Disjunctive Effects and the Logic of Causation

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ABSTRACT

We argue in favor of merely disjunctive effects, namely cases in which an event or fact C is not a cause of an effect E₁ and is also not a cause of a distinct effect E₂, and yet C is a cause of the disjunctive effect (E₁ or E₂). Disjunctive effects let us retain the additivity and the distributivity of causation. According to additivity, if C is a cause of E₁ and C is a cause of E₂, then C is a cause of (E₁ and E₂). According to distributivity, if C is a cause of (E₁ and E₂), then C is a cause of E₁ and C is a cause E₂. We draw an analogy between causation and intensional notions like believing, wanting, and owing which also admit of merely disjunctive cases. We argue that both the Lewisian counterfactual account of causation (including its recent emendation by Sartorio) and the contrastive account of causation fail to properly account for this phenomenon.

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1 Introduction

The literature on causation has seen some defenses of disjunctive *causes*, especially in cases of overdetermination, for example when a cigarette butt is thrown in a barn simultaneously struck by lightning, resulting in a fire. Mackie claims that neither the throwing of the cigarette nor the lightning individually taken cause the fire, since neither is required to produce it, ‘though the disjunction of them is necessary *post factum* and nonredundant’ ([1965], p. 251). Recently, Sartorio has defended disjunctive causes in the specific case of causation by omission. A cause is disjunctive when, even though an event or fact $C_1$ is not a cause of outcome $E$ and a distinct event or fact $C_2$ is also not a cause of $E$, it is nonetheless the case that the disjunctive fact or event ($C_1$ or $C_2$) is a cause of $E$ (Sartorio [2006a]).

Not many however have promoted merely disjunctive *effects*, cases in which though an event or fact $C$ is neither a cause of an effect $E_1$ nor a cause of a distinct effect $E_2$, it is nonetheless a cause of the disjunctive effect ($E_1$ or $E_2$).

In what follows, I argue in favor of disjunctive effects by considering some special cases, including both actions and omissions, where such effects are intuitively called for. In the paper, I offer no full-fledged metaphysical account of causation, but I argue that causation shares some—though by no means all—of the logical features of traditional ‘intensional’ notions, like owing, believing and wanting. We will see that in those cases it is very natural to endorse merely disjunctive debts, objects of desire and of belief, and I will argue that causation shares with these notions a similar modal structure, thus leading to the endorsement of merely disjunctive effects. The point is logical and not ontological. Mysterious disjunctive entities are not invoked.
In the paper, I point out some unusual logical features of the counterfactual account of causation, and I argue that, in its current form, this account cannot accommodate disjunctive effects. I show that the logical alternatives to disjunctive effects consist in giving up either the additivity or the distributivity of causation, and that two different versions of the counterfactual account will indeed lead to the loss of either additivity or distributivity. However, I give reasons in favor of retaining both of these features, not least the analogy with the intensional notions.

I also treat briefly the contrastive account of causation. I argue that this account does not by itself explain the phenomenon of disjunctive effects. Moreover, I criticize the claim that all causation is contrastive by showing that there are reasons to maintain a distinction between unqualified and contrastive cases of causation.

2 Believing, wanting, and owing

My claim is that there are essentially disjunctive effects in the same sense in which there are essentially disjunctive objects of believing, wanting and owing, but not of meeting, kicking and kissing. What I mean is the following. From the fact that I have met either A or B it follows that I have either met A or met B. As Russell pointed out, if I have met a man, there is a particular man that I have met. However, Russell’s argument compresses together two distinct steps: from my having met a man it follows that I have met one of the (existing) men, that is either Jones, or Smith, and so on, and from this last fact it follows that I have met a definite particular man, Jones for example.

In contrast to this, from the fact that I believe a man (to have stolen my purse), or want a sloop, or owe a horse to Brian, it does not follow that there is a particular man
whom I believe to have stolen my purse, a particular sloop that I want, or a particular horse that I owe. But let us unpack the two steps of Russell’s argument in these cases too. Two distinct points seem to hold. First, one may want, believe to be such and such, or owe a sloop. Yet assuming that A, B and C are all the actual sloops, it does not follow that one wants, believes to be such and such, or owes either A or B or C. For example, I may believe that a sloop has sunk yet not believe that either one of A, B or C has, if I do not know that they are indeed the only existing sloops. And I may want a sloop, but none of the old ones; that is why I might start building a new one.

Secondly, assuming that one wants either A or B or C, it does not follow that one wants A or wants B or wants C. Having danced all night with all of the king’s daughters, Rinaldo may want (to marry) one of them yet prefer none in particular. This might have been exactly the state of mind of many Beatles’ fans in the sixties.

It is perhaps through consideration of paradigmatic cases in which both inferences fail (as for believing and wanting) or hold (as for meeting, kicking and all typical ‘extensional’ notions) that the important logical distinction between the two steps has gone unnoticed.

