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Absence Causation and a Liberal Theory of Causal Explanation

Abstract

For the framework of event causation—i.e., the framework according to which causation is a relation between events—absences, or omissions, pose a problem. Absences, it is generally agreed, are not events, so under the framework of event causation they cannot be causally related. But, as a matter of fact, absences are often taken to be causes or effects. The problem of absence causation is thus how to make sense of causation that apparently involves absences as causes or effects. In an influential paper, Helen Beebee offers a partial solution to the problem by giving an account of causation *by* absence (i.e. causation in which absences are supposed to be causes). I argue that Beebee's account can be extended to cover causation *of* absence (i.e. causation in which absences are supposed to be effects) as well. More importantly, I argue that the extended Beebeeian account calls for a major modification to David Lewis' theory of causal explanation, usually taken as standard. Compared to the standard theory, the result of this modification, which I shall call 'the liberal theory of causal explanation', has, among other things, the advantage of being able to accommodate causal explanations in which the explananda are not given in terms of events.

Keywords: absence causation, causal explanation, David Lewis, liberal theory of causal explanation

1. Introduction

For the framework of event causation—i.e., the framework according to which causation is a relation between events—absences, or omissions[1], pose a problem.

[1] Omissions are usually understood to be absences of a particular kind of events, namely *actions*. In this paper I will talk about absences in general, whether they are in connection with actions or non-action events.

Absences, as we usually understand them, are not events; rather, they seem to consist in the non-occurrence of certain events. So under the framework of event causation they cannot be causally related. But, at least on the face of it, absences can sometimes be causes or effects. For example, Leo's going on vacation was a cause of his failure to water his backyard flowers, which in turn was a cause of their death. Leo's failure to water the flowers, as an absence of his watering them, seems to have causal antecedents as well as consequents. According to the way we usually speak, it is commonplace to talk about things such as famine due to food *shortage*, fire as caused by *negligence*, *loss* of memory as a result of concussion, and the like. But, according to event causation, these are strange things to say. The problem of absence causation, then, is how to make sense of causation when it apparently involves absences as causes or effects.

There are some straightforward options for solving this problem. We might suggest that event causation is dispensable. Perhaps causation is a relation between facts, rather than events (Bennett 1988; Mellor 1995). If[2] so, there seems to be no serious difficulty in holding that absences, construed as negative facts, can be causally related. Or perhaps causation is somehow not a relation (Mellor 1995), or at least not always a relation (Lewis 2004b). If so, absences may in some way take part in causation without taking part as causal relata. Or, to keep event causation intact, it could be maintained that causation is indeed a relation and that absences are indeed events—albeit of a special, negative, kind, which somehow essentially did not occur (Chisholm 1970; Peterson 1989). If so, it seems that absences construed as negative events cease to be a threat.[3]

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[2] Obviously, this and the following two 'if's are all big ones, and concern issues which I cannot pursue in this paper.

[3] Note that the threat will persist for an event-causalist who upholds a kind of energy-flow theory of causation (e.g. Fair [1979] and Dowe [2000]). The basic idea of the energy-flow theory is to understand causation in terms of some kind of transfer of energy (or some other preferred physical quantities), but it seems difficult to maintain that energy can be transferred between negative events. That being said, for more popular theories of causation, such as regularity theories and counterfactual theories, construing absences as negative events should suffice to defuse the problem of absence causation.

Nonetheless, event causation is a nearly standard framework within which contemporary philosophers talk about causation,[4] and whether the notion of negative event can be plausibly maintained is, at best, highly controversial. So, if possible, it would be nice to find a solution to the problem of absence causation without either giving up event causation or appealing to negative events. In a widely-cited paper, Helen Beebee (2004)[5] offers a solution of just this kind—upholding event causation while rejecting negative events, she contends that common sense is simply wrong when judging absences to be causes.

Beebee's account, however, is only a partial solution to the problem of absence causation, for it only deals with causation *by* absence (i.e., causation in which absences are supposed to be *causes*). In this paper, I shall argue that Beebee's account can be extended to also cover causation *of* absence (i.e., causation in which absences are supposed to be *effects*). More importantly, I shall argue that the extended Beebeeian account calls for a major modification to the standard Lewisian theory of causal explanation. Compared to the standard theory, the result of this modification, which I shall call 'the liberal theory of

[4] Whether the framework of event causation is superior to its rivals and is thus deservedly 'nearly standard' is a question to which I cannot possibly do justice here—to answer this question we need to access, likely in a case-by-case manner, the merits and demerits of taking events rather than, say, objects, facts, property instantiations, tropes, etc., as causal relata. Nevertheless, it should be pointed out that a major obstacle to adopting event causation is the problem of absence causation. If the problem can be neutralized without giving up event causation (or resorting to some exotic measures such as positing negative events), as I hope in this paper it can, then the obstacle is removed. Besides this, I also would like to mention two methodological considerations in favor of event causation. First, since the framework of event causation took shape (mainly owing to Davidson's and Lewis' work), it has been proved very fruitful in generating interesting discussions about causation. You get a lot of interesting stuff if you work within this framework. Second, and more weightily, compared to the view that causation always relates events, it is much less controversial that at least *sometimes* causation relates events. Given this, and given the fairly plausible assumption that the verb 'cause' is univocal with respect to all sorts of causal relata (but see Vendler [1967, ch. 5] and Eells [1991: 6]), it follows that the nature of the causal *relation*—that is, the nature of causation insofar as how, but not what, things are related is concerned—can be adequately studied by examining event causation *alone* (this, I believe, partly explains why the Davidson–Lewis approach has been fruitful).

