

More of a Cause?

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Abstract

Does a person's liability to attack during a war depend on the nature of their individual causal contribution to the (unjust) threat posed? If so, how? The recent literature on the ethics of war has become increasingly focused on questions of this kind. According to some views on these matters, your liability hinges on the *extent* of your causal contribution: the larger your contribution to an unjust threat, the larger the amount of harm that we can impose on you in order to avert the threat. Some philosophers have suggested that we can ground a quite general principle of civilian immunity on this basis. But, do causal contributions really come in degrees? Can we make sense of a graded notion of causal contribution that can be relevant to debates about liability in war? I argue there is good reason to be sceptical. The appearance that causal contributions come in degrees is just an illusion that can be explained away.

I. Introduction

"The driver's speeding was more of a cause of the accident than the bad state of the roads." Claims like this are quite common in ordinary discourse. They convey the thought that some events make a larger causal contribution to the occurrence of an outcome than some other events. They presuppose that the concept of causal contribution is a *graded* notion, or, in other words, that causal contributions come in degrees.¹

If true, the claim that causal contributions come in degrees would have important implications in moral theory. One implication concerns the concept of resultant luck (moral luck about how things turn out, or about the results of our acts).² If there is resultant luck (which is, of course, controversial), then what we are morally responsible for—and thus how morally responsible we are—depends on what the *actual* consequences of our acts are, which is partly determined by factors outside our control. For example, an assassin who shoots at a victim can become morally responsible for murder or only attempted murder depending on facts about the circumstances that are beyond his control, such as whether a bird flew by at that precise time and stopped the bullet before it reached the victim. But, if causal contributions come in degrees, then, surely, *how much* we actually contribute to the occurrence of certain outcomes will also depend on factors beyond our control. As a result, how morally responsible we are will depend, not just on whether we causally contributed to an outcome, but also on the extent or magnitude of our actual contribution to that outcome. Thus, the existence of degrees of causal contributions would result in a novel form of resultant luck.³

Another important implication of the idea that causal contributions come in degrees concerns the concept of liability in war. The nature of causal contribution has become quite central in the just war literature in recent years, with the growing popularity of views that tie the concept of liability (a combatant or civilian's liability to be attacked during a war) to the individual's moral and causal responsibility for the (unjust) threat posed. According to some of these views, liability is sensitive to degrees of causal contribution in that whether agents are liable to attack, and the extent of their liability (the amount of harm that it is permissible to impose on them in order to avert the threat), can depend on the extent of

their causal contribution to the threat.⁴ This is supposed to have important implications for liability. It has been argued, for example, that the contribution that ordinary noncombatants such as doctors make to an unjust threat, unlike the contribution made by most combatants, is typically too minimal for them to be liable.⁵ It has also been suggested that the same goes for the vast majority of civilians who provide military resources, such as workers who participate in different capacities in the chain of production of weapons.⁶ On the other hand, a few civilians who make a significant contribution to an unjust threat may be liable to attack (assuming the other conditions for liability are met), but these are likely to be a tiny minority.⁷ Views of this kind, then, use degrees of causal contribution to support a quite general principle of civilian immunity.⁸

So, a lot seems to hang on whether we can make sense of degrees of causal contribution. In this paper I will argue that there is good reason to be sceptical. I will present a puzzle about causal contribution and then argue that the best solution to that puzzle is to reject the idea that causal contributions come in degrees. Despite initial appearances, nothing is “more of a cause” than other things. It is all a confusion, an illusion than can be explained away.

To clarify the main thesis: I will argue that there are no degrees of causal contribution when we specifically have in mind a concept of cause that can be relevant in moral theory: a concept that can be tied to moral responsibility, liability, or other moral notions.⁹ Some philosophers have argued that there are different concepts of cause.¹⁰ It might be that we can make sense of degrees of causal contribution when we understand causal contributions in terms of some concepts of cause but not others. I will not take a stand on this issue here.

I also will not take a stand on what the right analysis of (the relevant concept of) causation is. All I aim to show is that, however exactly (the relevant concept of) causation is to be understood, it is not a concept that allows for degrees. In the contemporary literature on causation there are, in fact, very few accounts of causation that allow for degrees of causal contribution.¹¹ So this makes the question even more pressing: Could most accounts of the causal relation have gone wrong in simply dismissing the idea of degrees of causal contribution?

II. Motivating degrees of causal contribution

As noted above, the idea that causal contributions come in degrees is quite intuitive. It seems very natural to think that, among all of the factors that contributed to a certain outcome, some contributed more than others: the driver's speeding contributed more to the accident than the state of the roads, chopping off the vegetables contributed more to the making of a stew than adding the extra pinch of salt at the end, etc. But let us examine in more detail how one could motivate the idea of degrees of causal contribution that are relevant, in particular, to attributions of *moral responsibility*. One natural way to do this is as an extension of a common style of reasoning about the concept of resultant luck. (Again, resultant luck is a controversial concept. I emphasize that I am not embracing the existence of resultant luck, but simply exploring how the same style of reasoning that leads some to embrace this form of luck in general could lead them to embrace a particular form of resultant luck based on degrees of causal contribution.)

