

A Certain Kind of Trinity:
Dependence, Substance, Explanation

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Abstract:

The main contribution of this paper is a novel account of *ontological dependence*. While dependence is often explained in terms of modality and existence, there are relations of dependence that slip through the mesh of such an account. Starting from an idea proposed by Jonathan Lowe, the article develops an account of ontological dependence based on a notion of *explanation*; on its basis, certain relations of dependence can be established that can not be accounted by the modal-existential account.

Dependence is only one of two main topics of this paper, for it is approached via a discussion of the category of *substance*. On a traditional view, substances can be characterised as *independent* entities. Before the background of a modal-existential account of dependence, this idea appears problematic. The proposed notion of *explanatory* dependence is shown to vindicate the traditional approach to substance.

Structure:

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Introduction

This article has two main topics, whose interrelation has been discussed throughout the history of western philosophy: the ideas of *ontological dependence* and *substance* (prototypical examples of which are ordinary *things*, i.e. medium-sized, dry goods). Although my approach to dependence is motivated by the goal of defending the traditional idea that substances exhibit a particular kind of ontological independence, the applications of the developed theory of dependence are not limited to a theory of substance. Indeed, there has been much interest in notions of ontological dependence during the last twenty years. Many ontological theses are framed in terms of dependence, and talk about this relation has spread out into other areas in which ontological questions figure in the background (such as the philosophy of mind).

The structure of the paper is as follows: *Section 1* introduces the relevant concept of substance. *Section 2* characterises the traditional *Independence Idea* about substances and formulates some desiderata for a concept of dependence that could vindicate the idea. *Section 3* shows why the classic approach to dependence in terms of modality and existence causes trouble for the *Independence Idea*. The final *section 4* is the core of the article; it develops an alternative account of dependence based on an objective notion of conceptual explanation.

1. Substances and Non-substantial Entities

By the term ‘substance’ I understand (more or less) ordinary things. ‘Thing’ is to be taken in a broad, but not too broad sense here. Members of the following columns may serve as prototypical examples of *things* in the intended sense:

- (i) *bodies* (whether organic, lifeless but natural, or artificial ones), secondly
- (ii) *persons* (which have been conceived of as immaterial souls by the historically prominent doctrine of substance-dualism), and thirdly
- (iii) *parts of bodies* (which might even be too small to call them bodies anymore).

This list of examples does not yield a precise demarcation line between substances and entities of other kinds. We may ask: what other examples of substances might there be (examples not as typical as the ones given)? where to put, for example, groups of people, collections of paintings, our galaxy, or the Atlantic?

Answers to these questions depend upon various considerations which I cannot discuss in detail. Instead, I will limit my interest to a notion of substance governed by two principles of composition:

(Sub-Comp) Any substance is either mereologically simple or solely composed of substances.

(Sub-Comp*) Whatever is solely composed of substances is a substance itself.

Let me briefly comment on the *rationale* of these principles: some philosophers found it attractive to regard substances as compositions of non-substantial entities, as bundles of either particularised qualities or processes and events. Most friends and foes of such a view agree that to hold it is to depart from common sense to some degree.¹ This does not defeat the position in question right away; but I shall be concerned with a common and garden conception of substances, according to which substances have qualities *as well as* parts, while both are not to be lumped together. This choice is reflected by principle (Sub-Comp).

¹ Hoffman and Rosenkrantz (1994: 23) take it as part of the pre-analytic data on substances that all of their parts are in turn substances. Simons, who defends a bundle-theory of substances (Simons 1994; 1998), accepts this datum but thinks it can be overridden if ‘theory presses hard enough’ (1998: 245).

By the second principle, portions of liquid, societies, and planetary systems will qualify as complex substances, because they are – at a final level of analysis – composed of (prototypical) substances, and of substances alone. On some classifications, however, such entities are denied substantiality because they are assemblies with much weaker binding forces than those that hold bodies in their shapes; the *unity* of these entities is highly unstable.² Whether and how this idea can be spelled out to yield a precise criterion is a difficult question; notice that, for example, the ties which bind the limbs of human bodies may be separated much easier than the binding forces which regulate the planetary movements. By employing a broad notion of substance that is subject to principle (Sub-Comp*), I avoid questions about unity.

I readily admit that the notion introduced is only *one* notion of substance. ‘Substance’ is a technical term, and discussions about what the “right” concept of substance consists in are rather futile. Even discussions about what *the* historically appropriate use of ‘substance’ are based on a wrong presupposition, because the perennial debate pivoting about the eight-letter word ‘substance’ should not be regarded as concerned with only *one* sense of the word. The conceptions attached to this term of the art are too diverse as to qualify as conceptions of one and the same thing.³

² On the notion of unity cp. Ayers (1991: 72–82), and Hoffman & Rosenkrantz (1997: chapters 3 and 4).

³ Being confronted with a tradition of diverse strands of ideas attached to the term ‘substance’, philosophers sometimes adopted distinct, and incompatible conceptions of substance at different locations of their work (see, for example, Markie 1994 on Descartes’s conceptions of substance). Much confusion about the meaning of ‘substance’ seems to originate in the reception of Aristotle’s two different conceptions of substance which he employed in the *Categories* and the *Metaphysics* respectively; while his concept of a substance in the *Categories* resembles the concept currently examined to some length and belongs to the business of *descriptive* metaphysics, the conception in the *Metaphysics* seems to be radically different in spirit (for a detailed discussion of these two conceptions see Wedin 2000, in particular ch. V).