[5] In what follows all references to Beebee are from this paper.

causal explanation', has, among other things, the advantage of being able to accommodate causal explanations in which the explananda are not given in terms of events.

2. Beebee's Account

To appreciate Beebee's account, a few words need to be said about a distinction Davidson made between *causation* and *causal explanation*. According to Davidson (1967), causation is a relation between events, not facts, even though facts about causally related events are often of explanatory significance. (An example from Davidson: when we say that 'the collapse was caused by the fact that the bolt gave way so suddenly', from a philosophical point of view what we really mean is that the suddenness with which the bolt gave way helps explain *why* the collapse took place. The suddenness, though explanatorily significant, is not a cause of the collapse. Rather, the cause is the bolt's giving way taken to be a spatiotemporally bound particular, namely an event.) If Davidson is right about this, then statements in the surface form of 'F*c* causes F*e*', where *c* and *e* are events and F*c* and F*e* are certain facts about the events, should not be regarded as genuine reports of causation. What we really mean by the 'causes' in the surface form are made explicit if we say 'causally explains' instead.[6]

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[6] Some may deny that there is a distinction to be made between causation and causal explanation due to certain views they hold about what the causal relata are. For example, Bennett (1988, sect. 13) and Mellor (1995, esp. chs. 9 & 11) both take 'C causes E' and 'C causally explains E' (C and E are both facts) to be interchangeable, for the simple reason that what they take to be causal relata—that is, facts—also fit the bill for being causal explanantia and explananda. Manipulationists such as Hitchcock (1993; 1996) and Woodward (2003) take it that causal relata are to be understood as 'variables', or more precisely, as 'changes in the values of variables' (these changes are manipulable in some proper counterfactual sense, hence the name 'manipulationist'). For them, the Davidsonian distinction between causation and causal explanation is also misplaced, for it is always the case that changes in the value of one or more variables not only cause, but also causally explain, changes in the value of other variables.

But for those of us who take causation to be extensional, transitive and, less certainly but still plausibly, intrinsic (to causal relata and their properties) and take explanation—causal and otherwise—to be intensional, non-transitive and to some considerable extent extrinsic (to explanada and explanantia and their meanings), the distinction between causation and causal

Inspired by Davidson's distinction, Beebee claims that 'absences can figure in causal explanation even though they do not cause anything' (p. 293); if so, she is then in a position to say that 'common sense judges some absences to be causes because it fails to distinguish between causation and causal explanation' (*ibid*.) In other words, Beebee tries to deny absences' role in the metaphysics of causing[7] (and to that extent save event causation), while at the same time she also tries to do justice to the commonsense conviction by saying that it has conflated the causally explanatory role that is indeed played by absences with the causing role that they never play. In short, Beebee's account aims to translate supposed causation by absence into causal explanation by absence. In our example, even though Leo's failure to water the flowers did not cause them to die, still one way to causally explain the flowers' death is to refer to the fact that Leo did *not* water them. The non-watering, which did not cause the flowers' death (or anything else), can nevertheless causally explain the death. In view of this, the statement, 'The non-watering caused the flowers' death', is false when taken literally as a statement about a causal relation in which the non-watering is a cause, but it may well be true when taken as a disguised statement of causal explanation in which the non-watering is a negative causal explanans. When common sense judges the non-watering to be a cause, we know that it is wrong; but we should know better, namely that it is wrong for an understandable reason—that it mistakes a negative causal explanans for a negative cause.

For the purposes of this paper the above sketch of Beebee's account will be adequate, for I am not concerned with the overall plausibility of her account[8] but

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explanation is as obvious as any distinction can get. In my view, we should not really hold our sound judgment of there being such a distinction hostage to our theory of causal relata. If the Davidsonian thesis of events as causal relata renders such a distinction inevitable, it should indeed be regarded as a virtue of that thesis.

[7] Beebee has only addressed the *causing* part of the problem of absence causation. Related issues will be discussed in the next section.

[8] To assess the overall plausibility of Beebee's account one has to say something about Beebee's claim that common sense *misjudges* causal explanation by absence as causation by absence. But it seems to me that this claim, like any other claims about what common sense misjudges, or for

only a thesis on which her account crucially depends. To see this thesis, notice that if, as Beebee maintains, what common sense (mis)judges to be causation by absence is actually only causal explanation by absence, it must be established, in the first place, that there is indeed such a thing as causal explanation by absence. But here a question emerges. The question, as Beebee herself is well aware, is 'How […] can a causal explanation be genuinely *causal* if the explanans doesn't stand to the explanandum as cause to effect?' (p. 302) This question is pertinent, for in causal explanation a common practice is to cite one or more causes to explain the explanandum event; but how can one maintain absences to be *causally* explanatory, while at the same time deny them to be *causes*?

At this point, however, Beebee contends that 'the explanans of a causal explanantion need not stand to the explanandum as cause to effect' (p. 301). In line with Lewis' theory of causal explanation (1986), Beebee takes it that there are more ways to explain an event than simply citing one or more of its causes. This seems right, because sometimes an event can be explained by providing in one way or another some *structural information about its causal history*. In particular, the structural information may be existential—that is, such that an event of a certain kind is included in a causal history, as in 'JFK died because *somebody* shot him'; likewise, it may be *negatively* existential—that is, such that an event of a certain kind is not included in the causal history, as in 'JFK died because *nobody* took the bullet for him'. Note here that it is not that the either of the above explanations works by way of citing causes of the explanandum event, for neither somebody's shooting JFK nor nobody's taking the bullet for him is essentially an event[9] and—suppose, as event causation requires, that only

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that matter *actually* judges, can hardly be rigorously argued. That said, for an empirical study of the issue at hand (with a conclusion against Beebee's), see Livengood and Machery (2007).