As I mentioned in the previous section, resultant luck is typically motivated by appeal to examples. Imagine that an assassin freely shoots at a victim, intending to kill her.

Normally, an assassin has no more control over what happens after the bullet exits the gun. Still, imagine that everything goes according to plan, as in the following scenario:

Bullet: When the assassin shoots, the bullet reaches and kills the victim in (roughly) the expected way.

Contrast this with another scenario where something unexpected happens. Imagine, for example, that as the assassin pulls the trigger a bird flies by, the bird intercepts the bullet, and as a result the bullet never reaches the target. Even if the assassin's intentions and his bodily movements are the same as in the original case, in this case he is not morally responsible for the victim's death because he fails to cause the death. In fact, the assassin would not be responsible for the death even if the death still happened in some other way, as long as the agent failed to cause it, as in the following scenario:

Bird: As it happens, at the same time that the flying bird intercepts the bullet, the bird independently dislodges a loose boulder, which rolls over the victim and kills her.

Although the victim dies in this scenario, the assassin is not responsible for her death because he did not cause it; instead, the bird (or the bird-boulder combo) did.¹²

Scenarios like Bullet and Bird can be used to motivate the existence of the phenomenon of resultant luck: they can help motivate the idea that whether or not we are morally responsible for an outcome is something that can depend, not just on our

intentions or even our bodily movements, but also in whether those intentions and bodily movements actually succeed in bringing about the expected outcome, which tends to be determined by external circumstances outside our control.

Now let us add a third scenario, one where *both* the bullet and the bird make a contribution, although one that is intuitively less substantial than in the previous cases:

Bullet-with-Bird: Again, the bird collides with the bullet, but this time it only manages to slow the bullet down a bit, reducing its momentum in such a way that it alone is no longer enough to kill the victim. As luck would have it, though, the bird's flying by also independently dislodges a loose boulder—a smaller one this time, one that is not large enough to crush the victim to death on its own. Although neither the bullet nor the boulder is enough in itself to bring about the death, *together* they are sufficient to cause it.

Here too, the assassin's intentions and bodily movements are the same as in the original Bullet scenario, but something unexpected happens that seems to affect the assassin's actual contribution to the death. In this case it seems natural to regard the assassin as making a less substantial contribution to the death than the one he makes in Bullet. Unlike what happens in Bird, in this case the bird does not completely neutralize the causal efficacy of the bullet, but it does seem to reduce it or diminish it to a certain extent.¹³

If so, and assuming that resultant luck in general is possible—assuming, in particular, that the presence of the bird can affect the assassin's moral responsibility in a scenario like Bird—an extension of that same reasoning would seem to suggest that the

presence of the bird can also affect the *magnitude* of the assassin's moral responsibility in Bullet-with-Bird. If, thanks to the bird, the assassin makes a lesser contribution to the death than he does in Bullet, then he is, as a result, less morally responsible for the death than he is in Bullet (recall that we are assuming that everything else is equal). So this reasoning motivates the idea that there are degrees of causal contribution, and that those degrees of causal contribution can result in different degrees of moral responsibility: the more an agent actually contributes to an outcome, the more morally responsible she is for the outcome, all other things being equal.

But does the idea of degrees of causal contribution really make sense? In the next section I offer reasons to be sceptical.

III. Argument against a graded notion of causal contribution

III. 1 Two criteria: sufficiency and necessity

Consider a fourth scenario:

Bullet-and-Bird: This time the bird does not intercept the bullet, but it starts a causal process of its own: it dislodges a loose boulder, which rolls over the victim just as the bullet fired by the assassin is entering the victim's heart. Each process causes an amount of damage that would have been independently sufficient to bring about the victim's death.

Unlike *Bullet-with-Bird*, *Bullet-and-Bird* is an overdetermination case: the two processes do not “join forces”, so to speak, to make the death happen, but each makes a contribution that is enough to bring it about on its own.¹⁴

Assuming there are degrees of causal contribution, what should we say about the extent of the assassin’s causal contribution to the victim’s death in this case? Following the reasoning from the previous section, it seems that we would have to say that his contribution is the same as in the original case, *Bullet*. For in this case the bird does not interfere with the assassin’s bullet in any way, so the bullet remains as deadly as ever.

Reflection on this fourth case suggests that the reasoning from the previous section rests on a criterion for measuring degrees of causal contribution that favors, roughly, *sufficiency* over *necessity*. The criterion can be spelled out as follows:

(Sufficiency Criterion) How much a cause contributes to an effect is a matter of how close it comes to providing a *sufficient* condition for an effect.

