

Fact Infinitism and Ontological Dependence

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by

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WARNING. This is only a very preliminary draft for use at the Bradley December 2008 conference in Geneva. I hope to improve on it before the conference starts. Please note that the labels “NWF” and “WF” in this text replace, respectively, the labels “OU” and “OG” used in the abstract sent some time ago to the organizer and already posted in the site for the conference.

ABSTRACT. I have argued in previous works that it is appropriate to distinguish two versions of Bradley’s regress, each stemming from two different ways of reacting to the problem of unity: the internalist and the externalist versions. The former is indeed vicious, while the latter unviciously leads to what I have called *fact infinitism*, a doctrine involving the thesis, call it *NWF*, that there are non-well-founded (ungrounded) chains of ontological dependence, which fail to terminate with one or more independent entities. In a recent paper Ross Cameron has similarly viewed Bradley’s regress as giving rise to *NWF*, but then has argued that *WF*, i.e. the denial of *NWF*, is contingently true. If Cameron’s argument is successful, fact infinitism cannot then be true. To back up fact infinitism, I shall first review the argument and explain why it fails. Next, I shall offer some positive reasons to think that *NWF* is, in the light of the externalist Bradley’s regress, not only true, but indeed necessarily true.

The problem of unity and two versions of Bradley’s regress

The problem of unity is the problem of accounting from an ontological (most general) point of view how *one* specific complex entity can arise out of a plurality of distinct entities (the constituents of the complex). It might be useful to tackle the problem by distinguishing two related questions: (P1) what generates a complex out of its constituents? More precisely, what is it that gives unity to the complex so as to make it *that* kind of complex and not a complex of another sort? Or, still, by virtue of what is there a complex of a certain kind, in addition to the constituents? (the *sub-problem of identity*). (P2) what differentiates a complex from another complex? (the *sub-problem of difference*).¹ The answer to (P2) is easy if we admit that there are no two complexes with the same constituents. But if we have reason to think that that there can be complexes with exactly the same constituents the issue is more complicated.

¹ Similarly, in dealing with the issue of particularity (what is a particular, as opposed to a universal?), Castañeda 1975 urges an analogous distinction. Although, as far as I remember, Vallicella (2000, 2002, 2002a) has not explicitly subdivided the problem of unity into the two above sub-problems, he has in fact appealed to the problem of difference in arguing against the brute fact approach, according to which the existence of Armstrong-style states of affairs is a brute ontological fact, something for which no ontological explanation can be offered. I shall appeal in a similar way to (P2) below.

In dealing mainly with complexes of a specific kind, namely states of affairs (facts) understood *à la Armstrong* (as entities involving as constituents a universal (a property or a relation) and (in typical cases) one or more particulars), I have argued in preceding works (2004, 2006, 2006a, 2007) that there are two kinds of Bradley's regress, an internalist and an externalist one. They both arise from an attempt to address (P1). Let us focus on the fact $*Fa*$ to see this.

Consider the internalist regress first. Step 1: we may try to answer (P1) by postulating that $*Fa*$ has a further constituent in addition to F and a, which keeps F and a together. Namely, a relation of dyadic exemplification, E1, so that $*Fa* = *E1Fa*$. But then, step 2, one can ask what keeps E1, F and a together and this leads one to conjecture that $*Fa* = *E2E1Fa*$ (where E2 is triadic exemplification), and so on. Step 2 shows that one cannot solve the problem by stopping at step 1 and postulating just *one* further constituent. But step 2 does not show yet that the problem cannot be solved by postulating a gigantic fact $*... E4E3E2Fa*$ with an infinite number of constituents (involving exemplification relations of ever higher degrees). This recourse to actual infinity will not do however because in the gigantic fact no E_i (for $i = 2, 3, 4, \dots$) has a relating or attributive role: for any i , it seems that E_{i+1} has this role. The internalist regress is then vicious in that it uncovers an inconsistency in an attempted solution (if we take for granted that in a state of affairs precisely one constituent must have the relating role).