[9] Why is somebody's shooting JFK not an event? Because the supposed event would be overly disjunctive, to a degree that no sensible theory of events should tolerate. Somebody's shooting JFK would have to be Tom's shooting JFK, or Jamie's shooting JFK, or so on and so forth. The situation for the supposed event of nobody's taking the bullet is even bitterer, for its constituent events would have to be negative in the first place!

events can be causes—therefore neither are they causes. Nonetheless, as long as the explanantia do provide some relevant [10] information—positive or negative—about the causal history of the explanandum event, both explanations make sense. Thus, on Beebee's view, causal explanations involving reference to absences can simply be seen as explanations of a kind in which *negative* explanatory information is provided. Such explanations are causal, in the sense that negative explanantia are about the causal histories of explanandum events.[11]

It should by now be clear that crucial to Beebee's treatment of absence causation is a thesis of negative explanantia of causal explanation, which we can formulate as:

(NET) Negative information N explains an event *e* in virtue of the fact that N is about the causal history of *e*.

NET, as anyone familiar with Lewis' theory of causal explanation will see straight off, fits well into Lewis' theory. In fact, we could even attribute NET to Lewis himself, for at one point he actually mentions it in its most basic form (1986: 220). In any case, as long as we endorse Lewis' dictum that 'to explain[12] an event is to provide some information about its causal history' (1986: 217), it won't be a surprise that we also endorse NET,

[10] Explanatory relevancy is to a great extent a matter of pragmatics and at any rate is something I have to assume without argument. Everything about explanation hinges upon it, so nothing I say about explanation in this paper *particularly* hinges upon it. When talking about explanations I'll always assume that the explanatory information under consideration is suitably relevant.

[11] Hereafter, when I say that an absence explains or gets explained, it should be understood as an abbreviation for saying that the absence, i.e. *a piece of negative information*, explains or gets explained. Similarly, when I say that an event explains or gets explained, what I mean is that *the information of the occurrence of the event* explains or gets explained.

[12] Here it would be redundant for Lewis to add that the explanation in question is causal, as he does not think that there is non-causal explanation of events (Lewis 1986: 221–4). I won't take sides on this issue, but for brevity will from now on omit the qualification 'causal' when talking about causal explanations, restoring it only when there is danger of confusion between causal and non-causal explanations.

according to which an event can be explained by some negative information about its causal history.

3. An Extension of Beebee's Account

Beebee's account, whether successful or not, has addressed only half of the problem of absence causation. Note that her paper is entitled 'Causing and Nothingness'; and in the paper only causation *by* absence—not causation *of* absence—is discussed. In other words, Beebee's primary concern is with alleged negative *causes*, not negative *effects* (as in cases of prevention, e.g., 'Leo's going on vacation prevented him from watering the flowers'). Can, one might wonder, Beebee's account—or something akin—be applied to cases of the latter kind?

I think the answer is yes. But it is not straightforward to see how. Consider again the example of Leo. Why is Leo's non-watering (mistakenly) thought to be a cause of the flowers' death? According to Beebee, it is because the non-watering explains the death. But then one can ask why Leo's going on vacation is (mistakenly) thought to be a cause of the non-watering. To this question, it appears that a parallel Beebeeian answer would be that the going on vacation explains the non-watering. But what rationale is there, if we follow Beebee's line of thinking, to back this parallel? Note that underlying the claim that the non-watering explains the flowers' death is Beebee's conviction that the non-watering is about *the causal history* of the flowers' death. But a similar about-relation, so to speak, cannot be said to hold between Leo's going on vacation, on the one hand, and his non-watering, on the other. Obviously, the going on vacation is not a cause of the non-watering, but neither is it about the causal history of the non-watering. This is so, simply because on Beebee's view the non-watering as an absence is not caused by anything, and, *a fortiori*, has no causal history.

The above line of reasoning, however, is misguided. The gist of Beebee's account of causation *by* absence, let's recall, is that in a causal explanation the

explanans need not be given in terms of a cause of the explanandum event, but can be merely given in terms of some information—in particular, negative information—about the causal history of the explanandum event. But if so, a Beebeeian account of causation *of* absence should not unduly require that in a causal explanation the explanandum must be given in terms of an effect of the explanans event either. Rather, such an account should allow, in a genuinely parallel manner to Beebee's original account, that in a causal explanation the explanandum can be given merely in terms of some information—in particular, negative information—about the *causal sequel*[13] of the explanans event. (I understand a causal sequel to be a causal chain stemming from an event—a causal sequel is thus supposed to be the opposite of a causal history, which is a causal chain leading up to the event.)[14] In other words, when an absence has a causal explanation, it is not because *it* has a causal history, but because *the event of which the absence is supposed to be an effect* has a causal sequel. Now, just as Leo's non-watering is a piece of negative information about the causal history of the flowers' death, so the non-watering is negative information about the causal sequel of Leo's going on vacation. In view of this, it therefore makes sense to say that the non-watering, in virtue of the fact that it is a piece of negative information about the causal sequel of the going on vacation, is explained by the going on vacation.[15]

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[13] This term was suggested to me by David Oderberg. My discussion in this and the next paragraphs has greatly benefitted from Oderberg's critical comments.

[14] Note that, unless it is some very simple possible worlds or some very small microphysical parts of this world that we are concerned with, there are always many, if not infinitely many, causal chains stemming from an event, as well as leading up to it. There are, for that matter, as many causal histories and sequels. When I speak of 'the' causal history/sequel of a certain event, this should be understood as either referring to all the event's causal histories/sequels taken as a whole, or some particular causal history/sequel under consideration.