For example, the assassin’s behavior in *Bullet* comes closer to being a sufficient condition for the victim’s death than it does in *Bullet-with-Bird*, where it loses part of its original momentum and thus it needs to join forces with the boulder to bring about the death; so, according to this criterion, the assassin makes a larger causal contribution in *Bullet* than in *Bullet-with-Bird*. In contrast, the contribution made by the assassin in *Bullet-and-Bird* (the overdetermination case) is just as substantial as it is in *Bullet*. For the fact that the effect is overdetermined does not change the fact that the bullet’s momentum is sufficient on its own (i.e. without the help of the boulder) to bring about the victim’s death.

This is all at a very rough and intuitive level. There are different ways in which one could try to make the sufficiency criterion more precise by spelling out the relevant concept of sufficiency. A very strict notion of sufficiency will not do, since individual causes are never strictly sufficient (or even close to being sufficient) for their effects by themselves, but only against a background of circumstances that are taken as a given. So, presumably, the relevant concept would have to be some concept of sufficiency “in the circumstances.” For our purposes here this rough characterization will do.¹⁵

But the trouble starts once we realize that the Sufficiency Criterion is not *the only* criterion that can plausibly be used to measure degrees of causal contribution (again, assuming there is such a thing as degrees of causal contribution to begin with). In particular, one could naturally think of using the following criterion as an alternative:

(Necessity Criterion) How much a cause contributes to an effect is a matter of how close it comes to providing a *necessary* condition for an effect.

Again, there are different possible ways of understanding the relevant concept of necessity. And, again, a very strict notion of necessity will not do, since individual causes are never strictly necessary for their effects, but only against a background of circumstances that are taken as a given. A natural way to understand the relevant notion of necessity is in terms of the concept of counterfactual dependence. A cause is necessary for an effect in this sense when, had the cause not occurred, the effect would not have occurred. The antecedent of the counterfactual takes us to the closest possible worlds where the cause does not occur, and thus, to worlds that are otherwise very similar to the actual world (in particular,

worlds where the background circumstances are the same). Modeling degrees of necessity is a bit harder. But, in principle, it seems that one could draw on the fact that some events are *more heavily overdetermined* than others, and use this to understand degrees of necessity: the more overdetermined an effect, the less necessary the cause, for each of the overdetermining causes.¹⁶ Again, for our purposes here this rough characterization of the Necessity Criterion will do.

To motivate the Necessity Criterion, compare these two scenarios:

Difference: You are the only shooter aiming at a victim. You shoot and the victim dies.

No Difference: Unbeknownst to you, you are one of many shooters who are independently aiming at a victim. You shoot, and so does each of the other shooters. All the bullets reach the victim simultaneously, and each causes an amount of damage that would have been sufficient to bring about the victim's death on its own.

To the extent that we can make sense of degrees of causal contribution, it is very natural to think that you make a *more substantial* contribution to the victim's death in Difference than in No Difference. This is so even if you think that overdeterminers are causes.¹⁷ For it is very natural to think that the fact that whether the person lived or died hinged on what you did in the Difference scenario renders your contribution even *more* significant in that case. More generally: the less overdetermined the effect, the more significant the contribution, and the more overdetermined the effect, the less significant the contribution. This just

seems like a very intuitive thought, under the assumption that causal contributions come in degrees. But notice that, according to the Sufficiency Criterion, your contribution is exactly the same in both cases. So, if we want to capture this fact, we need something like the Necessity Criterion: we need to appeal to the idea that your contribution was necessary for the victim to die in the Difference scenario in a way or to an extent that it was not in the No Difference scenario.

As we have seen, on the assumption that there are degrees of causal contribution, there seem to be *at least two* initially plausible criteria for modeling or measuring them, one roughly based on sufficiency and one roughly based on necessity. (There could be others too, but here I will just focus on these two, since they strike me as the most obvious ones, and they are enough for the puzzle to arise.)¹⁸ Each criterion seems to work well in isolation. *Holding fixed the extent to which an act of yours meets one of the criteria*, meeting the other criterion to a larger extent seems to make you more of a contributor to an outcome.

In particular, when we focus on the contrast between the Difference and No Difference scenarios, we are holding fixed the extent to which the act meets the Sufficiency Criterion, and we are varying the extent to which the act meets the Necessity Criterion. As I noted, in that case we see that, the closer the act is to being necessary for the outcome's occurrence, the more of a contributor the agent seems. Conversely, we can think of cases where we hold fixed the extent to which an act meets the Necessity Criterion, and we vary the extent to which the act meets the Sufficiency Criterion. In those cases we also get the expected result: the closer the act is to being sufficient for the outcome, the more of a contributor the agent seems.

Compare, for example, two scenarios where the outcome is equally overdetermined but where the agent's contribution varies along the sufficiency dimension. One of these scenarios is our "No Difference" scenario, which I am renaming here as "No Difference (Strong)":

No Difference (Strong): You are one of many shooters that shoot at a victim. All of the shooters fire "strong" bullets, each of which is enough to kill the victim on its own.