The first point does not apply to causation. Surely, if one causes a sloop to sink, and A, B and C are all the actual particular sloops, one causes either A or B or C to sink. However, I will argue that the second point holds. Causing A or B or C to sink does not imply causing A to sink or causing B to sink or causing C to sink. Naturally, in many cases we do believe a specific person to have done something, want a specific sloop, owe a specific horse, or cause a specific wreck. Yet, the holding of some such specific fact does not follow from the holding of its essentially disjunctive counterpart.
This thesis concerns causation directly rather than discourse about or reports of causation. I think of the point as logical, but by the logic of causation I mean nothing more than what concerns the most general metaphysical features of causation. The point is also unrelated to any alleged intentionality or sensitivity to conceptual presentation of the notions in question.

In ‘Quantifiers and Propositional Attitudes’ Quine, like Russell, seems to mix together these two distinct phenomena. On the one hand, the non-specificity of some instances of belief or wanting, as when we believe there are spies but have no idea of who they are. Such a belief is about spyhood itself and its not being an empty property. Similarly, someone may want a sloop in the sense that he wants to be a sloop owner, i.e., wants to attain a certain status, wants a certain property to apply to himself. On the other hand, one may believe that a certain group of people, perhaps the entire world population, includes spies; he may in principle look all such people in the eyes and think ‘Some of you are spies,’ not knowing whom. Similarly, one may want one of those things anchored in the marina, but is indifferent to which one he will manage to get. The first phenomenon (non-specificity) is such that if one finally obtains a sloop he will be satisfied because he has finally become a sloop owner. The second phenomenon (essential disjunctiveness, to give it a label), the wanting of one of those things, is such that the original desire will be satisfied by one’s getting one of them, while another sloop far away at sea or too easy to get would not do at all. Naturally, the class of objects apt to satisfy a non-specific and a disjunctive desire may be the same, yet the desires themselves—what is wanted—are still different. If I am right that causation can be
essentially disjunctive, yet cannot be non-specific,\textsuperscript{9} it becomes clear that the two phenomena are distinct.

3 Logical features of the counterfactual account of causation

My argument for disjunctive effects is not related to arguments in favor of disjunctive causes. Disjunctive causes are a natural result of a counterfactual account of causation, according to which an event or fact causes an outcome in case the outcome would not have occurred had the event or fact not occurred. We only have to consider cases in which an effect E would not have occurred without the disjunctive cause, that is in case neither \(C_1\) nor \(C_2\) had taken place, and yet the effect would still have occurred in the absence of just one of the disjuncts, that is in case not both \(C_1\) and \(C_2\) had taken place (Sartorio [2006a], p. 529), as in Mackie’s barn example.

A disjunctive effect instead need not counterfactually depend on its cause, and at the very least a modification of the counterfactual account is called for. In fact, a counterfactual account of causation seems particularly unsuited to deal with complex effects. A conjunctive effect (\(E_1\) and \(E_2\)) depends counterfactually on a cause \(C\) just in case the conjunction would not have held, that is \textit{either one} of the two effects would not have occurred, had \(C\) not occurred, which hardly seems sufficient for causing a conjunctive effect. Lethally poisoning a person who happens to turn twenty after being poisoned but before dying causes the person to die, perhaps even to die at age twenty, but it does not cause the victim to turn twenty and die. Surely, once \(E\) comes to pass, new sums of events including it also come into existence, but it does not follow that those
sums have been caused by the cause of E, or by the causes of their other component parts separately taken.

Similarly, a disjunctive effect \((E_1 \text{ or } E_2)\) counterfactually depends on a cause \(C\) just in case the disjunction would not have held, that is \textit{both} the effects would not have occurred, had \(C\) not occurred, which hardly seems necessary for causing a disjunctive effect. Assume the poison only caused a seizure, then I claim that it caused either the seizure or the death of the victim, but also either the seizure or the stock market crash, independently of whether the market did or did not actually crash. This last point holds independently of the main claim of this paper that there are \textit{merely} disjunctive effects. It holds even if the only way to cause a disjunctive effect consists in causing at least one of the disjuncts.

Notice how strange the logic of causation turns out to be under the counterfactual account. Let \(C\) be a cause of \(E\). Let \(I\) be an independently holding event. From ‘\(C\) causes \(E\)’, if follows that ‘\(C\) causes \(E\) and \(I\)’; from ‘\(C\) causes \(E\) and \(I\)’ it does not follow that ‘\(C\) causes \(E\)’, that ‘\(C\) causes \(I\)’, or that ‘\(C\) causes \(E\) or \(I\)’; however, from ‘\(C\) causes \(E\) or \(I\)’ it follows that ‘\(C\) causes \(E\)’, that ‘\(C\) causes \(I\)’, and that ‘\(C\) causes \(E\) and \(I\)’.

\textbf{4 Merely disjunctive effects}

To make my point about causation I borrow an example from Sartorio:

\textit{Battlefield:} I am at the battlefield and I see that some of our soldiers are about to be slaughtered by the enemy. I could save any one of them, but
only one of them (I only have one bullet left). I cannot get myself to choose which one to save so they all die. (Sartorio [2006b], p. 374).