[15] Also in an attempt to extend Beebee's account, Varzi (2007: 162) makes some similar points as above, but in my view makes them neither systemic nor clear enough. In any case, he does not take the extended Beebeeian account seriously enough to envisage a major modification to the standard Lewisian theory of causal explanation, the discussion of which will be my focus in this paper.

So in order to make sense of absences' being causally *explainable* along Beebee's line of thinking, the following thesis of negative explananda of causal explanation needs to be invoked:

(NED) Negative information N is explained in terms of an event *e* in virtue of the fact that N is about the causal sequel of *e*.

Unlike NET, however, NED does not fit into any familiar theories of causal explanation. Later on we will see more examples in connection with NED. For now, here is just one more example. Suppose someone asks why I am *not* holding an[16] apple, and I reply that it is because I just ate it. How can we make sense of this explanation? According to NED, the explanation is causal, in that the explanandum, i.e. my not holding the apple, is negative information about the causal sequel of the explanans event, i.e. my eating the apple. What is the causal sequel in question? It is this: my eating the apple caused, among other things, the apple to go into my stomach, to be digested, and so on. The non-holding can be thought of as negative information about this causal sequel, in particular for the fact that my holding of the apple is *incompatible* with this causal sequel. Given that the apple went into my stomach, it is not and cannot be the case that I am also holding it. So there is a causal explanation of why I am not holding it.

It is easy to see that joining together NET and NED will give us the following overall thesis of negative explanantia and negative explananda of causal explanation, according to which a causal explanation may have absences both as the explanans and the explanandum:

(NNC) Negative information N explains negative information N' in virtue of the fact that N is about the causal history of an event *e*, and N' is about the causal sequel of *e*.

[16] Here by 'an' I mean particularity. By contrast, to explain why I'm not holding *any* apple is to explain something quite different.

Two things should be noted. First, causal history and causal sequel are relative notions. A causal history of a given event is also a causal sequel of another event, provided that the first event belongs to a causal chain in which the second event plays an earlier part. So it makes no material difference whether we say, as NNC puts it, that a piece of negative information about the causal history of an event explains another piece of negative information about the causal sequel of the event, on the one hand, or say instead that a piece of negative information about an earlier part of a causal chain explains another piece of negative information about a later part of the chain, on the other. Second, if both the causal history and causal sequel in NNC are understood as including *e* itself, it follows from NNC that a piece of negative information about an event can be used to explain another piece of negative information about one and the same event—in other words, two different pieces of negative information about the same event can enter into an explanatory relation.[17]

[17] An anonymous referee raises a doubt as to how, supposing we are not considering far-out cases of self-causation, two pieces of (negative or not) information about one and the same event can ever enter into an explanatory relation that is *causal*. To this reasonable doubt let me clarify that, in suggesting the possibility (of two pieces of information about a same event entering into a causally-explanatory relation), what I have in mind is mainly a strategy that can potentially be used to deal with the problem of simultaneous causation. While this is not the place to fully unfold the strategy, here are some basic thoughts. The problem of simultaneous causation arises because there appear to be cases of simultaneous causation (Kant's example of the cushion, etc.), but according to some well-established theories of physics (the theory of rigidity and the special theory of relativity), the alleged cases are not *genuine* cases of simultaneous causation. In defense, the proponent of simultaneous causation may argue, perhaps by digging into some details of the metaphysical structure of causally-related events (Brand 1980) or that of time (Huemer and Kovitz 2003), that, with all due respect to the physical theories, some (or even all) causal relations examined from a subtle metaphysical point of view can't but be simultaneous. Now, it seems to me that this line of argument in support of simultaneous causation is, even if promising, not conclusive. Take Kant's Cushion—a ball is lying on a cushion, and the presence of the ball causes a depression in the cushion. The opponent of simultaneous causation may insist that the presence of the ball—more precisely, the presence of the ball in contact with the cushion—and the depression in the cushion are not themselves *events*, but two *descriptions* of one and the same

4. A Liberal Theory of Causal Explanation

Now, it seems that, given NET, we don't have to look very far to find NED—or NNC, for that matter. Why did Beebee herself fail to spell this out? This is perplexing, for equipped with NED she would be able to put into place an account of causation of absence with style and flourish and, by combining it with her original account of causation by absence, give a total Beebeeian solution to the problem of absence causation.

I suspect that Beebee fails to spell out NED because adopting it would involve a departure from the standard Lewisian theory of causal explanation. As we saw above, NET, i.e., the idea that an event can be explained by some negative information about its causal history, rests on Lewis' thesis of causal explanation, that is, 'to explain an event is to provide some information about its causal history'. By invoking NET, Beebee claims that an event being explained by some negative information about its causal history is what the so-called causation by absence is actually all about—in short, this is how Beebee demystifies the notion of causation *by* absence. Now, to demystify the notion of causation *of* absence in a similar manner, as we have seen, the extended Beebeeian account declares that the so-called causation of absence is actually only an explanation in which some negative information about the causal sequel of an event is explained in terms of the event. This account, of course, makes little sense unless NED, according to which an absence as negative information about the causal sequel of an event can be explained in terms of the event, is invoked. But—and here comes the

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event (namely the ball's lying on the cushion). If 'descriptions' here are broadly construed as pieces of information about the ball's lying, then, given the above suggested thesis, viz., that two pieces of information about the same event can enter into a causally-explanatory relation, it is open to the opponent of simultaneous causation to say that what happens in Cushion is not that the presence of the ball *causes* the depression in the cushion, but only that it *causally explains* the depression. It is also notable in advance that, supposing that the suggested way of understanding alleged cases of simultaneous causation is feasible and generalizable, this would then add a small advantage (besides the two major ones that I will discuss in section 5) to adopting what I will later call 'the liberal theory of causal explanation'.

problem—NED is at odds with the standard Lewisian theory of causal explanation, for the standard theory is meant to show how *events*, not simply anything, are explained. Both Lewis and Beebee think, as we assumed from the very beginning, that absences are not events. So any explanation in which an absence is taken to be the explanandum will fall outside of the scope of the standard Lewisian theory of causal explanation. Sure, absences can be explained in various other ways (more on this later). But, in line with the standard Lewisian theory, it has to be maintained that those explanations in which absences, rather than events, are explained cannot in any trivial sense be regarded as *causal*.