No Difference (Weak): Again, you are one of many shooters. This time as you are pulling the trigger, the bird flies by and intercepts your bullet, reducing its momentum and turning it into a "weak" bullet. At the same time, however, the bird's flight dislodges a midsize boulder. Together, your bullet and the boulder have the same effect as one of the stronger bullets fired by the other shooters, and are sufficient to bring about the death.

The victim's death is heavily overdetermined in both cases, and to the same extent. But in No Difference (Strong) your contribution is closer to being sufficient than in No Difference (Weak), and thus, it is natural to regard your contribution as more significant in the former scenario than in the latter scenario.

III. 2 A puzzle

But the two criteria can enter in competition with each other. Let us see what happens when we *do not* hold fixed the extent to which an act meets one of the criteria. For example,

compare the contribution that you make in No Difference (Strong), this time not with the contribution that you make in No Difference (Weak) (another overdetermination case), but with the contribution that you make in Bullet-with-Bird (a scenario without overdetermination). Here are the two scenarios again:

No Difference (Strong): You are one of many shooters that shoot at a victim. All of the shooters fire “strong” bullets, each of which is enough to kill the victim on its own.

Bullet-with-Bird: You are the only shooter. When you shoot, a flying bird collides with the bullet, reducing its momentum in such a way that the bullet alone is no longer enough to kill the victim. But the flying bird also independently dislodges a midsize boulder. Although neither the bullet nor the boulder is enough in itself to bring about the death, together they are sufficient, and the victim still dies.

Notice what has happened here. Your contribution in No Difference (Strong) meets the Sufficiency Criterion to a large extent (yours is a strong bullet throughout) but the Necessity Criterion to a lesser extent (the death is heavily overdetermined). On the other hand, however, your contribution in Bullet-with-Bird meets the Necessity Criterion to a large extent (the death counterfactually depends on your shooting) but the Sufficiency Criterion to a lesser extent (your bullet is turned into a weak bullet by the bird).

What is the result of this mismatch? In which case do you make a more substantial contribution? Here I am at a loss about what to say. I feel like I just do not have any clear intuitions anymore. I find myself wanting to say: well, in a sense, your contribution is more

significant in the first case, and in another sense it is more significant in the second case. But this is unhelpful. For what we wanted to know, ultimately, is which of the two agents is *more morally responsible* for the victim's death in light of the causal contribution they made. In other words, what we need is an account of degrees of causal contribution that can be relevant to attributions of moral responsibility. We want to know which agent makes a more significant contribution, in the sense that matters to moral responsibility. And what is that sense? I feel like I do not know how to answer that question.¹⁹

Applied to the just war literature, the puzzle takes the following form. Who makes a larger contribution, in the sense that matters to a person's liability (the liability to be attacked during a war): someone who provides a large, in the sense of sufficiency, but unnecessary contribution to an unjust threat, or someone who provides a small, in the sense of sufficiency, but necessary contribution to the same threat? For example, who is more liable to attack, a technician who does small repairs in tanks (say, he fixes bolts when they snap) but who is the only one who knows how to do this in his unit²⁰, or another technician who makes larger repairs that others could have easily done? If the technicians' liability depended on, among other things, the extent of their causal contribution to the unjust threat, then these would seem to be questions one could legitimately ask and expect answers for. However, again, I at least am at a loss about what to say in response.²¹ And claiming that there is a sense in which the first technician contributed more and a different sense in which the second technician contributed more is, again, not helpful. For what we wanted to know is which technician is *more liable* on the basis of (among other things) the extent of their causal contribution, and this does not help us answer that question.

It is not just that I think it is hard to answer questions of that kind. The more serious problem is that I do not even know how to begin trying to answer them. This makes me think that perhaps the questions do not make sense, after all, and that it may be a mistake to think of necessity and sufficiency as genuine dimensions of causal contribution. In sum, although the idea of degrees of causal contribution is initially very intuitive, it gives rise to a difficult puzzle. The puzzle arises because, *if* there were degrees of causal contribution, it seems clear that they would have to track more than one dimension—at the very least, sufficiency and necessity, but, again, there could be others. And this raises the question of how the different dimensions interact with each other, which is a question that we just cannot get our minds around. So this at least motivates the thought that these “dimensions” might not be real dimensions after all, and that perhaps we should not think of causal contributions in this way, as the sum of forces pulling in different directions (of course, it does not yet prove this, but it can at least get us thinking in this way).²²

I see three main possible reactions to the puzzle. First, one could try to find a way of weighing the different dimensions against each other, or of arguing that some should be dismissed in favor of others, and hope that the result is not too counterintuitive, arbitrary, or ad hoc. For example, one could try to argue that sufficiency always trumps necessity, or the other way around.²³ Or one could argue that sufficiency and necessity have (roughly) the same weight, and thus that the contribution made by the agents in the cases that gave rise to the puzzle are (roughly) the same.²⁴