2. The Independence Idea

Having introduced my usage of the term ‘substance’, I can proceed to my main question: can we find some characteristic feature that unites the intended extension of the term, a feature that necessarily belongs to substances and that distinguishes them from other entities?

A partial answer will be given immediately: what distinguishes substances (in my sense of the word) from entities of *some* other kinds is that they are *concrete* entities (or: particulars). Substances have a certain causal and spatio-temporal profile; they usually exist for a certain amount of time, possess a location in space at each time of their existence, and they are members of the causal order. This distinguishes substances from *abstract* entities such as numbers or propositions. But the notions of substance and concreteness do not coincide, because there are several categories of *non-substantial* particulars: thus, *events* are as concrete as the people who experience them, they are datable, they should be acknowledged as members of the causal order, and at least a whole bunch of them possess a definite location in space. Other non-substantial particulars include individual states (John’s anger, which cooled rapidly) and qualities (Joan’s wisdom, which decided the battle, and Socrates’ paleness, which Kriton noticed one evening). There may even be more particular things not yet inventoried: both *holes* and *shadows* have a temporary existence, they are located in space, they can be moved and seen, and they may be re-identified over times.

So we need a distinction between substantial and non-substantial *particulars*. A traditional idea about how to frame it alludes to a kind of ontological *independence*, which exclusively substances are supposed to enjoy; we might call this the *Independence Idea*.⁴

To appreciate this idea, it is first of all important to notice that there is a whole *family* of notions of dependence. Dependence is a classical *ménage à quatre* – some things (here we have the first term of the tripartite relation) are in respect to some condition or aspect (term two) dependent upon other things (term three) being in a certain condition (the *ménage* is complete).⁵

⁴ For a helpful guide through some other historically important ideas about what distinguishes substances from other entities see Ayers (1991).

⁵ Cp. Simons (1987: 293f.).

To still enrich this variety, we can distinguish between *notional*, *generic* and *individual* dependence. The first kind of dependence is description-relative; in societies in which homosexual couples are forbidden to marry there cannot be husbands if there are no wives. Yet, any individual husband could have existed without the aid of a wife, if only marriage had never been established. He would just not have been correctly subsumed under the notion of a *husband* then. *Generic* dependence is not description-relative in this way; but it is only dependence on there being *some* entities of a certain *sort* (while allowing for different entities of the sort to fulfil the role) – no society could have existed if there had been no people, but presumably societies are not dependent upon there being any particular persons. *Rigid* dependence, finally, is dependence upon certain *individual* things.

Of these two *de re* notions of dependence, it is rigid (or: individual) dependence which seems promising for a definition of *substance*.⁶ Generic dependence holds between substances and non-substantial particulars in either direction: there cannot be a smile without someone smiling and there cannot be a marriage without marrying people. But there also cannot be featureless substances. Though many features that a substance has might be replaced by other features, to think of a substance stripped of all its qualities without any substitutes is to fancy an impossibility. As David Wiggins put it:

The *bare idea* of a subject is one thing. To have such an idea is to conceive of an ordinary subject while leaving it entirely *open* what the subject is. [...] The idea of a *bare subject* is an altogether different thing; no reader of Aristotle's *Categories* will ever agree to make sense of it. By subject (*hupokeimenon*) Aristotle had meant the visible, palpable subject that has qualities – not a substratum that is in itself quality-less, or has no qualities. (Wiggins 1995: 227)

⁶ Some qualms which philosophers had with the *Independence Idea* suffer from the non-distinction of these two kinds of dependence; when Mill, for instance, criticised the definition of a substance as an independent entity, he rightly pointed out that there cannot be a substance without attributes – thereby highlighting the *generic* dependence of substances upon attributes, while leaving the question of their individual independence untouched (Mill, *System of Logic*: Book I, Chapter iii, § 6). But Mill was not the last one to commit this mistake; Bordes (1998: 7), for example, also attacks the *Independence Idea* about substance while framing it erroneously in terms of generic independence.

Nevertheless, it was Aristotle who gave birth to the tradition of the *Independence Idea* when he characterised substances as things which are not *in* something else;⁷ where something is *in* something else (in the relevant sense) if it is *unable to exist* without that in which it is.⁸ The idea has attracted many followers and in particular it came to a lively renaissance in the rationalists' approaches to substance.⁹ It is properly spelled out in terms of *individual*, not of *generic* dependence. But whether the idea proves feasible depends upon the exact notion of dependence employed. An account of (in-)dependence that serves the *Independence Idea* should satisfy three *desiderata*:

- (i) substances should qualify as independent in the relevant sense,
- (ii) other non-substantial particulars should qualify as dependent entities, and
- (iii) it is generally desirable that the account of dependence is ontologically neutral to a high degree; i.e. it should not rely on too many specific claims about what there is and what there isn't.

In the next section I will show why it is questionable that the somewhat classic account of existence in terms of modality and existence meets these *desiderata*. But there is an alternative account, which I will develop in the last section, and on whose basis I will defend the *Independence Idea*.