I said that what is in question here is the 'standard' Lewisian theory, because, while according to Lewis' main thesis of causal explanation—viz., to explain an event is to provide some information about its causal history—causal explananda proper are events, in one place he does briefly mention that things other than events can also be causally explained. In connection with his discussion of extrinsic and disjunctive events, he writes:

> If there are no extrinsic or disjunctive events to be caused, still there are extrinsic or disjunctive truths about regions to be explained. They can be explained, of course. And their explanations can be mostly or entirely causal, even if my theses about causal explanation of events *do not apply directly*. The explanandum truth is *made true* by a pattern of genuine, occurrent events. (This making true is logical, not causal.) These events have their causal histories. Explanatory information about the explanandum truth consists in part of noncausal information about the truth-making pattern itself: what sort of pattern it is, and what events comprise it. And it consists in part of information about the causal histories of the events that comprise the pattern. (1986: 269; my emphasis)

According to Lewis, then, even though the so-called extrinsic or disjunctive events cannot themselves be causally explained (for there are no such events to begin with), extrinsic or disjunctive truths,[18] which are made true by patterns of

[18] The truths Lewis is concerned with here are contingent ones only. Necessary truths, e.g.

genuine events, nevertheless can. Not being events and thus having no causal histories, however, extrinsic or disjunctive truths can only be causally explained in a derivative sense—that is, they can be explained by information about the causal histories of their truth-making events.

It should be pointed out that, as a supplement to his main thesis of causal explanation, Lewis' view here lacks generality. It is not clear whether in his view *all* truths can be causally explained, in a similar way to extrinsic or disjunctive truths. More importantly, and in a way that is more germane to our topic, it seems that a generalized Lewisian view would immediately run into difficulty when it comes to showing how *negative* truths can be explained. This is because, as is well known, it is not clear whether negative truths are made true by anything at all.[19] And, even if they are made true, it seems safe to say that they cannot, as a generalized Lewisian view would require, be made true by patterns of genuine (positive) *events*. While laboring on this point would detain us for too long, here are some basic thoughts. What event, if any, is there to make it true that Leo did not water the flowers? The kind of event we are after, it seems reasonable to think, has to be something Leo did *instead of* watering the flowers. To name one such event, let's say that it is his strolling down the Champs-Élysées. But on reflection it is not difficult to see that Leo's strolling down the Champs-Élysées is neither necessary nor sufficient for the truth that he did not water the flowers. It is unnecessary, for insofar as Leo's strolling down the Champs-Élysées will do, his strolling down the Chang'an Street instead would do just as well; it is insufficient, for Leo's strolling down the Champs-Élysées won't do on its own—in order to make it true that Leo did not water the flowers, it has to be added that his strolling down the Champs-Élysées is such that he was not at the same time operating a remote control of the sprinklers in his backyard, or something to that effect. Understandably, with regard to the latter point one may

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mathematical truths, are irrelevant to his discussion, for (arguably) necessary truths are not made true by anything. In what follows by 'truth' simpliciter I also mean contingent truths only.

[19] For recent discussion on this issue, see Molnar (2000) and Dodd (2007).

claim that Leo's actual strolling is *identical* with his strolling without operating a remote control. But still it remains plausible to say that Leo's actual strolling fulfills the truth making, only insofar as *nothing* in the event consists in, or otherwise facilitates, a watering of the flowers. It therefore seems to be this *negative aspect* of Leo's actual strolling, strictly speaking, that is responsible for the truth making. And if events, as we have assumed, cannot be negative, it follows that the non-watering cannot be made true by events after all.

I have argued that, while the standard Lewisian theory of causal explanation is in tension with the extended Beebeeian account of causation of absence, a laxer version of the standard theory as suggested by Lewis himself, i.e. the truth-making theory, is still unacceptable (at the very least when taking into consideration the question as to how negative truths are explained) and thus cannot offer safe ground for the extended Beebeeian account. How, then, should we proceed? The key point, as I see it, is to observe that, while for the purpose of grounding the extended Beebeeian account the standard theory is too tight, Lewis' own laxer version of the standard theory is in that respect not better. Indeed, the laxer version fails precisely because as a general theory of causal explanation it is still too tight. And the way forward, for the purpose of grounding the extended Beebeeian account, as well as making a better theory of causal explanation, is to liberalize the standard Lewisian theory still further.

Let me first explain why I think Lewis' laxer version of the standard theory remains too tight. Lewis (1986) didn't say why he thinks that in causal explanation the explananda have to be either themselves events or made true by events (for the sake of convenience, from now on let's say that there is a *metaphysical association* between the explananda and some events just in case the Lewisian requirements obtain: that is to say, the explananda are either themselves these events or are made true by these events). It seems that Lewis just assumed this. A rationale that may underlie his assumption, though, is at hand. It seems natural to think that, in order for an explanatory relation to be

causal, it has to be in a certain way *anchored* to a corresponding causal relation. Suppose we agree with Lewis in thinking that the explanatory relation need not be anchored to the causal relation such that the explanans is metaphysically associated with the cause. It would then appear that the only alternative is to maintain the metaphysical association between the explanandum and the effect. Obviously, the thought is that the metaphysical association between the explanans and the cause, on the one hand, and the association between the explanandum and the effect, on the other, cannot both be given up. For the worry is that, after losing both of the associations, the explanation would cease to be anchored to the causal relation altogether, and thus would cease to be a causal explanation.