_Battlefield_ is a Sophie’s Choice kind of case. You have the power to save one and only one person,\(^{10}\) and so prevent their death, among two or more who will die unless you save them. What is crucial is that you are neutrally positioned with respect to alternative courses of action you may take. In particular, you can save any one of the people in danger. Following Sartorio, let the soldiers be Tom, Jim and Bob. You can either save Tom, but not Jim and Bob, or save Jim, but not Tom and Bob, or Bob, but not Tom and Jim. If you don’t save anyone and all three die, whose death have you caused?\(^{11}\)

Sartorio’s qualification that you have only one bullet left suggests that the three soldiers are attacked by three different enemies and you can shoot only one of the three attackers. The example can be improved by assuming that there is only one action you can perform which would have the effect of randomly saving one of the three soldiers in danger, let us say pressing a button that randomly activates one of three protective shields.\(^{12}\)

Consider what I take to be two analogous cases. You own three horses, Black, Emerald and Lady. You promised Brian one and only one of your horses. To repay your debt you must give Brian one of the three, but no horse is such that you must surrender _it_. Similarly, you are hungry and want one of the slices of cake on the kitchen counter. Any one of these slices would satisfy your appetite and you want one of them, but none in particular – you have not set your mind on the largest one with the cherry on top. In the horses case we ought to say, and we do indeed so say, that you owe Brian either Black or
Emerald or Lady. We do not say that you owe Black just because giving Black would suffice to repay your debt. Similarly for the cake: any slice of cake would satisfy your appetite, yet of no slice is it true that you want *it*.

What is crucial is that you owe or want *one of those* things. Neither you nor anyone else need recognize them for what they are, nor need it be the case that you owe or want them because of what they are. All that matters is that you promised or want *one of them*, but promised none in particular nor have any preference for one over the other.

I take *Battlefield*—at the very least as modified by the addition of a randomizer—to be exactly the kind of case that proves that causation can be similarly disjunctive. Of course, if omissions cannot be causes, then your omission causes nothing. However, if absence causation is endorsed, *Battlefield* is as clear a case of causation by omission as any other. What remains to be established is what exactly your omission causes. I will argue that in *Battlefield* you cause one of the soldiers to die, but no particular soldier is such that you cause his death, though each one of them is such that, had you saved him, you would have caused no deaths. This is causation of a *merely* disjunctive effect, where a disjunctive effect, but none of its disjuncts, has been caused. It contrasts with a case in which you are not neutrally positioned and Bob for example is the only soldier that you can save. If paralyzed by terror you do nothing to save him, you specifically cause his death. So here too you cause the death of one of the soldiers. In this specific case, however, you cause a disjunction by causing one of its disjuncts.

Let us consider *Battlefield* from the point of view of the actions of the enemy, the active force that brought about the deaths. Naturally, the enemy is a cause of all three deaths. Yet, if you, because of your omission, are one of the causes of the death of one of
the soldiers, then—setting aside other causes beyond you and the enemy—the enemy is the sole cause of two deaths and only a partial cause of one of them. Yet, if all soldiers are on a par when it comes to the enemy’s actions, because they are so when it comes to your omission, there is no salient soldier of whose death the enemy is only a partial cause. So, regular causation by action—at least when qualified as total versus partial cause—can be disjunctive too, the enemy being an only partial cause of the death of either Bob or Tom or Jim, but not an only partial cause of the death of Bob, and so on. Clearly, this disjunctive character of the action in Battlefield is a byproduct of the corresponding omission. Later, I will argue that there are also plausible cases of disjunctive effects of actions that do not involve a corresponding omission.

5 Additivity

Apart from the analogy with believing, wanting, owing, etc., what else supports my analysis? Given the way in which Battlefield is built, you are positioned equally towards all soldiers. By this I do not only mean that you are equally well placed to save any one of them, but also that no soldier has for example a higher military rank than the others, thereby possibly making it your duty to save him rather than the others whenever possible. Given the ‘symmetry’ of the case, we should not claim that you have caused, let us say, the death of Jim, rather than those of Bob or Tom. Any proper account of the case should not make you a cause of some but not others of the deaths. So I claim that you caused one of the deaths, yet no particular one. If we do not endorse merely disjunctive effects, there remain only two other plausible ‘symmetric’ accounts: (i) you caused all
three deaths, or alternatively (ii) you caused each of the deaths. I will argue that both these analyses are inadequate.

First, how can you have caused all three deaths when all you could ever do was to save at most one soldier? It is exactly to avoid this kind of conclusion that Sartorio endorses the second account, according to which though you caused each one of the deaths, you have not caused their sum (Sartorio [2006b]). According to Sartorio, one’s causing the death of each soldier is linked to one’s ability to save that soldier. Sartorio uses cases like *Battlefield* to argue that causation is not additive, i.e., that one can cause A and cause B and cause C without causing A and B and C. Given that for each soldier it is true that you could have saved him, Sartorio concludes that for each soldier it is true that you caused his death, though it is not true that you could have saved all soldiers, or just two of them for that matter, hence it is not true that you caused the death of more than one soldier, or in particular of all of them.