Second, one could accept some indeterminacy or incommensurability, and hope that the indeterminacy is not too widespread and that the resulting view of responsibility/liability is not too dysfunctional. For example, one could claim that although

in most cases it is possible to measure an agent's contribution or to compare it with the contribution of another agent, in some special cases, such as when the sufficiency and necessity criteria clash, this is not possible because the contributions are incommensurable. (Thus there is no fact of the matter as to who makes a larger contribution in these cases; all we can say is that one agent makes a more significant contribution along one dimension and that the other agent makes a more significant contribution along a different dimension. Of course, this view will not be very helpful at the time of settling issues about responsibility and liability in those cases.)²⁵

Third, one could reject the idea of degrees of causal contribution altogether, argue that it is all an illusion, and try to explain away the appearances. Of course, if it turns out that there are no degrees of causal contribution, the puzzle does not even arise. So, if we can successfully explain away the appearances, it seems to me that this is a good reason for preferring this third solution. I think that the appearances *can* be explained away, at least for the most part, and in the next section I discuss some strategies for doing just that. (Of course, I cannot discuss all possible appearances within the limited scope of this paper, so I will just focus on the types of scenarios that I used to formulate the puzzle, which I take to be paradigm examples of how degrees of causal contribution can be motivated; hopefully this will be enough to illustrate the plausibility of the idea that the appearances can be explained away more generally.) An important part of the argument will be that the same resources that can help explain away some of the appearances can also help explain why the puzzle seemed to arise in the first place, and why it is just an illusion. In other words, it can help motivate the *dissolution* of the puzzle. All of these reasons taken together, I believe, support my solution to the puzzle over the other possible solutions.

IV. Explaining away the appearances

IV. 1 Appealing to expectations and graded dispositions

Let us start with what I described as a possible initial motivation for accepting degrees of causal contribution in moral contexts. In section II above, I said that this involved an extension of some common reasoning about resultant luck, and to illustrate I introduced the Bullet-with-Bird scenario (where the bird slows down the flying bullet, but also dislodges a boulder, and then the bullet and boulder together are sufficient for the victim's death). This case was contrasted both with the original Bullet scenario, where nothing intercepts the bullet, and the Bird scenario, where the bird completely neutralizes the effect of the bullet. As I said then, in Bullet-with-Bird it is quite natural to regard the assassin as making a contribution to the victim's death that is less significant than in Bullet but more significant than in Bird, which would in turn result in the assassin's being less morally responsible for the death than in Bullet but more responsible than in Bird. Since everything else is equal in these cases (in particular, the assassin's epistemic state and his bodily movements are exactly the same), this motivates the idea that there can be degrees of causal contribution resulting in degrees of moral responsibility for outcomes.

But perhaps this appearance can be explained away. Maybe making a causal contribution is an on/off matter, which *just* consists in, very roughly, joining forces with other facts of the circumstances to collectively give rise to an outcome. (Notice that in saying this I am not committing myself to the truth of any particular account of causation; I take this to be a very general fact about causation, one that any plausible theory could in principle agree with.) As mentioned above, individual causes are never sufficient for their

effects in a strict sense; they are only sufficient against a background of other “collaborating” causes or circumstances. So maybe what is happening in this case is that the bird’s contribution is so unexpected that we have trouble picturing it as part of the background circumstances against which we judge the assassin’s contribution in this case. As a result, the assassin’s contribution does not seem sufficient, in the circumstances, for the victim’s death, and this results in the misguided impression that the assassin is less of a contributor.

To test this hypothesis, let us look at what happens when we switch to a scenario where we hold the agent’s contribution more or less constant, and where there is also a salient contributing cause, but the contributing cause is not at all unexpected. Consider, for instance, the following scenario:

Child: This time the victim is a child, and the assassin knows that shooting a weak bullet is enough to kill her. In order to cut costs (weak bullets are less expensive than strong bullets), he shoots a weak bullet at the child. Everything goes according to plan, and the child dies.

We may assume that the bullet shot by the assassin in this case is as “weak” as (has the same momentum as) the bullet in the Bullet-with-Bird scenario after it collides with the bird. The contributing cause in this case is the child’s vulnerability to such a bullet, which is an expected contribution, unlike the bird (or the bird-boulder combo). In a case like this, we do not regard the existence of such a contributing cause as in any way diminishing the extent of the causal contribution made by the assassin; on the contrary, we perceive the

assassin as being just as causally and morally responsible for the victim's death as in the original Bullet scenario, where the victim is an adult. So this suggests that the initial impression that the assassin contributes less to the death in Bullet-with-Bird was probably due to the unexpected nature of the contributing cause(s) in that case. In fact, his contribution is just as sufficient *in the circumstances* for the victim's death as it is in the Child case.²⁶

Now, there is still an important difference between what the assassin *does* in a scenario like Child and what he does in a scenario like Bullet. After all, he shoots a more powerful bullet in one case than in the other. But note that, although this is true, it does not show that there is a difference in the degree of the agent's causal contribution to the death in each case. For one can accept that there is a difference in the general dispositions or causal powers of the bullets, and a corresponding difference in the general dispositions or causal powers of the shooting acts²⁷, and even accept that this is a difference in degree, but still deny that this results in a difference of degrees of causal contribution to the outcome.