But the worry is, to begin with, biased. Even if we grant that causal explanation can only be anchored to its base causal relation either by the cause-explanans association or the effect-explanandum association, it is hard to see why the latter is *particularly* indispensable. Of course, if effect is indispensable for causation in a way that cause is not, it may be that, accordingly, the effect-explanandum association is also indispensable for causal explanation in a way the cause-explanans association is not. But, as far as I can see, it can't be that effect is indispensable for causation in a way cause is not. That it can't be so can readily be seen in the fact that causation is generally thought to be an iterative relation—that is, all causes are themselves also effects, and all effects are themselves also causes.[20] If effect were in some way indispensable for causation, while cause were not, then causal iteration would not hold.

More importantly, the notion of metaphysical association is unnecessarily strong for the purpose of anchoring causal explanation to causation. Recall NET,

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[20] One may rejoinder by citing God as a cause but not an effect, or, better still, by citing the Big Bang. While I have no comment on God (partly because He is not supposed to be an event-cause anyway), with regard to the Big Bang it is interesting to note that, partly driven by a kind of philosophical distaste for the notion of an uncaused cause, in the past decade or so some scientists have begun to challenge the Big Bang as the ultimate beginning of the universe. See Clegg (2011).

according to which an event is explained by some negative information—i.e., the absence explanans—about its causal history. In this case, the absence explanans is, though metaphysically unassociated with any cause of the explanandum event, nevertheless *inferentially* associated with the latter's causal history, in the sense that from the causal history it can be inferred that the absence explanans holds. Similarly, NED, according to which some negative information—i.e., the absence explanandum—about the causal sequel of an event is explained in terms of the event, sanctions that the absence explanandum is inferentially associated with the causal sequel of the explanans event. It is true that the absence explanandum need not at the same time be metaphysically associated with anything causal. But why should it be? The standard Lewisian theory of causal explanation allows that an absence explanans need not be metaphysically associated with any cause. If an absence explanans and a cause can be associated in this looser way, that is, by way of the absence explanans being inferentially associated with a causal history in which the cause plays a part, why can't an absence explanandum and an effect be associated in the same way, where the absence explanandum would be inferentially associated with a causal sequel in which the effect plays a part? We can all agree that one important contribution Lewis made to the study of causal explanation was to show that other than metaphysical association there are more modes of association between cause and explanans. But shouldn't we likewise allow other modes of association between effect and explanandum? Indeed we should, given the impartiality between the cause-explanans and effect-explanandum associations we above considered. In view of these, while Lewis' theory—the standard one as well as his laxer version—has liberalized the relation between causal explanation and causation by lifting the requirement of metaphysical association on the cause-explanans side, it is not liberal enough, for it fails to lift the requirement on the effect-explanandum side.

At this point it might be helpful to briefly explore the notion of inferential association as it features in my account. The account I propose here is not

wedded to a particular conception of inference. So I shall be content with saying that the inferential association is a relation such that from a causal history/sequel it can be inferred—in whatever way we usually infer—that a certain explanans/explanandum holds. Also, to explicate the garden-variety notion of an inference would likely get us into the very heart of what it is to be an explanation in general, a question that I regret I cannot answer or confront here. But still, one may wonder in what sense the so-called inferential association is, as I have suggested, looser than the metaphysical association—that is, in particular, the Lewisian truth-making relation. Suppose that the truth-making relation is too tight because, as I have argued, negative truths can only stand in that relation to those 'events' that include some negative aspect. Since there are no such events, the condition for the truth-making relation to obtain between negative truths and events will never be met. But is the inferential relation any better? How could it be the case, rather, that negative truths stand in an inferential relation to events? Could, say, 'Leo failed to water the flowers' be inferred from his oversea vacation without (explicitly or implicitly) resorting to some negative aspect of that vacation, such as that the vacation was one in which no remote control of the sprinklers (or anything of that sort) was operated by him? If not, then the inferential relation, just like the truth-making relation, never holds between negative truths and genuine (positive) events.

But the point to notice is that, unlike inference, truth-making is a *metaphysically substantial* relation. It is not as if, insofar as the proposition that *p* can be inferred from X—whatever X is—X is just the truth-maker of the proposition that *p*. To be a truth-maker, X has to be some worldly entity. Since there are no negative events in the world, there is simply no way that 'Leo failed to water the flowers' can be made true by such entities. By contrast, inference operates within the domain of propositions (or statements, for those who doubt the existence of propositions). For the inferentialist, there is no need to commit to negative events in order for inferences involving negative propositions to get

through. Regarding the inference of Leo's failure, the inferentialist would say, more precisely, that <Leo failed to water the flowers> can be inferred from <Leo was on an oversea vacation>, together with *an additional negative proposition*, namely <During the vacation no remote control of the sprinklers was operated by Leo>. Does this, however, mean that the inferentialist commits herself to the no-remote-control fact as a negative fact—a fact that makes the negative proposition that she infers from true? Not necessarily. For the inferentialist, it is equally acceptable to say different things about how <During the vacation no remote control of the sprinklers was operated by Leo> becomes true: either that it is not made true by anything but simply true—simply, that is, given the world as it actually is, *not made false* (Cf. Bigelow [1988: 132]); or that it is made true not via the conventional binary truth-making relation but rather via a 'multiple relation' in which the mind plays a part (Russell 1910); or that it is made true by some positive entities (e.g., Armstrong's totality facts [2004: 76–7]). But even if it is made true by the no-romote-control fact, the inferentialist need not take it that the negative fact is *included* in (i.e. ontologically embedded in)—and thus is a negative aspect of—Leo's vacation, and thus that the vacation is a negative event. None of these options, however, is available to the generalized Lewisian truth-making proposal (in connection with how negative truths are causally explained), according to which negative events are taken as truth-makers. Hence, the inferential relation that I proposed between cause/effect (or causal history/sequel) and explanans/explanandum is looser than the Lewisian truth-making relation, in the sense that the inferential relation is compatible with a good variety of theories as to how negative truths are made true and, indeed, whether they are made true at all.