⁷ *Categories*: ch. 5.

⁸ *Categories*: ch. 2.

⁹ Definitions of *substance* which can be seen as tributes to the Aristotelian *Independence Idea* were for example proposed by (i) Descartes: 'By *substance* we can understand nothing other than a thing which exists in such a way as to depend on no other thing for its existence.' (*Principia Philosophiae*: book 1, §51); (ii) Spinoza: 'By *substance* I mean that which is in itself and is conceived through itself; i.e. that of which the concept need not be formed from the concept of any other thing.' (*Ethics*: part 1, definition 3); (iii) Baumgarten: 'An entity either cannot exist except as a determination (in something else), or it can so exist. The former is an *accidence* [...] the latter a *substance*.' (*Metaphysica*: §191). The three definitions differ, of course, in detail; but I better not enter into a debate about the differences here.

3. A Modern Classic: Dependence in Terms of Modality and Existence

A fairly natural account of individual dependence proceeds in terms of modality and existence, such that an entity x is said to depend upon another entity y iff necessarily, if x exists, so does y :¹⁰

(Dep-1) x depends upon $y \leftrightarrow_{df.} x \neq y \ \& \ \Box (x \text{ exists} \rightarrow y \text{ exists})$.

(The first clause is to exclude self-dependence and reflects the ‘another’ of the colloquial introduction of the definition.)

Though we may hold that the notion defined by (Dep-1) is *a* notion of dependence, it surely is no good for our purposes. With this definition, dependence is reduced to necessary companionship, and many substances seem to be such that their existence, of necessity, requires the existence of certain other, individual things. The following are plausible assumptions showing that at least some substances are not independent in a sense corresponding to (Dep-1):

- (i) Some substances may have *essential parts*, individual entities of which they are composed and which they could not lack as parts. Possible examples could be a violin and its resonance body, or a helium atom and its proton.
- (ii) Some substances’ origin is essential to them. An organism, for example, may have to stem from the cell it actually originates from.
- (iii) There might be necessary existents. Examples would be *abstract* objects like numbers or certain sets (the null set, the singleton of the aforementioned set, the singleton of this set, etc.), and God as a necessary *concrete* existent.¹¹

Substances will be dependent upon their essential parts, their essential origins, and any necessary existent by the standards of (Dep-1). So, once we have acknowledged the possibility of these cases, we cannot hope to define substances as concrete

¹⁰ For approaches to dependence in terms of modality and existence see Johansson (1989: ch. 9), Simons (1987: ch. 8), and Thomasson (1999: ch. 2).

¹¹ It has recently been argued that all entities exist necessarily, at least in the sense of the word ‘exist’ that is captured by the existential quantifier or a predicate defined in its terms (see Williamson 2000: 130ff.). Here, however, I presuppose the (more common) view that there is a sense of ‘exist’ in which we mark a significant difference between, say, numbers and human beings by declaring that the former entities exist of necessity while the latter do not.

entities not dependent upon other entities in the sense of (Dep-1) – we may, however, hope, that some refinements of (Dep-1) would help us out. The easiest remedy is to exclude the problematic cases (i) and (iii) by stipulational fiat, modifying the definition of dependence such as to exclude dependence upon parts and necessary existents.¹² Case (ii) calls for a more sophisticated move. We can distinguish between different notions of dependence by taking into account at what *times* an entity *y* must exist in order to allow for a dependent entity's existence. Then we come to see that an entity *x* may either require the existence of another entity *y* at *some time or another*, or it may require *y*'s existence at the whole time of *x*'s own existence. Let us call the first case *historical* dependence and the latter *permanent* dependence. Now substances may well depend upon their genetic origin *historically*, but it seems unlikely that they should depend upon them permanently – as we know, children do often survive their parents. We may thus modify our definition arriving at a reasonably stronger notion of dependence:¹³

(Dep-2) x depends upon $y \leftrightarrow_{df}$
 $x \neq y \ \& \ \square$ (whenever x exists, y exists) $\& \ \neg y$ exists necessarily $\& \ \neg y$ is a part of x .

Unfortunately, there are still other troublemakers for this approach (which are relevant to (Dep-1) too); think of the following cases:¹⁴

- (iv) Given a contingently existing substance x , the singleton of it will arguably exist contingently as well. And if it makes any sense to apply a notion of temporal existence to such a set, it will exist just as long as its element does.¹⁵
- (v) Essentialism holds that things have essential properties. Now there could also be *essential* particularised properties. An example would be Socrates' humanity. It seems that Socrates' humanity necessarily coexists with Socrates, and even temporally so – it will not have existed before Socrates did, and vanishes instantaneously with Socrates' passing away.

¹² This strategy is endorsed by Simons (1987: 294–310).

¹³ Cp. Simons's definition DD7 (1987: 306).

¹⁴ Still more problematic cases arise if one accepts arbitrary mereological sums: given that there is at least one necessary existent, x , every substance y will then essentially be part of the sum of x and y , where the sum will be a contingent existent if only the substance is one.

¹⁵ That sets are somewhat troublesome for the modal-existential approach to dependence, in virtue of their rendering every entity dependent upon its singleton, is observed by Fine (1995a: 271).