However, failure of additivity for causation is extremely counterintuitive. Particularly so, if the effects are taken to be events. How can one bring about each of a series of events without bringing about the larger event which is their mereological sum?

My account retains the additivity of causation.\(^{13}\) Had you really caused the death of Bob, and caused the death of Jim, and caused the death of Tom, you would indeed have caused all three deaths. But then the fact that you have clearly not caused three deaths implies that you have either not caused the death of Bob, or not caused the death of Jim, or not caused the death of Tom. Indeed, unless we violate the symmetric nature of the case, what follows is that you have specifically caused none of these three outcomes. Similarly, if you owe Black, and you owe Emerald, and you owe Lady, it follows that
you owe all three of your horses. Specific debts, promises, needs, desires, beliefs, as well as specific causal responsibilities and specific moral faults do unfortunately add up. But if you just promised Brian one of your horses, then you owe him *none in particular*, though of course you *must* give him one of them to repay your debt. Similarly, you *must* save one of the soldiers to be clear of causal (and moral) responsibility.

This takes us to modality. What must be the case adds up. Yet from the fact that it must be the case that A or B or C it does not follow that it must be that A or it must be that B or it must be that C. Setting overdetermination aside, I take it that what an event or omission causes is such that it must not come to pass in order for the event or omission not to be a cause, and I claim that in a case like *Battlefield* what you *must* do in order not to be causally responsible for some death is to prevent the death of either one of Bob, Jim, and Tom. Yet, there is no particular death you must prevent to come out ‘causally clean’. From the fact that you *can* save, let’s say, Bob, in order to be no cause of any death, it does not follow that you *must* save him to so be. But all this simply goes to show what we knew all along, that *can* does not suffice for *must*.

### 6 Unqualified and contrastive causation

Suppose you save one of the soldiers. In this *Modified Battlefield* scenario it seems that you cause no deaths at all. Suppose you save Bob. Clearly, you could have saved Jim instead. Yet, from this possibility alone, it does not follow that you caused Jim’s death. In my view, it is never the case that you specifically cause Jim’s death, not even when you save no one. Hence, there is no leftover causal responsibility for Jim’s death when you save Bob. Had you caused Jim’s death to start with, i.e., in case you saved no one,
nothing short of saving Jim himself would have cleared you of this responsibility.
Similarly, if what you want is the slice of cake on the left side of the plate, nothing short of having that slice will satisfy this particular desire, and if you promised to give Emerald, Emerald is what you must give.

If merely disjunctive effects are not recognized, it becomes impossible to hold that saving one soldier is sufficient to completely clear you of causal responsibility for someone’s death. Endorsing exclusively specific, non-disjunctive effects leads to the unwelcome results that (i) in case you save no soldier you cause the death of each of them, which forces one to give up additivity to avoid the unbearable conclusion that by avoiding saving one you killed three; and that (ii) even if you do all you can and save one, you still cause each one of the others to die.

But now it may be objected that, even though loss of additivity is problematic, point (ii) instead seems natural. Isn’t it indeed true that if you save Bob, you are thereby a cause of the deaths of Tom and Jim? I resist such an intuition, which, as I will explain, is based on a confusion between two different senses of causation: unqualified and contrastive.

So, my argument rests in part on what holds when you save one soldier. According to Sartorio, in such a case, you cause the death of each one of those that you do not save ([2006b], p. 382, note 6). Instead I claim that if you save a soldier, you cause zero deaths. When it comes to the number of deaths that you cause, your saving one rather than another soldier makes no difference whatsoever: that number is always zero. Yet, surely one consequence of your saving Bob is that it is Jim and Tom who die. How can this be if, as I claim, you cause no deaths at all? In my view, the only thing you cause
is that the two deaths that occur are those that actually come to pass rather than some other two. Your performing one rather than another saving action contributes to the total sum of deaths being the total sum that it is, not numerically, but just concerning the deaths that compose it. In such a case it is true that you saved Bob rather than Jim (or Tom), hence that you caused Jim’s (or Tom’s) death rather than Bob’s. From this however it does not follow that you have unqualifiedly caused Jim’s death. Notice that I am not endorsing a contrastive account of causation in general, according to which it is never the case that an effect is simply and unqualifiedly caused.\textsuperscript{14} However, a contrastive account seems fitting for the very limited range of cases under consideration.