Consider now the externalist regress. In alternative to the above failed attempt, one may try to answer (P1) by granting that in addition to the fact $*Fa*$ there is the additional fact $*E1Fa*$, distinct from $*Fa*$. Intuitively, the idea is that $*Fa*$ exists (as a state of affairs) because dyadic exemplification relates F to a, in other words, because, step 1, $*E2Fa*$ exists in addition to $*Fa*$. Of course, step 2, this prompts us to ask what accounts for $*E2Fa*$, which leads to the postulation of a further distinct fact, $*E3E2Fa*$. And so on ad infinitum.

Fact infinitism

I have argued that this externalist regress is benign, since admitting it does not lead to a contradiction or totally implausible consequences, and that it leads to a positive view regarding the problem of unity, a view according to which each state of affairs, and more generally each complex, C, gives rise to what we might call an externalist Bradley series, C, C1, C2, ..., such that the existence as a complex of each member of the series is explained by the next member of the series.

The problem of unity does not arise just for states of affairs, but for any complex. And for any complex the externalist Bradley's regress can be used to provide an explanation of the unity of the complex. Consider for example ordinary physical objects. They can be assumed to be made up of physical parts. Thus suppose that object o is made up of parts p_1, \dots, p_n . How does o arise out of p_1, \dots, p_n ? We can answer that o is around because p_1, \dots, p_n are related in a certain way rather than another. That is, say, by relation R and not by R'. In other words, o exists (as a certain kind of ordinary object), because there is the fact $*Rp_1 \dots p_n*$. But, given fact infinitism, this can be so because there is the further fact $*E_{n+1}Rp_1 \dots p_n*$. For illustration, consider an object made just of two lego parts, say a red one r and a green one g plugged on top of r (let us neglect for simplicity's sake that g and r can be viewed as in turn made of further parts). Call this object gr. What makes gr one object (of the specific kind it is, i.e. such that its part g has the "superior" role and r the "inferior" role), as opposed to two disconnected items (or to a complex of another kind), is, we may say, the fact that g is plugged on top

of r , $*Tgr*$. Without this fact, gr would not be around, for g and r would not have been parts of an ordinary object or would have been parts of a different ordinary object. For example, had r been plugged on top of g (had $*Trg*$ existed instead of $*Tgr*$), we would have had another object, which we could call rg , instead of gr , an object with g as filling the inferior role and r the superior role. But as it is gr and the fact $*Tgr*$ exist. And thus, $*E3Tgr*$, $*E4E3Tgr*$, etc. must also exist. This is the approach that I called *fact infinitism*.

It might seem that the externalist regress at the heart of fact infinitism is not benign after all, I admitted in the above mentioned previous works, since it contradicts what we may call *Finitary Foundationalism* (I called it *Absolute foundationalism* in these previous works):

FF. *Finitary Foundationalism*. All explanatory chains are finite. That is, for any explanatory chain C , there is a finite set S of propositions such that (i) $C \supseteq S$, and (ii) for any proposition $P \in S$, if there is an *explicans* Q of P , then $Q \in S$.

An explanatory chain is a sequence of propositions such that any member P of the sequence, except the last one, if there is any, is explained by the following one, P' (so that P because P').² But then I tried to argue that FF can be dropped after all.³

Although I have not done it before, it should be noted that fact infinitism contradicts not only FF but also the more generic thesis of *General Foundationalism*:

GF. All explanatory chains are well-founded, i.e. they must have a last member (ground).

GF does not rule out infinite explanatory chains. It simply requires that any explanatory chain, whether finite or infinite, terminates with a last member. Thus, GF entails FF but not vice versa.