On the other side of the issue, it seems that one may also wonder if the inferential relation is too loose for the purpose of anchoring causation to causal explanation. Suppose, for example, that I infer from the lighting of a match that Jones is not in Berlin (given certain background information). According to the

liberal theory I advocate, one might say that the striking of the match explains the fact that Jones is not in Berlin. But doesn't that sound problematic? Well, I suspect that it sounds problematic because the explanation could be a *bad* explanation, not because it is not an explanation at all. An explanation can be bad for many reasons, among which is leaving out some necessary, but usually not assumed, background information. Besides, the case under consideration is further complicated by the fact that by 'explanation' we may mean the *act* of explaining. Conceived as an act of explaining, my inference of Jones' not being in Berlin may be a good enough explanation for myself (for presumably I know the background information), but less good for some, and very bad for others. But these are pragmatic matters that I cannot discuss here.[21]

I therefore propose that, in the light of NED and NNC, the standard Lewisian theory should be modified into the following more liberal theory of causal explanation:

(LT) To explain some information about a later part of a causal chain is to provide some other information about an earlier part of this chain.

It is easy to see that the liberal theory makes the standard Lewisian theory a special case, for one way of giving some information about a later part of a causal chain is simply to name an event within that part. And it should be clear that the new theory, according to which information—positive as well as negative—is admissible as the explanandum in causal explanation, is a general theory of causal explanation on which the extended Beebeeian account can be comfortably built.

From a broader perspective, what we are getting at can be seen as follows. Let's distinguish, with regard to how causal explanation as an epistemic relation is anchored to causation as its metaphysical base relation, three versions of a

[21] I thank an anonymous referee for pressing me on these points.

theory of causal explanation:

1. *The narrow theory:* Causes and only causes explain, effects and only effects get explained;

2. *The standard Lewisian theory:* Information about the causal history of an event explains the event;

3. *The liberal theory:* Information about an early part of a causal chain explains information about a later part of the causal chain.

As is well known, the standard Lewisian theory has liberalized the cause/explanans association and thus is a significant improvement of the narrow theory. In my view, however, in order to do full justice to causal explanation both the association on the cause/explanans side and that on the effect/explanadum side also need to be liberalized. That is to say, the liberal theory needs to be adopted.

5. Two Advantages

Considering the fact that the standard Lewisian theory has been widely influential (in areas such as philosophy of science, action theory, knowledge theory, etc.), we might hope that there are more important reasons for modifying the theory than just grounding the extended Beebeeian account. There are indeed such reasons, and in this section I shall discuss what I take to be two major ones.

The first advantage of the liberal theory is that it can, where the standard theory cannot, accommodate causal explanations in which the explananda are not given in terms of events. Note that this advantage is the underlying general

reason why the liberal theory can be employed to ground the extended Beebeeian account. As we have seen, the extended Beebeeian account requires that negative information sometimes be explained causally. While the liberal theory allows this, the standard theory does not. But in fact the liberal theory allows more, for according to this theory all kinds of information, negative or not, can enter into causal explanations as explananda. No doubt positive information can also be given in terms other than events. For information of this kind, the liberal theory makes it straightforwardly the case that it can be explained causally; the standard theory, on the other hand, has to declare the explanation nonsense.

It is true that an adherent of the standard theory could hold by fiat that information not given in terms of events simply cannot be causally explained. But this is to hold something quite implausible. We say that JFK died because *someone* shot him, but it makes perfect sense to take it one step further and say that someone shot him because he made some unpopular policies, or perhaps because there was a conspiracy. Likewise, we say that JFK died because *nobody* took the bullet for him, and it makes perfect sense to take it one step further and say that nobody took the bullet for him because, perhaps, nobody stood near enough to him. It seems undeniable that in both cases, the non-event explanans in the original explanation, that is, someone's shooting JFK or nobody's taking the bullet for him, is further explained in the new explanations; and that these new explanations are, for all we can tell, causal.

It might be pointed out, however, that the standard theorist need not deny that the kind of explanations of such things as someone's shooting JFK or of nobody's taking the bullet for him *are* explanations, or that these explanations are *apparently* causal. Instead, the theorist can insist that there exists some theory of explanation according to which the explanations in question are, though apparently causal, actually of some *non-causal* kind. But, as far as I can tell, it would be quite a burden for the standard theorist to provide us with such a

theory.

Let me be more specific. As we saw earlier, the standard theorist would deny that explaining why I'm not holding an apple by saying that I just ate it is to explain the non-holding causally. This is because the explanation's explanandum, the non-holding, is, according to the standard theory, not the kind of thing that can be causally explained. But the standard theorist need not say that the non-holding, if causally inexplicable, is inexplicable *simpliciter*. A sensible stance for her to take would rather be that although the non-holding is inexplicable causally, it can nevertheless be explained non-causally. And, to be sure, there are indeed non-causal ways that the non-holding can be explained. To explain why I'm not holding the apple, for instance, it seems that I can say any of the following things:

(1) Because I am not holding anything;

(2) Because it is in the fridge;

(3) Because I just ate it.