- (vi) It has been argued by Lowe (1998: 143f.) that a human being necessarily lives the life she lives (that is to say, she necessarily lives *numerically* the same life, though *qualitatively* the life may have been vastly different of course). Furthermore, a person's life lasts as long as the person exists.

If we want to accommodate for cases (iv) to (vi), we cannot define a substance as an independent particular in a sense corresponding to (Dep-2), because it seems that Socrates, a substance, will then turn out to depend upon singleton Socrates, Socrates' humanity, and Socrates' life.

Now probably not everybody will find all these cases equally plausible. But in any event, they cannot simply be dismissed out of hand, and I shall not enter into a lengthy discussion of any of them. No definite verdict in this matter is required for my current purpose. The examples show that it is at least *prima facie* doubtful whether substances qualify as independent entities in the sense of (Dep-2). If the examples are accepted, we may also be doubtful about the prospects of finding any notion of dependence formulated in terms of modality and existence which satisfies our current purpose. This is not only because of the very strong modal links which tie the pairs of entities in the cases (iv) to (vi) together, but also because definition (Dep-2) is already highly refined, and adding just further clauses seems to be a piecemeal approach which will not reveal any deep conceptual insights.

Does the *Independence Idea* about substance therefore depend upon the question whether the problem cases above have to be taken seriously or can be avoided by some theoretic moves? One might think that even if there are sets, particularised properties, or events which necessarily coexist with some substances, the former entities depend upon the latter in a *unilateral* manner. A reason to believe so is that one might find the idea plausible that *every* set is, *qua set*, unilaterally dependent upon its member(s), just as every particularised property is (*qua* particularised property) unilaterally dependent upon its bearer(s), and every event is (*qua event*) unilaterally dependent upon its subject(s). The modal-existential account of dependence cannot do justice to this thought. That is not to say, though, that the modal-existential account fails to capture *some* proper sense of 'dependence'. Talk of dependence is, as I have pointed out above, in need of specification. Things depend upon other things *in certain aspects*, and surely it is one aspect to depend upon another thing in terms of existence and modality.

So without denying the current account some conceptual value, we may hold that there seems to be at least *one* sense in which it is certain that all sets, events,

and particularised properties are unilaterally dependent entities. The important question is: can we explicate this sense? My contention is that we can, and the burden of the remainder of my paper is to show how to do it.¹⁶

4. Explanatory Dependence

a. Lowe's abandoned proposal

My own account will exploit a proposal which Lowe made rather *en passant* while dealing with notions of substance and dependence. He suggested the following definition:¹⁷

(Dep-3) x depends upon $y \leftrightarrow_{\text{df.}} x$ exists, because y exists.

Though Lowe declared himself confident about this account, he abandoned it shortly after proposing it because it seemed somewhat unperspicuous to him. I wish to do two things now; first of all, I will clarify and defend the general idea of Lowe's proposal, thus hopefully removing any doubts concerning its intelligibility. Secondly, however, I want to show why in its current form the proposal is deficient after all. Fortunately, we can improve upon it in a fruitful way.

¹⁶ This contention I share with Fine, who argued in a series of papers (1994, 1995b) for the acceptance of a primitive notion of *essence*, which he also uses to define a strong notion of dependence (Fine 1995a). The account I present in the following has some points of contact with Fine's account, but for reasons of space I cannot go into a detailed comparison here (likewise, I will not discuss other recent and important accounts of the independence of substances, such as Hoffman & Rosenkrantz 1994, and Lowe 1998: 147–151).

¹⁷ Lowe (1998: 145). I omit two aspects of Lowe's formulation: (i) he uses an '*only* because' instead of the simple 'because' (I briefly hark back to this point in footnote 24), and (ii) he puts a necessity operator in front of the definiens. This is problematic, since 'because' is a *factive* connector (and so is 'only because'), such that the truth of an instance of '*p* because *q*' implies the truth of '*p*'. So Lowe's definiens, 'necessarily, *x* exists only because *y* exists' seems to presuppose the necessary existence of *x* and *y*, which is clearly not part of his intentions. To avoid this problem, Lowe could conditionalise his definiens as follows: 'necessarily, *if x exists*, then *x* exists only because *y* exists'.

b. The Relevant Notion of Explanation

But let me first say something general about the legitimacy and idea behind the employment of the connective ‘because’ in the definition. By using the connective ‘because’ we enter the field of *explanation*. By an ‘explanation’ we may understand a certain type of sentence; thus sentences of the form ‘*p* because *q*’ are properly called explanations. Of course, these are not the *only* linguistic forms of explanation; we have a whole battery of expressions introducing explanatory contexts – to name just a few relevant cases, the expressions ‘*p* in virtue of *x*’, ‘*x* φ-*s* by ψ-ing’, ‘*x* makes *y* such-and-such’, ‘the fact that *p* is grounded in the fact that *q*’ are often used in that way. But I will concentrate on the connector ‘because’ here.

Now we may not only call a sentence of the said form an explanation, but also that what is *expressed* by it, and thus apply the term to *propositions* of a certain sort. I shall use ‘explanation’ in both of these two ways. Furthermore, I will call the sentential component ‘*p*’ of an explanation ‘*p* because *q*’ the *explanandum* and the other component, ‘*q*’, the *explanans*, and say that the latter (at least purportedly) *explains* the former; and I will expand my usage of these terms in order to cover also the propositions expressed by them.