Concerning the original \textit{Battlefield} scenario, a full blown contrastive account of causation can help sustain Sartorio’s rejection of additivity. It may be suggested that, even when you save no one, you cause (1) the death of Jim rather than Bob and Tom, (2) the death of Bob rather than Jim and Tom, and (3) the death of Tom rather than Jim and Bob. It is no wonder then that additivity fails, since effects with distinct contrastive clauses cannot be added up. However, I do not find a contrastive account generally persuasive.\textsuperscript{15} In my view, if you save no one you cause one death, not one-death-rather-than-two-others three times over. It is only when you genuinely save someone rather than someone else, as in the \textit{Modified Battlefield} scenario, that you cause one death rather than another, without simply causing that death. A generalized contrastive account of causation nullifies the distinction between standard cases of causation and cases where a contrastive account seems to be genuinely called for.

In a last attempt to account for merely disjunctive effects as contrastive, it can be claimed that even when you save nobody, you cause \textit{three rather than two} deaths to
occur, without also causing any particular soldier’s death rather than something else at all. This is fine, but it simply reintroduces the distinction I am after. Causing the occurrence of three rather than two deaths amounts to causing one more soldier to die. If this can hold without causing the particular deaths, we are back to my distinction between merely disjunctive effects versus specific effects, this time embedded within a contrastive framework. But the contrastive framework, if I am right, cannot by itself account for such a distinction. Of course, a contrastive account of causation may still be needed on other grounds, but it must be supplemented by the distinction I am after. A general attack on the contrastive account must show causation to be fundamentally a two-termed relation. This of course I have not done here.¹⁶

Notice moreover that if I am right in assimilating the phenomenon under consideration to cases of disjunctive beliefs etc., and if a contrastive account is adopted for causation, then it would be only natural to extend it also to these other cases. So, when you want a slice of cake, what you want is this slice rather than that and that slice rather than this. My objections to the contrastive treatment of merely disjunctive effects extend to these new attempts too.

Additionally, a generalized contrastive account loses the vital distinction between wanting something rather than something else (preferring) and simply wanting something – similarly for belief. Dealing with the absolute cases as limit contrastive cases, i.e., as cases of believing or wanting something rather than nothing at all seems an empty, merely verbal move, which obscures a real distinction. Similarly for causation. There is a basic real distinction to be preserved between causing something rather than something else and simply causing something, as cases like Modified Battlefield make apparent.
To return to Sartorio’s account, I find my treatment of the case more satisfactory, if only for the analogy with believing, wanting, owing, etc., to which it is extremely implausible to extend Sartorio’s claims about causation. We do not say that you owe each of your horses, because each one can be used to repay your debt, or that you want each slice of cake just because you don’t prefer one over the others.

Though each slice of cake is sufficient to satisfy your desire, and each soldier is such that saving him is sufficient to clear you of causal responsibility, it does not follow that you want that slice or killed that man. For something to be what you want, it has to be the case not only that obtaining it suffices to satisfy you desire, but also that obtaining it is required to satisfy your desire. Similarly, if E is what you caused, then other things being equal E is what must not come to pass for your action or omission not to be a cause. Similarly, for a belief to be true, it is not only sufficient but also necessary that what is believed obtains, though clearly what is believed—the content of the belief—is not simply what must obtain in order for the belief to be true.

Consider now a merely disjunctive belief, as when you believe that one (and only one) of your students has entered your office, but suspect none in particular. If your students are Martha and Robin, one of them must have entered your office in order for your belief to be true, though it need not be Martha (or Robin). But let us extend Sartorio’s account to belief. If the mere fact that you can save Jim makes you a cause of his death if you don’t do so, then by analogy the mere fact that Martha’s intrusion is sufficient to make your belief true, makes it the case that you believe that Martha has entered your office. Given that every situation in which your belief is true is a situation in which either Martha or Robin entered your office, it would then follow that by believing
that one of them, but not both, has entered your office you thereby believe that Martha has entered your office, and that Robin has entered your office, without believing that both of them have done so. This, it seems to me, cannot possibly be right.

7 Distributivity

Let us consider how the classical Lewisian counterfactual account of causation must treat this case. The counterfactual account has been criticized on many fronts. Yet, it remains one of the leading accounts of causation by omission, where no account in terms of production or bringing about of the effect is naturally forthcoming.¹⁹

In counterfactual terms, one may think of Battlefield as follows. For each one of the soldiers, though it is true that you might have saved him, it is not the case that, had you acted, i.e., saved someone rather than no one, you would have saved him. That is the case because—by construction of the case—other things being equal, a world in which you save Bob is not closer to the actual world than a world in which you save Tom or Jim instead. David Lewis says:

It is not the case that if Bizet and Verdi were compatriots, Bizet would be Italian; and it is not the case that if Bizet and Verdi were compatriots, Bizet would not be Italian.

That is:

\[ \neg(\phi \implies \psi) \land \neg(\phi \implies \neg\psi) \land (\phi \implies \psi \lor \neg\psi). \]

²⁰
Similarly, it is not the case that if you had saved one of the soldiers you would have saved Jim, and so on for the others, though you would have saved one or the other of them, since the worlds closest to the actual world, except for the absence of your omission, are such that either Jim or Bob or Tom is there saved. Had you saved someone, it would not have been the case that all three deaths occurred.