According to the standard theory, none of the above explanations is causal, because the explanandum, i.e. the non-holding, is an absence and thus cannot be causally explained. But how, then, are we to make sense of these explanations? To answer this question, it seems easy enough for the standard theorist to reply that (1) is a *logical* explanation, in the sense that from the fact that I am not holding anything it logically follows that I am not holding the apple. (Indeed, the explanation is *merely* logical, so no wonder it sounds uninformative.) Then (2), by comparison, is an *ontological* explanation, in the sense that the explanation works by appealing to an ontological principle according to which an object cannot at the same time (wholly) exist in different places.

(3), however, is troublesome for the standard theorist. For, simply from the fact that I ate the apple, together with any logical or ontological principles, it does not appear to follow that I am not holding the apple. That said, for (3) to work, we still need some kind of principle according to which the eating and the non-holding can be meaningfully related. What, then, could be the principle in question? Obviously, for those who endorse negative events, there is an easy answer: the eating and the non-holding are related in terms of causation. For those of us who reject negative events, however, invoking the liberal theory of causal explanation appears to be the only viable option.[22] In other words, we might say that my eating the apple explains my non-holding of it, in virtue of the fact that there is a causal chain, such that the eating is a piece of information about an early part of the chain, and the non-holding is another piece of information about a later part of the chain. (The causal chain in question may be constituted of, say, my eating the apple, its being moved down to my stomach, its being digested, etc., none of which are negative events.) It seems that, without resorting to the liberal theory, the explanatory efficacy of (3) would be deeply puzzling. At any rate, the explanatory efficacy of (3) and the like need to be accounted for, and, if I'm right, the models of logical or ontological explanations won't suffice for the job. Without relying solely on the two models, however, the standard theorist will have a difficult time making sense of the explanatory efficacy in question.

Another advantage the liberal theory has over the standard theory, or so I shall argue, is that with the liberal theory we can make sense of the *iteration* of causal explanation. As briefly mentioned earlier, causation is an iterative relation—that is, any cause in a certain causal relation is also an effect in some other causal relation, and *vice versa*. It is easy to see that on the narrow theory of

[22] Provided, of course, that we adhere to the framework of event causation. As pointed out earlier, those who embrace the framework of fact-causation have no serious difficulty holding that absences, construed as negative facts, can be causally related. Under the framework of fact-causation, it can be said that the fact that I'm not holding the apple is caused by the fact that I just ate it. And thus the standard Lewisian theory of causal explanation applies straightforwardly.

causal explanation, according to which causes and only causes explain, effects and only effects are explained, from the causal iteration it follows immediately that causal explanation is iterative too. That is, corresponding to the causal iteration there is also an iteration of causal explanation, such that any causal explanans in a certain causal explanation can also act as a causal explanandum in some other causal explanation, and *vice versa*. The standard theory, however, does not generally allow for explanatory iteration. This is because, according to the standard theory, some causal explanantia are not given in terms of cause events. The non-event causal explanantia cannot themselves be further causally explained, since, again according to this theory, no non-events can. In contrast, the liberal theory will restore the iteration of causal explanation—on the liberal theory, both causal explanantia and causal explananda are of the same kind, namely information about a causal chain (a causal history or a causal sequel, as the case may be), so no wonder an explanans in a certain causal explanation can itself act as an explanandum in another causal explanation, and thus be further causally explained; and, obviously, *vice versa*.

Some, however, might refuse to endorse the explanatory iteration as an advantage of the liberal theory, precisely because they think that causal explanation is *not* iterative. Consider that, as we often say, all explanations have to stop somewhere. If this is correct, it follows that causal explanation as a type of explanation has to stop somewhere too. If some causal explanantia cannot be further causally explained, due to the fact that they are not given in terms of events, so be it—it's just one way in which causal explanation stops.

But it should be emphasized that the reason why explanation usually stops is quite different to the reason why, as in the case of non-event explanantia and according to the standard theory, causal explanations are supposed to stop. It is true that sometimes there is no need for an explanation to go any further, because the explanans offered is already self-evident; sometimes there is no non-circular way for an explanation to go any further, because the explanans

offered can only be explained by invoking itself, either explicitly or implicitly; sometimes, both can happen. But note that both self-evidence and circularity are issues raised within a certain *explanatory context*—simply from the fact that an explanans is self-evident in a certain context it does not follow that it is also self-evident in another; and simply from the fact that an explanans cannot be non-circularly explained in a certain context it does not also follow that it cannot be so explained by information available in another. So when an explanation stops due to self-evidence or circularity what is essentially at work is the explanatory context. If, however, by following the standard theory we require that nothing other than events can be causally explained, this restriction on causal explanation then applies across all possible explanatory contexts. So while explanation in general stops only relatively to contexts, the standard theory rules that some causal explanations have to stop absolutely and regardless of any context. This kind of a restriction on causal explanation seems gratuitous, and at any rate cannot be justified by the sweeping thought that explanation in general has to stop somewhere.

6. Conclusion

In an attempt to extend Beebee's account of causation by absence, somewhat unexpectedly we ended up challenging the very foundation of her account, that is the standard Lewisian theory of causal explanation. The challenge, however, doesn't lead to giving up the standard theory, but to an improvement of it. Equipped with this improved theory, that is, the liberal theory of causal explanation, we are now in a better position to make sense of causal explanations in which the explananda are not given in terms of events, as well as the fairly plausible idea that causal explanation is iterative. What else is the liberal theory capable of doing? This is an interesting question that, I hope, will be met in fruitful ways.[23]

[23] My thanks are to David Oderberg, Helen Beebee, Dan Dennis, and two anonymous referees for

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