Among explanations we may now distinguish two basic types. First of all, there are causal explanations, such as

- (1) The tree fell because de Selby chopped at it with an axe.

However, it is important to notice that not all explanation is causal. Indeed, the bulk of explanations given in philosophy and mathematics is of a different type. Some very simple examples of non-causal explanations are:¹⁸

- (2) Thorsten is my brother-in-law, because he is married to my sister.
 (3) Xanthippe became a widow, because Socrates died.
 (4) This vase is coloured because it is red.

These explanations can all be called *conceptual*.

When he briefly discusses his own proposal, Lowe mentions as a possible objection to it the claim that, due to the involvement of an explanatory notion, it

¹⁸ Kim (1973, 1974) has influentially drawn attention to non-causal but explanatory statements of such kind; cp. Owens (1992: 43f.) for some further examples.

involves a confusion of metaphysics and epistemology.¹⁹ He does not go on about this; so let us consider how this objection might be set forth in more detail: explanation, some philosophers might say, is an epistemically constrained notion. Explanation is always *relative* to the epistemic makeup of some given subject. What explains something to one person may be worthless to the other. It might, for example, be stale news to her, or it might ask too much of her intellectual capacities, or it might in her eyes lack any apparent connection to that which is to be explained. Thus, this notion should not be involved in ontological definitions.

But whoever argues like that overlooks that there are both subjective *and* objective notions of explanation. By an explanation we may just think of a piece of information enlarging our understanding of a given matter; sometimes, such an enlargement may simply consist in ascertaining us of the truth of some proposition, or sometimes in piling up more information about some particular topic. Thus we may say that if a student, so far lacking any knowledge about multiplication, is successfully taught how to multiply, some explanation must have taken place. Similarly, if any proposition is deduced from some other propositions, we may say that the truth of the proposition deduced was explained with recourse to the truth of the premises used. If we talk that generously about explanation, we indeed employ an epistemically constrained notion which we should avoid not only in ontological definitions.

But sometimes we employ a more narrow notion of explanation. We often do it when we are concerned with causal explanations. The truth of (1), for example, is not dependent upon the informational background of a person confronted with it. Rather, it is grounded in an objective instance of the causal relation, which holds independently of what subjects may think about it. But there are similarly objective relations holding between concepts, and thus we can make sense of a more narrow, objective sense of explanation with respect to conceptual matters as well.²⁰ To illustrate this claim, let us return to the examples of conceptual explanations given above: they are based on certain conceptual relations which they in turn illuminate.

¹⁹ Lowe (1998: 146).

²⁰ As Steiner (1978: 135) points out, mathematicians distinguish between proofs which merely *demonstrate* and proofs which *explain*; he then gives an account of an objective and narrow notion of mathematical explanation which is somewhat congenial to my present remarks. Cp. also Sharvy (1972) on Socrates' use of explanations based on *formal causes*.

Such relations can be of different character, as a brief run through the examples will show (because of the limited space, my remarks will be somewhat sketchy). In (2) and (3), the explanation settles on the appropriate conceptual analyses of the central notions of the *explananda*, the concept of a brother-in-law and the concept of a widow. By a brother-in-law of someone, we just mean the husband of a sister of this person, and by a widow we just mean a woman whose husband has died. But in the case of (4) a different mechanism is at work; we cannot analyse the concept expressed by the general term ‘colour’ in terms of concepts of individual colours like red, yellow, blue etc.²¹ Nevertheless, it is a conceptual truth that red, blue etc. are colours. And furthermore mastery of the concept expressed by ‘colour’ requires a thinker to master at least *some* colour concepts and to know that these concepts stand for colours. Or take, as a final example, a kind of explanation to which Aristotle drew attention when he wrote:

It is not because we think that you are white, that you *are* white, but because you are white we who say this have the truth. (*Metaphysics*: 1051b6–8)

Here Aristotle seems to defend that

(5) It is true that snow is white because snow is white.

Of course there is a whole battery of explanations corresponding to (5), which are instances of the scheme:

(T) If it is true that *p* at all, then it is true that *p*, because *p*.

In the case of (5), again, the *explanans* does not contain material which enters into an analysis of the concept on which the explanation settles on; the concepts expressed by ‘white’ and ‘snow’ are surely not components of the sense of ‘true’ (or the sentential operator ‘it is true that’). But a grasp of the concept of truth ensures us that we are correct in holding it true that snow is white on the grounds that snow is white.²²

Relations of conceptual priority and complexity, which are not relative to any epistemic subject, will help us in the case of conceptual matters to tell the genuinely

²¹ Johnson (1921: ch. 11) influentially drew attention to the peculiarity of the relation between what he called *determinables* and *determinates* by using the example of colours.

²² Cp. Künne (2003: 154f.).

explanatory statements from the others, just as the causal relation helps us tell proper causal explanations from the others. And as the order of explanation (explanations are in general asymmetric) is determined, in the case of causal explanations, by the order of the causal relation itself, it will be owed to factors of conceptual complexity and primitiveness in the case of conceptual explanation. In general, statements involving complex or elaborated concepts are explained with recourse to more primitive concepts (which may or may not enter into an analysis of the complex concepts).