Interestingly, the recent literature on dispositions seems to be open to the idea that dispositions come in degrees.²⁸ It is certainly an intuitive idea. For example, it seems very natural to think of a champagne glass as in general *more fragile* than a regular glass, although both are fragile (beyond a minimal threshold), and similarly, it seems very natural to regard the strong bullet as in general *more harmful* than the weak bullet, although both are harmful (beyond a minimal threshold). A common strategy used by these theorists to make sense of graded dispositions is to cash out these differences in terms of a difference in the *range of possible scenarios* where certain stimulus conditions result in the relevant outcomes or manifestations. A champagne glass breaks in a wider range of scenarios of a

certain kind (scenarios where it is struck or dropped) than a regular glass. For example, it might break in scenarios where the glass is struck ever so slightly, whereas the regular glass does not. So the champagne glass is in general more fragile than the regular glass in that there is a wider range of scenarios where the relevant stimulus (striking or dropping it) results in the relevant manifestation (shattering). Similarly, the strong bullet is in general more harmful than the weak bullet in that shooting the strong bullet at a victim results in harm in a wider range of scenarios than shooting the weak bullet. For example, it results in the death of the victim in scenarios where the victim is an adult, in addition to scenarios where the victim is a child.

But, again, although there is a sense in which the assassin in Bullet “does more” than the assassin in Child (namely, he shoots a bullet than is in general more harmful), both of them in fact provide what is required *in the circumstances* for the victim’s death to occur. In *that* sense their contributions are the same. So perhaps a big part of what is going on in these cases is that we are conflating the general powers or dispositions of things, which arguably come in degrees, with actual causal contributions, which do not.

This point can help explain away other related appearances too. Imagine a victim that is so sturdy that it would take two bullets to kill her, although one of them can be strong and the other weak. Imagine that Assassin 1 shoots a strong bullet and Assassin 2 shoots a weak bullet, and the victim dies as a result of the two bullets hitting her. Imagine that both assassins were fully aware of what needed to be done to kill the victim, and they shot their bullets hoping that the other assassin will too (thus hoping that the victim would die as a result, which is exactly what happened). You might think that this is another type of scenario that motivates the idea of degrees of causal contribution, for there is a natural

sense in which, although both assassins made a contribution, Assassin 1 still “does more” than Assassin 2.²⁹ However, here too, we could account for this impression by pointing out that it is natural to be misled into thinking that the sense in which Assassin 1 “does more” than Assassin 2 is that he makes a larger causal contribution to the victim’s death, when all that is going on is that he shoots a bullet that is *in general* more harmful than the bullet shot by the other assassin. This last claim is a claim about the general causal powers of the bullets, one that speaks to the range of possible scenarios in which they contribute to outcomes of certain kinds, but it does not discriminate between degrees of causal influence of the various causes in the actual scenario.

At this point, it might be objected that this does not help at all, for the fact that one bullet is in general more harmful than the other only seems to reinforce the claim that one assassin makes a larger causal contribution than the other in the actual circumstances. If there are degrees of causal contribution, we can only expect them to be connected with the dispositions of things in precisely this kind of way; for example, when you shoot a more harmful bullet at a victim and everything goes according to plan, you make a larger contribution to the victim’s death than someone who shoots a bullet that is less harmful.

However, recall that at this point I am not trying to argue that there are no degrees of causal contribution; I am only trying to explain away the appearances, assuming that my suspicions are right and there are no degrees of causal contribution. And it seems that, even if there are no degrees of causal contribution, the idea that objects can have powers that come in degrees is extremely intuitive, much less problematic, and it could be used to account for the appearance that causal contributions come in degrees, since it is very natural to run them together. (On the other hand, of course, we *should not* run them

together, for what matters to our moral responsibility for particular outcomes is not the general dispositions of our acts but what our acts *actually* contribute to those outcomes, and this is their causal contribution.)

So, again, on the view that I am proposing, all there is to making a causal contribution is joining forces with other facts of the circumstances to collectively give rise to an outcome. A stronger bullet can join forces with a weaker bullet to collectively bring about a death, and when this happens each of them contributes something that is sufficient, in the circumstances, for the death to occur. For the stronger bullet, the circumstances include the contribution made by the weaker bullet, and vice-versa: for the weaker bullet, the circumstances include the contribution made by the stronger bullet. That is all. In particular, it is not the case that the stronger bullet makes more of a contribution than the weaker bullet. Still, the fact that there is a difference in the general dispositions or causal powers of the bullets can be used to explain the inclination to think otherwise.

IV. 2 Distinguishing dimensions from grounds

There is one other main type of scenario discussed above that needs to be explained away, one that cannot be dealt with in the same kind of way. Recall that, when I introduced the Necessity Criterion as an alternative to the Sufficiency Criterion in section III, I drew attention to the contrast between these two cases:

Difference: You are the only shooter aiming at a victim. You shoot and the victim dies.