I granted that fact infinitism leads to the admission of infinite chains of ontological dependence. I had in mind an account of ontological dependence according to which the proposition that x exists is ontologically explained by the proposition that y exists if and only if x ontologically depends on y . (Schnieder 2006 has recently defended the view, considered in Lowe 1998, but not endorsed therein, that the biconditional here can be turned into a definitional link, thereby providing an analysis of ontological dependence in terms of the ontologically explanatory *because*. This perhaps puts the cart before the horse. One might say that the proposition $|x \text{ exists}|$ is explained by the proposition $|y \text{ exists}|$ because x ontologically depends on y and not the other way around. But this is another story. For our purposes it is enough to admit that there is the biconditional, whether or not it is backed up by Schnieder's analysis.) It should be noted that, since fact infinitism denies not only FF but also GF, it is committed to the existence not simply of infinite dependency chains, but more specifically to the existence of *non-wellfounded*, or *ungrounded*, chains of ontological dependence, i.e. such that they do not

² More precisely, we should speak of explanatory trees and nodes in such trees, rather than of explanatory chains or sequences, since of course a proposition may be jointly explained by more than one propositions. But for present purposes we can leave this complication aside.

³ There are other worries for fact infinitism that I have considered and taken care of. Other should be considered. See for example the criteria for deciding whether a regress is vicious in Maurin 2002 and the recent works by Jan Willem Wieland. I think all the worries can be taken care of, perhaps by distinguishing different senses in which explanations can be given and by admitting that explanation comes in degrees. But this is another story.

terminate with a last member or ground, or a collection thereof, which could be called (see below) the *ultimate ontological basis* of each preceding member of the series. In sum, fact infinitism admits:

NWF. *Ontological Non-Well-Foundedness*. There are ungrounded chains of ontological dependence.

And thus, conversely, fact infinitism rejects the denial of NWF, namely:

WF. *Ontological Well-Foundedness*. All chains of ontological dependence are grounded.

Admittedly, it is not obvious that one can reject WF, since it tends to be taken for granted. For example, this is what Lowe 1998 says (p. 158) regarding something like WF: “Such an ‘axiom of foundation’ is quite probably beyond conclusive proof and yet I find the vertiginous implications of its denial barely comprehensible.”⁴ In spite of this, I did not explore the issue of whether non-well-founded infinite chains of ontological dependence are acceptable, nor whether their existence, if accepted, is necessary or contingent.

Cameron on WF as contingently true

In a recent paper (2008) Cameron considers an approach to Bradley’s regress, as it arises for states of affairs, which is basically my fact infinitism and rightly notes that it leads to NWF. He then examines a number of arguments purporting to show that its denial, WF, is necessarily true and finds them wanting. This search supports, one may say, Lowe’s suggestion that we should take WF as an “axiom” (1998, p. 158), if we want to consider it as necessarily true, as Lowe seems inclined to do. Or alternatively, from the point of view of the fact infinitist, Cameron’s search backs up the option of upholding NWF rather than WF. But then Cameron argues that support can be given for the thesis that NWF is at least contingently true.

Before seeing why Cameron thinks so, let us review some of Cameron’s assumptions and terminology, which we can take for granted for present purposes. We shall say that *ontological dependence* is transitive, irreflexive and asymmetric and that such its converse, namely *ontological priority*. In contrast, *direct ontological dependence*, and its converse, *direct ontological priority* are irreflexive, asymmetric and non-transitive.⁵ Direct ontological dependence links x to y when x depends on y and there is no “intermediate” z such that x depends on z and z depends on y . An entity is ontologically *independent* or *fundamental* iff it does not depend on any entity. Further, an entity x has its *ultimate ontological basis* in y_1, \dots, y_n iff the latter are ontologically independent and for each y_i ($i = 1, 2, 3, \dots, n$) there is a chain of ontological dependence linking x to y_i [define *chain* and compare to *df* in Cameron 2008 at p. 4, 3d paragraph].

Let us now move to a summary of Cameron’s contentions. Cameron first arrives at this:

⁴ More precisely Lowe says this regarding the assumption that “there cannot be infinite descending chains of objects standing in relations of ‘strong’ existential dependency to one another”. For the distinction between strong and weak ontological dependency in Lowe see his 1998 p. 153, which refers back to (D1**), p. 147.

⁵ In many cases in the interest of brevity I shall leave out the qualifier “ontological,” as it can be supplied from context.