Now of course, much more could be said on the topic of conceptual explanation. For now I am content with having defended the prospect of an objective notion of explanation, covering both causal and conceptual cases.

c. A Deficit of Lowe's Proposal

The definiens of Lowe's definition (Dep-3) will have as its instances explanations of a special sort, since it is the *existence* of a thing which is to be explained here. Most often, when we ask for an explanation of an object's existence, we think of a causal explanation. Thus we explain the occurrence of events by recourse to their causes, but also the existence of certain conditions or particularised properties, if we cite causes for them ('the smile was brought to her face by the arrival of her sister'). And finally we sometimes also causally explain the existence of some substances; though seldom discussed in the literature on causation, the mechanisms of *production* certainly belong to the causal realm.²³

But examples of conceptual explanation, such as the ones discussed above, also give rise to some sort of conceptual explanation concerning the existence of some entity. If for example, Xanthippe became a widow, because Socrates died, then we may also say that her widowing took place because the death of Socrates did. And similarly, since a certain tartan is patterned because of the arrangement of colours on its surface, we may say that its pattern (a particularised property) exists because these individual colours as well as their arrangement exist.

In both examples we explain the existence of some entity by the existence of some other entity. Non-causal explanations of an entity's existence are thus not *eo ipso* impossible. While the examples above are cases of *intra-categorical*

²³ Cp. Sosa (1980).

explanation of the existence of an entity, there are also plausible cases of *inter-categorical* existential explanations. Singleton Socrates exists, I maintain, because Socrates exists. And, more generally, it is true that

(6) For every set s : s exists, because its members exist.

Notice that we need not merely rely on intuitions about these claims to justify that they are indeed explanatory; we can lay open the explanatory mechanism at work here. Similar to the examples of conceptual explanations given above, (6) derives its explanatory force from certain relations of conceptual constitution. It is constitutive for the possession of the concept of a set to have a grasp of the existence conditions of sets. By this grasp we know that a set exists if and only if its members do. It is this conceptual fact about the concept of a set which renders (6) explanatory; the *explanandum* contains a logically elaborate concept a part of whose constitutive nature is revealed in the *explanans*.

But even if we acknowledge the existence of such explanations, there remains room for disputes about cases, and Lowe's cases are worth of being disputed. Lowe thinks that (Dep-3) defines an asymmetric kind of dependence holding between particularised properties and events on the one hand, and substances on the other. Thus, he would have to subscribe to statements such as the following:

(7) Woody Allen's humour exists, because Woody Allen exists.

(8) Karrer's walk takes place, because Karrer exists.

But it just seems to me that no explanation of the existence of, say, Woody Allen's humour is given by referring to his existence. Pointing out that Woody exists does not clarify *why* his *humour* exists. What strange and unseemly strong *explanans* this were can be seen from the fact that it would not only be explaining why Woody's humour, his lack of hair, and the pitch of his voice exists, but in a counterfactual situation it would need to explain why Woody's *lack* of humour, his *richness* of hair, and his muteness exist. I cannot see that any explanation is provided here.²⁴

²⁴ When I referred to Lowe's proposal, I was not wholly faithful to his words; I omitted an 'only' which he used in his definition, such that it originally reads:

x depends upon $y \leftrightarrow_{df.} x$ exists *only* because y exists.

What this 'only' exactly amounts to is not easy to see, and I do not want to discuss it here. It seems unlikely that after the addition of the 'only' Lowe's definition could cope any better with the objection made above, namely that certain statements which Lowe

The explanatory emptiness of (7) and (8) becomes particularly obvious by the comparison with the parallel statement about sets above. While the existence of a set is wholly explained by recourse to the existence of its members, no such thing is true of events and particularised properties. Here someone willing to defend Lowe's position might reply that the difference between (6) on the one hand, and (7) and (8) on the other is that the former gives a *complete* explanation while the latter only give *partial* explanations. But I cannot see how the existence of Woody Allen could even *partially* explain why his paleness exists. I rather think that the response confuses necessary conditions with partial explanations; Woody Allen's humour *cannot exist*, if Woody does not, and so his existence is a necessary condition of his humour's existence. But not every necessary condition of the existence of something constitutes a partial explanation of it and must enter into a complete explanation. It is, after all, a necessary condition of the existence of Woody Allen's humour that Woody Allen's parents exist, or the singleton of Woody Allen exist etc. But we don't have to mention these things to completely explain the existence of his humour. They are not explanatorily related to its existence at all.

d. Explanatory Dependence Generalised

I will now argue that despite its deficits, Lowe's definition is on the right track. Its main problem consists in concentrating on an inappropriate *explanans*. Woody Allen's humour does not exist because Woody exists. But there is another, quite trivial explanation of why Woody's humour exists – it exists, because *Woody is humorous*. Similarly, Karrer's walk exists, because he walks, and Socrates' wisdom exists, just because Socrates is wise.