No Difference: Unbeknownst to you, you are one of many shooters who are independently aiming at a victim. You shoot, and so does each of the other shooters. All the bullets reach the victim simultaneously, and each causes an amount of damage that would have been sufficient to bring about the victim's death on its own.

I pointed out that it is very natural to regard the agent in Difference as making a more significant contribution than the agent in No Difference. But note that in these cases all the bullets have the same general causal powers (they are equally strong throughout). So this is another type of scenario that could be used to motivate the idea of degrees of causal contribution, and one that cannot be dealt with in the same way as before.

How could this appearance be explained away? I think what might be going on in these cases is that we are confusing *grounds* for causation, or reasons to think that a causal relation exists, with degrees of causation, or dimensions along which causal contributions can be measured. The existence of counterfactual dependence between what you do and an outcome is typically³⁰ taken to be sufficient grounds for considering your act to be a cause of the outcome. In addition, starting a process that is sufficient (in the circumstances) for an outcome's occurrence is also typically³¹ taken to be sufficient grounds for being a cause. And, whereas only *one* of these grounds seems to obtain in No Difference, *both* of them seem to obtain in Difference.³²

Now, of course, the fact that there is more than one sufficient ground for thinking that something is a cause does not mean that we should regard it as more of a cause. (As an analogy, imagine a side table that can do double-duty as a barstool: the fact that there are two different sufficient grounds for considering it to be furniture does not make it more of

a piece of furniture!) Still, perhaps it could help explain why the agent in Difference appears to make a more significant contribution than the agent in No Difference.

The distinction between grounds for causation and degrees of causal contribution can also help with a diagnosis of the puzzle presented in section III. I argued that the puzzle arises for cases where the Sufficiency and Necessity criteria pull in opposite directions. The examples I used to illustrate were the No Difference scenario (the case where the victim's death is heavily overdetermined by many shooters, each of whom fired a strong bullet) and the Bullet-with-Bird scenario (the case with the single shooter and the bird, where the bird slows down the bullet but also dislodges the boulder, and then the bullet and the boulder jointly bring about the victim's death). Who makes a larger contribution to the victim's death, the assassins in the first case or the assassin in the second case? I said that I am at a loss trying to answer this question.

Again, being a sufficient condition for an outcome is typically taken to be sufficient grounds for thinking that it is a cause, and so is being a necessary condition for an outcome. And note that in each of these scenarios one of those grounds seems to be present while the other seems to be absent, at least at first sight. In the overdetermination scenario, each assassin's contribution seems to be sufficient but not necessary. Conversely, in the Bullet-with-Bird scenario, the assassin's contribution seems to be necessary but not sufficient. (At least initially, we do not see it as sufficient. Recall that in that case the bird is an unexpected contributing cause, so we do not tend to think of it as part of the background circumstances against which we are measuring the assassin's contribution; as a result, the assassin's contribution does not seem sufficient, on its own, to bring about the death.) So now we can see that the puzzle arises because what we were imagining to be different *dimensions* of

causal contribution are arguably best conceived of as different *grounds* for causation.

Taking them to be dimensions results in the misguided impression that we are dealing with forces that pull in opposite directions, which we then cannot “add up” in any meaningful way. On the other hand, taking them to be grounds results in conceiving them as scenarios where an event makes a causal contribution, but on the basis of different reasons in each case. Since there is nothing puzzling about this, the puzzle is dissolved.

V. Conclusions

I have argued that, however intuitive it might seem to think of some events as making a larger causal contribution than others, this is an illusion that can be explained away, and I have illustrated my reasoning with some paradigm examples. I conclude that we should reject the idea that there are degrees of causal contribution. In this final section I examine some consequences of this view.

As I mentioned in the introduction, rejecting degrees of causal contribution is likely to have important implications in moral theory. One of them concerns the concept of moral responsibility and, in particular, the phenomenon of resultant luck, where an agent’s moral responsibility is said to depend, in particular, on the agent’s actual contribution to a certain outcome. Consider the following scenario. Imagine that several people negligently release toxic substances into a lake, but, due to a series of external circumstances beyond anybody’s control, some of those substances evaporate before they can cause any damage. Still, imagine that enough of those substances remain in the lake, and as a result the water in the lake becomes polluted and a little boy, Jimmy, can no longer dive into the lake for his daily swim. If there is resultant luck, then how morally responsible each person is for the

outcome of Jimmy's no longer being able to swim in the lake depends on whether that person individually contributed to that outcome, where this is partly determined by factors beyond the agent's control, such as the evaporation rate of the substances that they released. But, if there are no degrees of causal contribution, this is an all-or-nothing matter: for each person, either she contributed to this outcome or she did not; it does not make sense to think of one person as contributing more or less than another.