C1. The arguments on the market that try to prove that WF is a necessary truth fail and thus we have good reasons to think that WF is not a necessary truth.⁶

He then moves on to reach:

C2. WF is a contingent truth (a methodological principle akin to Ockham's razor), which does not rule out, so to speak, that there is a possible world in which NWF is true.

The support for C2 can be given by appealing to "theoretical utility," as follows (Cameron 2008, p. 12):

If we seek to explain some phenomena, then, other things being equal, it is better to give the same explanation of each phenomena than to give separate explanations of each phenomenon. A unified explanation of the phenomenon is a theoretical benefit. This seems to provide some evidence for the intuition under discussion [that WF is true]. For if there is an infinitely descending chain of ontological dependence [with no ultimate basis], then while everything that needs a metaphysical explanation (a grounding for its existence) has one, there is no explanation of everything that needs explaining. That is, it is true for every dependent x that the existence of x is explained by the existence of some prior object (or set of prior objects), but there is no collection of objects that explains the existence of every dependent x . This is a theoretical cost; it would be better to be able to give a common metaphysical explanation for every dependent entity. We can do this only if every dependent entity has its ultimate ontological basis in some collection of independent entities; so this provides reason to believe the intuition against infinite descent [with no ultimate basis] in metaphysical explanation.

In sum:

C3. NWF does not allow for a unified explanation of the existence of every dependent entity [for the existence of each such entity would have a distinct explanation (by appealing to the next member in the dependence chain in which the dependent entity in question belongs), but we could not have a unified explanation of the existence of every dependent entity by appealing to a collection of independent entities that explains the existence of every dependent entity].

C4. WF allows for a unified explanation of the existence of every dependent entity [by appealing to a collection of independent entities that explains the existence of every dependent entity].

In turn, C3 and C4 should back up the following:

C5. WF, rather than NWF is theoretically useful.

Moreover, Cameron assumes that:

C6. A theoretically useful thesis is at least contingently true.

⁶ I (in the previous works mentioned above) considered arguments against ungrounded infinite explanatory chains and Cameron considered different arguments in favour of WF. By putting together my objections to the arguments I considered and his objections to the arguments he considered, we have a stronger argument in favour of the thesis that WF is not necessarily true.

From C6, given C1, we get C2.

As Cameron notes, thesis C2 has one ramification that is interesting for our concerns. Here it is:

CR1. Wholes are not dependent on their parts (or at least it is only contingently true that they are).

The argument for CR1 provided by Cameron is this. Future physics may prove that the world is gunky, i.e., it involves the existence of *gunks* (wholes that can be infinitely decomposed into parts). Now, there seem to be two ways to allow for the existence of a gunk. Either we maintain that a whole depends on its parts and accept NWF, or deny that a whole does not depend on its parts thereby leaving room for WF. The assumption of WF thus provides a specific way to account for gunkiness, namely the acceptance of the thesis that a whole (in our actual world) does not depend on its parts.⁷

My answer to Cameron

As we saw, there are, according to Cameron, different phenomena that, *ceteris paribus*, should be given a common explanation, but are such that this can be done only if we uphold WF, rather than NWF. But, let us ask, what are these different phenomena? It seems they are all phenomena such as the existence of *x*, the existence of *y*, etc, where *x*, *y*, etc. are all the dependent entities. To put it otherwise,

⁷ Cameron considers two other ramification:

CR2. Leibniz's cosmological argument at most can prove that God actually exists, but not that it necessarily exists.

CR3. It is actually true that not everything is a mind-dependent entity, but it is not necessarily true.

The argument for CR2 is this. Leibniz's cosmological argument (if successful, see Cameron, p. 9) proves the existence of God by appealing to WF. But then, if WF is only contingently true, the argument only proves that God exists contingently. Since matters are so controversial at this juncture, it does not seem to me that this theistic consequence of Cameron's position can be used to assess the truth of the position in question and thus I shall not further comment on CR2.