To a counterfactual with a merely disjunctive consequent there corresponds a cause with a conjunctive effect that does not distribute to the conjuncts. It follows then that you have caused A and B and C, but not A, not B, and not C. This is the opposite of Sartorio’s diagnosis. In Lewis’s account causation requires that the effect would not, not just that it might not, have occurred absent the cause. Hence, far from being a cause of each death but not of their sum, you are instead a cause of the big event that is the sum of all three deaths, without being a cause of any of the component deaths. So, in *Battlefield* you cause a sum or conjunction of events or facts A and B and C but not even one of the events or facts separately taken.

Once again, I find my treatment of the case more satisfactory, if only for the analogy with believing, wanting, owing etc., where it is extremely implausible to say—extending Lewis’s account of causation to those notions—that you owe all your horses, or want all the slices of cake, but not each of them separately taken. Wanting and owing seem to distribute. I see no clear collective notion of wanting or owing such that one might want a certain number of things, without also wanting the single things comprised in that number. Of course, one might want John and Mary to be a couple again, without wanting John to be a couple again or Mary to be a couple again. Yet here the non-distributive component lies with the predicate ‘being a couple’. Similarly, one might want
a pair of gloves, without wanting the left glove or wanting the right glove, but here too
the lack of distributivity is due not so much to the wanting but rather to the object
wanted, that is a pair of gloves. In fact, this phenomenon has nothing to do with
intensionality. One can damage or ruin a pair of gloves without damaging the single
gloves, for example by spoiling their symmetry, and one can speak poorly of a couple
without speaking poorly of its single members. Paradigmatically, one can count pairs and
not their members. And so one may also want or owe a thing without wanting or owing
its parts, though one must get or give the parts to get or give the whole. So, if there is a
pair of gloves that I want or owe or believe to have damaged, it does not follow that there
are two things that I want, owe or believe to have damaged. But this has nothing to do
with the ‘verbs’ and all to do with the things.

Recall the situation in which you believe that one of your students has entered
your office. We certainly do not want to say that you believe, non-distributively, that all
of your students, that is Martha and Robin, have entered your office. This would amount
to believing that Martha and Robin have entered the office without thereby believing that
Martha has done so or believing that Robin has. Little clarity is also gained by claiming
that you suspect the-two-of-them-together to have entered the place, but not each single
one of them. To start with, you do not believe that the two of them have entered your
office, you may even be sure that only one did. Similarly, when you want a slice of cake
we do not say that you want the sum of the slices but not the component slices. In the
same way, one cannot cause two or more events without causing the component events:
causation distributes. The alleged possibility of causing A and B and C without causing A
etc. seems no less puzzling than the possibility of wanting or owing A and B and C without wanting or owing A etc..

Sartorio gives up the additivity of causation. Lewis instead gives up the distributivity of causation.\textsuperscript{23} I prefer to endorse merely disjunctive effects. This, notice, does not involve the acceptance of a new kind of spooky entities, merely disjunctive things. There is no merely disjunctive slice of cake that you want, and no merely disjunctive man that you have killed. The only elements involved in my solution are the obvious truth that \textit{ceteris paribus} the effect is such that it must not come to pass for the cause not to be a cause, and the uncontroversial part of the logic of necessity according to which the necessity of A (B/C) does not follow from the necessity of (A or B or C).

According to another leading account of causation by omission, causation by omission has a normative unpinning, and in particular fault suffices for causation (Thomson, [2003]). Then, in a case like \textit{Battlefield} it is some moral fault or technical malfunctioning of yours that grounds your causing the death of at least one soldier, and the disjunctive nature of the effect is explained by the disjunctive character of the underlying normative requirement and consequent responsibility; and it is clear that one can be morally or otherwise required to do A or B or C without being required to do one in particular. So one can be at fault for not having done A or B or C, without thereby being at fault for not having done A, and so on. Independently of whether faults and responsibilities do or do not suffice for causation by omission, it seems that the notions of responsibility and fault are such that it is possible to be responsible, or at fault, for a disjunctive outcome without thereby being responsible for either one of the disjuncts separately taken. Whether it is responsibility that is ultimately grounded in causation or
causation that is grounded in responsibility, or neither, I believe that the proper analysis of *Battlefield* shows that both notions, insofar as they are applicable to this case, admit of merely disjunctive instantiations.

8 An action case

In conclusion, let me address the question of causation by action of a merely disjunctive effect. The most plausible cases of active causation of a disjunctive effect are cases in which one cooperates in causing a conjunctive outcome, yet there is no conjunct that can be properly imputed to his actions. For example, suppose that in a small town there are twenty poor inhabitants and twenty wealthy ones. All the wealthy citizens are asked to donate twenty dollars to pay for a Thanksgiving dinner for one of the poor people. If you donate twenty dollars, there is no specific dinner that you have paid for. This is particularly clear if your twenty dollars are not redistributed in some obviously traceable way. Rich and poor citizens are not matched to personalize the donations, and dollar bills are not physically handed in and redistributed. If fewer donations had taken place, fewer dinners would have being offered. Suppose that all twenty rich people donate twenty dollars each. Is each donation the cause of one dinner or are they all partial causes of the twenty dinners?