(To briefly hark back to the idea considered and abandoned above, namely that (7) at least *partially* explains why Woody's humour exists, we have now another reason to reject it. After having explained the existence of Woody's humour by saying that it exists because Woody is humorous, we are done. Our explanation is not incomplete unless we go on and add: oh, I forgot to mention, it exists because Woody is humorous *and because Woody exists*. Of course, his existence is a

needs to accept as explanatory are in fact explanatorily empty. For it seems that a statement of the form '*p* only because *q*' implies the corresponding statement '*p* because *q*'; and if it does, then it cannot be explanatory if the latter is not.

necessary condition of his being humorous; but it plays no explanatory role for our present concern.)

We may define a generalised notion of explanatory dependence by calling some thing x dependent upon another thing y , if y is or does something, such that x exists because y is or does it:²⁵

(Dep-4) x depends upon $y \leftrightarrow_{\text{df.}} \exists F (x \text{ exists, because } y \text{ is } F).$ ²⁶

This definition yields an *asymmetric* notion of dependence; its asymmetry is owed to the asymmetry of explanation. Furthermore, we can see that non-substantial particulars are dependent entities according to this definition. They exist because their bearers, or subjects, or hosts are *thus-and-so*. Therefore, the notion is promising to serve the *Independence Idea*; but since we will see that some substances are explanatorily dependent in its sense, I will improve upon the definition by introducing some further distinctions. Before I do so, however, I shall defend the claim about the explanatory dependency of non-substantial particulars in more detail.

After all, a sceptic might urge that explanations such as

(9) Socrates' paleness exists because Socrates is pale.

are only pseudo-explanations. Or, even worse, he might hold that they turn things upside down, such that the correct order of explanation runs in the other direction: is it rather that Socrates is wise, because Socrates' wisdom exists. I shall address both questions together, by propounding the mechanism of the explanation I defend.²⁷

Let us take a look at the phrase which brings the particularised property in (9) into play, the designator 'Socrates' paleness'. It can be called a *canonical*

²⁵ Independently of each other, Fabrice Correia and me developed similar proposals on dependence. Having discovered the closeness of our proposals, I would like to call attention to his forthcoming book on dependence.

²⁶ The quantifier ' $\exists F. x \text{ is } F$ ' is best to be translated into English as 'there is something which x does or is' (cp. Prior 1971: 36). Like Prior, I sympathise with an *innocuous* interpretation of non-nominal quantifiers, such as 'something' standing in the position of a general term. That is, I take them to be *neither* objectual nor substitutional (for a detailed defence of this position see Rayo & Yablo 2001). However, nothing in the present context particularly hinges on this view.

²⁷ For a similar proposal (but one concerning events) see Bennett (1988: 12–15).

designator of a particularised property; it has the standard form of such designators, combining an expression capable of designating a property with a designator of a subject which possesses the property in question – other examples would be ‘Little Voice’s singing’, ‘Jean’s piety’, or ‘Belmondo’s charm’. Most often, when the idea of a particularised property is introduced by friends of such entities, it is by the use of such terms. And this is not an accident; these designators are central to our acquisition of the conceptual framework of particularised properties. It is by certain linguistic contexts which contain such designators and which resist a reading of them as denoting shareable properties that we are driven towards the acceptance of this framework.²⁸

Canonical designators of particularised properties, such as ‘Socrates’ paleness’, are semantically complex expressions, whose meaning is a function of the meaning of their parts and their way of combining.²⁹ Mastery of the rules that govern the formation of such expressions will give rise to an understanding of any combination of a property term, such as ‘paleness’, with an arbitrary singular term, such as ‘Socrates’, as long as the terms combined are understood. But this is just to say that such a canonical designator of a trope expresses a *logically complex* concept, the grasp of which requires us to relate it to the concepts expressed by the phrase’s components, which will be conceptually more primitive. Thus we understand ‘Socrates’ paleness’ along the following line: it denotes a particular instance of paleness, existing as a feature of Socrates just in case that he is pale.³⁰ Generally, we understand an expression of the form ‘*x*’s *F*-ness’ to denote a particular instance of *F*-ness, existing as a feature of *x* just in case that *x* is *F*.

²⁸ The strongest arguments for the acceptance of tropes rely on their role in *causal* contexts (see for instance Campbell 1981: section 3), and in particular on their role in contexts of perception (see Mulligan *et al.* 1984: 304–308).

²⁹ Cp. Wolterstorff (1970: 136f.) and Strawson (1974: 131) on the semantics of such terms.

³⁰ This involves a slight simplification, since I abstract from the factor of time; under certain circumstances, we might be willing to distinguish between several instances of paleness belonging to Socrates. As long as Socrates is pale and simply stays pale, we probably should countenance only one instance of paleness (which might be conceived of either as an occurrent, having temporal parts, or as a continuant). But if Socrates was once pale, then well tanned for while, and finally pale again, we may want to distinguish between two instances of paleness here; after all, they could have quite different causal origins and effects (the one might be due to an illness, the other simply to a lack of sunshine).