As regards CR3, this is the argument for it. If every entity were mind-dependent (dependent on an episode of mental activity) then (given that there is no self-dependence) every mental entity would depend *ad infinitum* on another mental entity (p. 7). By the contingent truth of WF it follows that this is contingently false and thus some entity is not mind-dependent. But since WF is only contingently true, generalized mental-dependence could be true in some possible world. In this case as well we do not have, I think, new ground to assess Cameron position about WF one way or another. For the supporter of NWF of course has already room for the *possibility* of infinite dependence chains for mental entities. As regards establishing that there are some entities that are not mind-dependent, WF does not seem of much use. For the sensible supporter of the thesis that everything is mind-dependent simply means that everything that is not (*prima facie*) mental depends for its existence (and nature) on a mind and may well take a mind to be an ultimate or primitive entity (see Lowe 1998). The interesting task is to argue against the idea that each *prima facie* non-mental item depends on a mind and not (by upholding WF) to argue against the thesis that each mental entity in turn presupposes another mental entity, for that would be to argue against an uninteresting straw man thesis.

we are to give, if we can, a unified explanation of all the propositions of the kind $|x \text{ exists}|$, where x is a dependent entity. What is a unified explanation of these different propositions? The idea seems to be this: it is an explanation asserting that there are independent entities y_1, \dots, y_n such that each explanans $|x \text{ exists}|$ is ultimately explained by $|y_1 \text{ exists}|, \dots, |y_n \text{ exists}|$. So at bottom the idea is that WF grants, whereas NWF does not, the theoretical option of allowing for the idea that all dependent entities depend for their existence on the same collection of independent entities. But this idea is likely to sound so unpalatable to so many philosophers, including some that are already independently inclined to accept WF, that it can hardly be used to back up WF. Take for example Lowe. He accepts WF (1998, p. 158), but he also accepts the idea that different dependent entities, e.g., a certain smile s of Tom and a certain grin g of Mary, are each ultimately dependent on two distinct primitive substances, Tom's and Mary selves, respectively (or at least takes this view very seriously; cf. 1998, p. 173). And, as I understand Lowe, there should be no temptation to say that s also depends on Mary's self and g also depends on Tom's self.

Perhaps, Cameron has in mind something like God as the one independent entity that can constitute the ultimate ontological basis for each independent entity and is trying to say that the supporter of WF can, while the supporter of NWF cannot, claim that the existence of each dependent entity is explained by appealing to its dependence on God. But it seems to me that the fact infinitist, who supports NWF simply because of her endorsement of the externalist Bradley's regress has no serious trouble in making the same theistic move, if she wishes to. For just like the theist who believes that all substances ultimately depend on God can claim that there are created substances that are independent in the sense they depend only on God (who strictly speaking is the only independent substance; Schnieder 2006), the theist fact infinitist can say that, *letting dependence on God aside*, each member of a Bradley series $F_a, E_2F_a, E_3F_a, \dots$, fails to have an ultimate ontological basis.

But perhaps the unified ontological explanation that Cameron has in mind is this. For each dependent x , the existence of x is explained in the same way, i.e., by appealing to the same collection C of independent entities in the sense that it is claimed that x ultimately depends on the members of a subcollection of C (another dependent entity, y , will depend on the members of a different subcollection of C). But this is hardly an interesting explanation worth having. It is like saying that there is a common causal explanation of two phenomena, the breaking of the glass and John's recovery from pneumonia because there is a collection of events, namely $\{\text{Tom's hurling a stone, John's taking antibiotics}\}$, such that one of them caused the glass to break and the other John to recover.

In sum, it seems to me that Cameron's appeal to the opportunity of offering unified explanations does not offer any good reason to think that WF is contingently true. On the other hand, the ramification CR1, coming from taking WF as contingently true, can be turned into further support for NWF.