Consider the following slightly modified case. To put pressure on the donors, the Board of Thanksgiving Donations decides that dinners will be served only if the target sum of four hundred dollars is reached. If even just one person does not donate, no one will receive a dinner. In this case, your donation is crucial in making each of the dinners
take place, while the same cannot be said in the previous case, where had you not donated only one dinner would have been canceled.

How should we cash in the difference between these two cases? Because of the distribution system, which does not (metaphysically) track individual donations, in neither case did you cause some dinner in particular rather than the others. The cases are built so that no productive account of causation, which traces a causal path from the cause to the effect, can be applied to connect a particular donation to some particular dinner or dinners. So, even if these are cases of causation by action—donating money—they share the lack of cause-effect traceability typical of omission cases. So, no specific effect seems forthcoming. But while in the second case, where all dinners would be canceled, your donation is a (partial) cause of each and every one of the dinners and so also of their conjunction, the same is not true in the first case where you cause twenty rather than nineteen dinners to take place. To preserve the difference between the two cases we have to recur, once again, to merely disjunctive effects, and say that in the first case your donation caused one dinner only, but none in particular. The alternatives are either that you caused each of the twenty dinners and yet not more than one, following Sartorio, or that you caused all dinners but no single one of them, following Lewis. For the same reasons discussed in the case of omission, I favor the disjunctive analysis.

9 Conclusion

What should we conclude? I hope to have shown that disjunctive effects have a lot to recommend them, and nothing to detract from them. The alternatives aren’t nice, and disjunctive effects aren’t spooky. The point that there are merely disjunctive effects has
been raised as a logical point about causation. This means that if you think that effects are events and that there aren’t disjunctive events, you need not reject my analysis. Causing a disjunctive effect is like wanting one of the apples in the basket on the table. Disjunctive apples are not called for to make sense of your desire. All that is going on that you must have one of the apples to be satisfied, but any of them would do. Similarly, all that is meant by C being the cause of a merely disjunctive effect is that at least one of the events in the disjunction must not occur for C not be a cause, but that the not coming to pass of any one of them will do.

I hope to have reinforced my case for disjunctive effects by emphasizing how natural it is to accept, so to speak, merely disjunctive debts, objects of desire and of belief, and how unnatural it is to try to do without them, and how causation shares with these other notions a similar modal structure. Moreover, my view retains both the additivity and the distributivity of causation.

One last result concerns not so much causation but the other notions that we have considered. Particularly in the cases of wanting and believing, the dominant views maintain that there are two different sorts of beliefs and wanting or at least two different objects for such attitudes. The distinction is then often drawn in terms of sensitivity to presentations. One may want _de re_ a particular sloop, or want a sloop _de dicto_, that is any old sloop, or a sloop-qua-sloop. I have claimed that there are more distinctions to be drawn. The one I have focused on in this paper, between wanting a specific sloop or wanting any one of the sloops, has nothing to do with sensitivity to conceptual presentations or anything of that sort. It is simply not the traditional _de re-de dicto_ distinction. The proof of this is that the distinction applies to causation too, where the _de_
re-de dicto distinction has nothing to recommend itself. As mentioned at the beginning of the paper, I do think there is an additional category of beliefs and desires to be considered, that of non-specific or generic beliefs and desires. That category too, I believe, has nothing to do with conceptual presentations, though I have not treated it in this paper.

One question I do not know how to answer is whether the counterfactual account of causation can be modified to take care of these disjunctive cases. But this paper is not meant merely as yet another criticism to Lewis’s old account. My purpose has been to uncover what I take to be a basic logical feature of causation, a feature that any account of causation ought to respect. At the very least, I hope to have made clear the virtues of allowing for disjunctive effects, and the price to be paid for rejecting them.

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1 See also (Mackie [1980], p. 47).

2 David Lewis argues against disjunctive events; hence, the cautious terminology ‘event or fact’. See (Lewis [1986b]).

3 One exception is perhaps Prior, who upholds the possibility of events without a cause, for example the jump of an electron to orbit A (rather than orbit B) in case the electron has the disposition to jump, if properly stimulated, to either orbit A or orbit B, but not the disposition to jump to orbit A nor the disposition to jump to orbit B (Prior, [1962]).

According to Prior, the actual jump of the electron to orbit A is an event without a cause. But didn’t the stimulation cause the electron to jump somewhere? And if not to A (or to B), wasn’t the electron then caused to jump to either A or B? I mention Prior because of his implicit endorsement of merely disjunctive effects, though I do not agree with him on this particular case. In my view, the stimulation of the electron causes its actual jump to A, its under-determination notwithstanding.

4 See (Russell [1905], p. 481): ‘Suppose now we wish to interpret the proposition, “I met a man”. If this is true, I met some definite man; but that is not what I affirm.’

