — despite the fact that the “perspective” from which that essay is written was very far from being neo-Aristotelian.
2. Or, if you like, we may distinguish a strong and a weak sense of “an ontology” and say that a strong-sense ontology is an attempt to answer the ontological question in terms of a system of ontological categories. A weak-sense ontology will then be an attempt to answer the ontological question in a way that does not involve an appeal to a system of ontological categories. When Quine himself uses the word ‘ontology’ as a count-noun, he presumably uses it in only the weak sense; no doubt he would have vehemently rejected any proposal to introduce the concept “ontological category” into philosophy.
3. In this essay, I will assume, for the sake of simplicity, that everything is a member of at least one ontological category — that there are no “categorially homeless” things. The question whether there are or could be categorially homeless things is an important meta-ontological question, but it is a question not closely connected to any of the issues that will be considered in this essay.
4. A monocategorical ontology implies, contra Aristotle, that the universal class possesses sufficient internal ontological unity or uniformity to count as a natural class (it contains only concrete particulars, for example, or it contains only properties). In contrast, a polycategorical ontology — such as

- Aristotle's — implies that the universal class possesses insufficient internal ontological unity to count as a natural class.
5. A *non-austere* or *luxuriant* nominalism is a nominalism that admits the existence of tropes or individual accidents or particularized properties: 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 these objects. Luxuriant nominalism lays claim to the title 'nominalism' on the ground that it denies the existence of *universals*.
  6. James Van Cleve, "Three Versions of the Bundle Theory," *Philosophical Studies* 47 (1985), pp. 95–107.
  7. The earliest statement of Paul's ontology was in "Logical Parts" *Noûs* 36 (2002), pp. 578–96. (Reprinted in Michael Rea (ed.), *Critical Concepts in Philosophy: Metaphysics, Vol. V* (London and New York: Routledge, 2008).) More recent statements of the ontology can be found in "A One Category Ontology," forthcoming, and "Building the World from Fundamental Constituents," forthcoming in *Philosophical Studies*. There are useful summaries of the ontology in "Coincidence as Overlap," *Noûs* 40 (2006), pp. 623–59 and "In Defense of Essentialism" in John Hawthorne (ed.) *Philosophical Perspectives*, Vol. 20 (2006) *Metaphysics*, pp. 333–72.
  8. For the origin of this terminology, see Nicholas Wolterstorff, "Bergmann's Constituent Ontology," *Noûs* 4 (1970), pp.109–34, and Michael Loux, "Aristotle's Constituent Ontology," in Dean W. Zimmerman (ed.) *Oxford Studies in Metaphysics, Vol. 2* (Oxford: Oxford University Press, 2006), pp. 207–49.
  9. Unless, perchance, the relational ontologist — the term I prefer for a practitioner of ontology — thinks that some concrete particulars are "extended simples"; someone who holds this view may want to say that extended concrete simples have no mereological structure but do have a spatial or spatiotemporal structure.
  10. 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 "A Theory of Properties," in Dean W. Zimmerman (ed.) *Oxford Studies in Metaphysics, Vol. 1* (Oxford: Oxford University Press, 2006) pp. 107–38. 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."
  11. My use of this term (in the essay cited in the previous note) has caused some confusion. Observing, correctly, that I have borrowed it from Frege (the German word is *ungesättigt*), some of the readers of that 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.
12. See David Lewis, *On the Plurality of Worlds* (Oxford: Blackwell, 1986), Section 1.5 "Modal Realism at Work: Properties," pp. 50–69.
  13. Consider the thesis ("Platonism") that properties can exist uninstantiated, and the thesis ("Aristotelianism") that properties cannot exist uninstantiated. Relational ontologists tend to be Platonists, and constituent ontologists tend to be Aristotelians. But it is at least possible consistently to be a relational ontologist and an Aristotelian, and it may even be possible consistently to be a constituent ontologist and a Platonist. For that reason, I decline to regard Aristotelianism as essential to the idea of a constituent ontology, and I decline to regard Platonism as essential to the idea of a relational ontology. Similar remarks apply to the question whether properties are "sparse" or "abundant." Relational ontologists tend to hold that most open sentences (all of them but a few Russellian monsters) express properties, and constituent ontologists tend to hold that very few open sentences express properties. But I think that these tendencies are only tendencies, that both can be resisted without contradiction.
  14. For my reasons for rejecting nominalism, see "A Theory of Properties" (cited in note 10).
  15. 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 equatorial diameter of the earth' and ' $1.276 \times 10^7$  m' are either both real denoting phrases and denote the same thing *or* are both syncategorematic.
  16. 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.)
  17. In "Two Concepts of Possible Worlds," *Midwest Studies in Philosophy* 11 (1986) pp. 185–213. See p. 204 *ff.*
  18. See his *The Empirical Stance* (New Haven and London: Yale University Press: 2000), particularly Lecture 1, "Against Analytic Metaphysics," pp. 1–30.
  19. So *I* say, at any rate. See my essay, "Impotence and Collateral Damage: One Charge in Van Fraassen's Indictment of Analytical Metaphysics," *Philosophical Topics* 35 (2007), pp. 67–82, and my A.P.A. Central Division Presidential Address, "The New Anti-Metaphysicians," *Proceedings and Addresses of the American Philosophical Association*, Vol. 83 no. 2 (2009), pp. 45–61.
  20. That is, no possible set of statements could be an explanation of these things that is of the kind that constituent ontologists claim to provide. I don't mean to say that the fact that the book and the apple are both green could not have explanations of other kinds. 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.) And 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 identify a corresponding set of surface-features of objects of the book-apple sort for each color-property. (And if that were accomplished, one could, in one sense, give an account what it is for distinct objects to be of the same color.)

21. 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.
22. Perhaps the ingenuity of metaphysicians will in the course of time produce additional monocategorical ontologies that should be assigned to the third genus. After all, the New Bundle Theory and the “Pauline” ontology are both recent arrivals on the philosophical scene.
23. Since adherents of the New Bundle Theory exist only as creatures of fiction, and since the author of the fiction, Professor Van Cleve, has not filled in that part of the fiction, there is no definitive, textual answer to the question whether they conceive of properties as Paul and the constituent ontologists do. But if there were any actual New Bundle Theorists they certainly would not — *could* not — conceive of properties as relational ontologists do: as necessarily existent abstract objects to which the concepts of location and causation have no application.
24. E. J. Lowe, *The Four-Category Ontology: A Metaphysical Foundation for Natural Science*, (Oxford: Oxford University Press, 2006). The quoted passage occurs on p. 15.
25. There is, of course, the fact to be considered that, according to the New Bundle Theory, there are no perceivers.