For consider the assumption that Cameron grants, namely that it could turn out that there is a gunky object. Given a gunky object, we have to give up either WF or the principle that a whole always depends on its parts (call it *Dependence on Parts*, in short *DP*). As Cameron upholds WF, he sacrifices the principle, *DP*, that a whole depends on its parts. It is not clear whether he wants to say that *DP* is contingently false, proven to be false in our world by the discovery of the gunky object (my favourite interpretation), or more generally that it should be taken as necessarily false. Either way it seems to me that the sacrifice of *DP* is a high price, much higher than sacrificing WF, for dependence on parts seems to be constitutive of the notion of whole. I am not saying here that we cannot conceive of an object such as a horse or even a table in such a way that it is taken to be capable of surviving the loss or

replacement of parts. But if we do this we must conceive of the object as distinct from the different wholes that “embody” the surviving object at different times (alternatively we can accept mereological essentialism and “sequentialism” and claim *à la* Chisholm that only simples are self-identical through time in the “strict and philosophical sense”).

The necessity of NWF

Ordinary objects and Armstrong-style states of affairs are importantly different from sets, (unrestricted) mereological sums and (Kaplan-style, complex) propositions in the following respect. The former do, while the latter do not (in general), *supervene on their constituents*. A complex item c supervenes on its constituents if, given that the constituents exist, c *must* also exist. For example, given that the property W (being white) and c (Clinton) exist, the set $\{W, c\}$ and the mereological sum $W+c$ cannot fail to exist (on the assumption that there are such things as sets and mereological sums). In contrast, although $*Wc*$ exists (as Clinton is white), this fact might have failed to exist (as Clinton could have been, say, black). Similarly, although the lego object gr , considered above, exists, it might have failed to exist in spite of the existence of g and r (there could have been rg in its stead, the object with r plugged on top of g). As regards propositions, note that, given the existence of a concept (type I, fine-grained, property in Bealer’s (1982) sense) C and an object x , the proposition $|Cx|$ must exist (although it could be false).

Now, I want to raise the following issue. Does the problem of unity arise for complexes that supervene on their constituents? Or, in other words, can the question (P1), in the case of such complexes, be simply put to rest by answering that their existence *necessarily* follows from the existence of their constituents? Many ontologists, for example Vallicella, are inclined to answer “yes”. But it seems to me (in agreement, I think with both Bradley and Russell) that the answer is a clear “no” (as I noted *en passant* in Orilia 2007). Gaskin 2008 argues this point (and ends up accepting something akin to fact infinitism) and it seems to me that we can further press the point by bringing (P2) to the fore. For example, if we admit unrestricted mereological sums in addition to sets, we should say that both the set $\{F, a\}$ and the mereological sum $F+a$ supervene on F and a . Yet, they do not differ because of some constituents, for they have the same ones. Now, (P2) asks us to explain what makes them different and thus the problem of unity cannot be solved by simply saying that they must exist, given that F and a exist. Similarly, consider the proposition $|Cx|$ and the set $\{C, x\}$. They can be assumed to have the same constituents, and thus, given (P2), we should feel urged to explain how they differ.

Fact infinitism can provide answers. $\{F, a\}$ and $F+a$ differ, because the former exist by virtue of F and a being related by the relation **constituting-one-set** (**S** in short), i.e., by virtue of the existence of the state of affair **SFa**. Which in turn exists by virtue of the existence of **E3SFa**, etc. In contrast $F+a$ exist because F and a are related by **constitute a mereological sum** (**M**), i.e. by virtue of the existence of **MFa** (and thus of **E3MFa**, etc.).

In conclusion, in every world in which there are complexes, even simply complexes that supervene on their constituents, there are ungrounded chains of ontological dependence. Perhaps there can be a world without concrete objects. Some think however that some abstract objects such as numbers and propositions must necessarily exist. In a world with just such entities still there are complexes, e.g., the state of affairs **2 is even**, but all such complexes are supervenient on their

constituents. As we have seen even such complexes generate ungrounded chains. Thus, we can claim that NWF is necessarily true.

Thus, at least for those who think that there are necessary objects, e.g., abstract objects, it follows that NWF is absolutely necessary. For those who think that there are no necessary objects, NWF is necessary at least in a restricted sense: it is necessarily true, given that there exists something or other.

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