5 See (Quine [1956]) and (Geach [1967]) on this point.
I say that one may want a sloop without wanting any of the existing ones. The point is really about specificity. To see that the difference is important, consider the cases of dreaming and worshiping. Kripke, in his yet unpublished *John Locke Lectures*, points out that one cannot worship a god, any old god. She must worship a particular god, though perhaps nonexistent. And perhaps one may only dream of specific things whether existing or not. So it seems that dreaming and worshiping are such that from dreaming of or worshiping a god, it follows that one dreams of or worships a particular god, extant or not.

For a generalized version of this view of logic, see (Prior [1976]).

Anscombe ([1969]) argues that causal statements are intensional. I take the metaphysical point I am arguing for to be unrelated to Anscombe’s semantic thesis.

At least in the limited sense that one cannot cause a certain property to be instantiated without causing some things to instantiate it.

Naturally the example can be generalized so that you can save \( n \) persons where \( n \) is less than the total number of people in danger.

Throughout the paper I talk of what you cause by acting or omitting to act, instead of what your action or omission causes. This terminology is adopted just for brevity’s sake. In no way should it be assumed that the points I make are meant to apply exclusively to agent causation.

In the original *Battlefield* case there are three distinct actions that you omit to perform: shooting enemy number one, shooting enemy number two, etc.. In the randomizer version of the case instead there is only one action that you omit to perform.
The main thesis of this paper is that there are merely disjunctive effects. To establish this I only need to show that in the randomizer case, where the upshot of your pressing the button would be that one random soldier is saved, your omission causes one random death. However, to preserve the additivity of causation in general, I need to argue that the original *Battlefield* case too is best treated as disjunctive, and I indeed think that this is the case. In fact, even when three distinct actions and omissions are involved, the case is built so that (i) the three actions are mutually exclusive, so that you can at best perform one of them, and (ii) the closest worlds to the actual world where you do perform one of the three distinct saving actions are equally close to the actual world, thereby making it random which action is performed. Hence, I submit that the original *Battlefield* case too is also best understood as involving one single omission, i.e. the omission of performing one of the mutually exclusive actions, which leads to the death of one of the soldiers.

For a contrastive account of causation, see (Schaffer [2005]).

Neither does Sartorio, who would therefore not welcome this kind of help.

Steglich-Petersen ([2011]) makes a full-blown attack on the contrastive account of token causation.

But naturally Sartorio may reject the analogy.

Analogous qualifications hold for wanting, owing, and causing too.

See (Hall [2004]). The exclusion of a productive account of causation for the case of causation by omission does not leave only the counterfactual dependence account available. For example, probabilistic and normativity-based theories remain viable.
(Lewis [1973], p. 80). See also Lewis’s ANALYSIS 2 of counterfactuals that permits several equally close closest worlds and thereby allows counterfactuals with disjunctive consequents, in ([1986a]).

Let $\Phi$ be your original omission in the *Battlefield* case; let $A$ the death of Jim, $B$ the death of Tom, and $I$ the death of Bob. It is the case that:

$$\neg(\Phi \rightarrow \neg A) \& \neg(\Phi \rightarrow \neg B) \& \neg(\Phi \rightarrow \neg I) \& (\Phi \rightarrow \neg A \lor \neg B \lor \neg I).$$

Hence, given Lewis’s analysis of causation:

$$\neg(\Phi \text{ Causes } A) \& \neg(\Phi \text{ Causes } B) \& \neg(\Phi \text{ Causes } I) \& (\Phi \text{ Causes } \neg(A \lor B \lor I)).$$

The last conjunct is equivalent to: $(\Phi \text{ Causes } A \land B \land I)$.

(I am not using different terms for events $\Phi$ and $A$, as in ‘$(\Phi \text{ Causes } A)$’, and for the propositions that such events occur, as in ‘$(\Phi \rightarrow A)$’, but I trust that this inaccuracy generates no confusion.)

I have extended Lewis’s account in a natural way, but I do not claim that the extension cannot be resisted.

Giving up the distributivity of causation is natural for Lewis who thinks of sums of events as having component events as parts in much the same way in which the legs of a horse are parts of the horse. If you owe, want, believe-to-be-such-and-such a horse you do not thereby owe, want, believe-to-be-such-and-such its legs; similarly for Lewis you may cause a sum of events without causing its parts. Instead I think that we must distinguish between *a thing* that is wanted or caused and its parts on the one hand, and *a number of things* that are wanted or caused and the components of that number on the other. In my view, the indiscriminate endorsement of mereology is at fault for obscuring this distinction.
24 I owe this particular example to Paul Bartha.

25 Here too a randomizer must be involved in dinner cancelation, otherwise we would not have a merely disjunctive effect. Suppose there were a pre-established order of cancelations, for example from the least needy to the most, then the chronological order of donations would determine which particular dinner was caused by which particular donation: the first donation causing the last to be canceled dinner and so on.