So we see that it is part of our understanding of ‘Socrates’ paleness’ that it denotes an entity that exists if *Socrates is pale*. Now notice that the sentence in italics is exactly the purported *explanans* in (9). Here we encounter a conceptual structure we have met before; the *explanans* employs certain concepts which build the layer for the more elaborate concepts employed in the *explanandum*. But such a kind of structure we have earlier acknowledged as giving rise to a conceptual explanation – Thorsten is my brother-in-law, because he is married to my sister; Xanthippe became a widow, because Socrates died. And Socrates’ paleness exists, because Socrates is pale. This way we can justify the explanatory relation holding in (9); accordingly, (9) is explanatory.

e. Some Further Distinctions

So far I have argued that (Dep-4) manages to define an asymmetric notion of dependence which meets one of the constraints of the *Independent Idea* – non-substantial particulars prove to be dependent entities in light of it. However, it could serve for a definition of substances as *independent* entities only if there were no substances which are explanatorily dependent upon other entities in the sense defined. Indeed, substances are not explanatorily dependent upon any of their particularised properties, or events of which they are the subject. But since some substances are causally brought about by other substances, they qualify as *dependent* according to (Dep-4): human beings, for example, exist because of something that their parents did. Hence, they are dependent upon their parents in the sense of (Dep-4). Similarly, a particular clock exists because someone put it together, and thus it explanatorily depends upon its maker.

But by distinguishing between distinct sub-kinds of explanatory dependence, we can frame one such notion which really serves the *Independence Idea*. The distinctions I will make should already look familiar from the discussion of the modal-existential account of dependence.

First of all we can introduce some distinctions in respect to the *temporal* dimension of the dependence relation. Thus, we can define a notion of *permanent* explanatory dependence as follows:

(Dep-5) x depends *permanently* upon y \leftrightarrow_{df}
 $\exists F$ (whenever x exists, it exists because y is F at that time).

With the notion of permanent explanatory dependence we already get rid of causal dependencies; children can outlive their parents and clocks can outlive their makers.³¹ But since the notion of dependence defined in (Dep-4) still allows for *contingent* cases of dependence, we may furthermore define a notion of *rigid* explanatory dependence:

(Dep-6) x depends *rigidly* upon $y \leftrightarrow_{df.} \exists F \Box (x \text{ exists} \rightarrow (x \text{ exists because } y \text{ is } F))$.

Finally, we may combine the modal and the temporal aspect and define the very strong notion of rigid, permanent dependence as follows:

(Dep-7) x depends *rigidly* and *permanently* upon $y \leftrightarrow_{df.} \exists F \Box (\text{whenever } x \text{ exists, it exists because } y \text{ is } F \text{ at that time})$.

With (Dep-7) we reached a notion of dependence that seems to vindicate the *Independence Idea*. Substances do not seem to depend upon anything in this strong sense, while non-substantial particulars are dependent *even* in this strong sense. So I propose the following definition of *substance*:

(Substance) x is a substance $\leftrightarrow_{df.} x$ is a particular & $\neg \exists y. x$ depends upon y in the sense of (Dep-7).

f. Conclusion

I have first introduced a notion of substance and then inquired into the plausibility of the *Independence Idea*, the idea that substances enjoy the privilege of some kind of ontological independence, a privilege which distinguishes them from particulars of other sorts. I have argued that no notion of dependence suitable for this idea is to be found along the classic modal-existential approach, but that we find such a

³¹ As a referee pointed out to me, it might for some purposes be preferable to exclude causal dependencies *by definition* (i.e. to define a notion of explanatory dependence in which the relevant explanation is required to be *non-causal*), instead of excluding them indirectly by defining a notion of permanent dependence. At the present, I am not yet clear about the respective merits of these alternatives and therefore decided to simply point out the said possibility.

notion if we rely on a notion of explanation which proves to be stronger in many respects than the notion of modality.³²

The definition of substance reached is immune from the problems we encountered with the modal-existential approach and thus exhibits a high degree of ontological neutrality. Typical examples of substances classify as substances in its light, even if there are strong modal ties between them and some entities of other sorts. It is also compatible with there being a necessary substance, whose particularised properties will depend upon it in the same sense in which the particularised properties of Socrates depend upon him.

Nevertheless, the definition is, of course, open to objections from highly specific philosophical doctrines; perfect neutrality can probably not be obtained. Some strong conception of how the world depends upon God's will might, for example, be troublesome to it. Some theists could maintain that God not only *created* the world, but that the world is furthermore in permanent need of God's holding it in a stable position. Then, granting them the conception of God as a necessary being, the world (and its inhabitants) would be rigidly, permanently dependent upon God in the sense of (Dep-7). The definition of substances as independent particulars would then rule out anything from the status of substancehood except of God. If this were the case, we could seek retreat to Descartes, who argued that in one sense, God is the only substance (since She is the only being independent of *any* other entity), while we can define a broader sense which will apply to created substances: such an entity would be any particular dependent *only* upon God. Of course, the relevant theistic assumptions are highly controversial and radical in spirit. The definition reached seems to be compatible with most non-radical views and is valuable for this feature.

³² Incidentally, one may notice that due to its recurrence to the idea of conceptual explanation, the proposed definition of substance somehow takes up an idea clearly present in Spinoza's definition of substance as something 'of which the concept need not be formed from the concept of any other thing.' (*op. cit.*). We know, however, that Spinoza places his definition into the service of a rather revisionary metaphysics, arguing on its basis for a unique kind of substance monism. But his argument perhaps rests more on a counter-intuitive view about *concepts* and concept possession than on an inadequate definition of substance.

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