This results in some surprising consequences. Imagine that each of three people (X, Y, and Z) released ten litres of toxic liquids in the lake. Imagine that the circumstances were such that all ten litres contributed to the lake's pollution in the case of one person, X (no evaporation of the toxic substances at all), zero litres in the case of a second person, Y (complete evaporation of the toxic substances), and only one drop in the case of a third, Z (close-to-complete but not fully-complete evaporation). So X and Z in fact causally contributed to Jimmy's no longer being able to swim in the lake but Y didn't. If there are no degrees of causal contribution for moral responsibility to track, then, assuming everything else is equal, there is no difference in moral responsibility between X and Z: they are both equally responsible for the outcome. On the other hand, there is an important difference between X and Y: whereas X is responsible for the outcome, Y is not. So Z is as responsible as X, and Y is not responsible at all (for the outcome of Jimmy's not being able to swim in the lake). But the difference between what Z contributed to that outcome and what X contributed to it is just one drop! This may seem incredibly unfair.³³

Indeed, it is a price to pay, but I think it is a smaller price than the one we would have to pay if we have opted for any of the other solutions to the puzzle described in section III. Basically, it is what you get when you combine the all-or-nothing nature of

causal contribution, or the rejection of degrees of causal contribution, with the possibility of resultant luck. It is an extension of the uneasiness about resultant luck that we are all familiar with at this point, one that reveals it as potentially even more problematic than we had initially thought, but it is a price that I am willing to pay, in the circumstances. Alternatively, if you thought there was something already highly problematic about resultant luck in general, then of course you could take this to be yet another reason to reject resultant luck. In any case, it is an interesting result that follows from the rejection of degrees of causal contribution.

There are also important implications for the ethics of war. If causal contributions do not come in degrees, then causation can still be relevant to an agent's liability to be attacked during a war, but only in the sense that *whether or not* an agent causally contributed to the unjust threat can be relevant to the agent's liability.³⁴ Making any contribution to an unjust war (be it shooting a gun or making a financial contribution to a war fund, contributing just one penny or a thousand dollars, fixing a bolt in a single tank or helping build a whole fleet of tanks, etc.), all of these behaviors are indistinguishable on purely causal grounds, if causal contributions do not come in degrees (assuming they all actually make a contribution). Thus it follows from this view that, if other things are equal (that is to say, if the other conditions for liability are met to the same extent), all of these agents who make a contribution are equally liable.

Note, however, that in most of these cases things are *not* likely to be equal. Thus, in most of these cases it is plausible to think that we will be able to make discriminations on other grounds. For example, soldiers who fire their guns or civilians who make large financial contributions to a war fund typically have more reason to believe that they will be

making a contribution, and thus that things will go as they want them to go, than agents who contribute just one penny. So, if differences of this kind matter to a person's liability (and it is reasonable to expect that they do), the implications of rejecting degrees of causal contribution will not be too radical. Ultimately, this is something that will depend on other aspects of one's theory of liability. Still, if I am right, an important lesson of this paper is that causation is too blunt an instrument to get us everything that some liability theorists had hoped to get from it. If so, they should probably look elsewhere to get it.

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Notes

¹ Kaiserman distinguishes the claim that causation comes in degrees from the claim that causal contributions come in degrees, and argues that only the latter is plausible (Alex Kaiserman, 'Causal Contribution', *Proceedings of the Aristotelian Society*, 116, 3 (2016): 387-94). An event's causal contribution is the contribution that the event makes to the obtaining of a causal relation. See also Alex Kaiserman, 'Partial Liability', *Legal Theory* 23, 1 (2017): 1-26.

² See Thomas Nagel, 'Moral Luck', in *Mortal Questions* (New York: Cambridge University Press, 1979), and Bernard Williams, *Moral Luck* (Cambridge: Cambridge University Press, 1981).

³ See Sara Bernstein, 'Causal Proportions and Moral Responsibility', in D. Shoemaker (ed.), *Oxford Studies in Agency and Responsibility: Volume 4* (New York: Oxford University Press, 2017), pp. 165-182, and Carolina Sartorio, 'A New Form of Moral Luck?', in A. Buckareff, C. Moya, and S. Rossell (eds.), *Agency, Freedom, and Moral Responsibility* (Palgrave-Macmillan, 2015), pp. 134-49.

⁴ See, e.g., Jeff McMahan, 'The Ethics of Killing in War', *Ethics* 114 (2004): 693-733, Jeff McMahan, *Killing in War* (Oxford: Oxford University Press, 2009), and Cécile Fabre, 'Guns, Food, and Liability to Attack in War', *Ethics* 120 (2009): 36-63.

⁵ McMahan, 'The Ethics of Killing in War', op. cit., pp. 711 and 728.

⁶ Fabre, op. cit., p. 61.

⁷ McMahan, 'The Ethics of Killing in War', op. cit., pp. 725-6; Fabre, op. cit., p. 61.

⁸ For discussion of some of these points and a more sceptical view on the matter, see Seth Lazar, 'The Responsibility Dilemma for Killing in War', *Philosophy and Public Affairs* 38, 2 (2010): 180-213, pp. 190-3, and Helen Frowe, *Defensive Killing* (Oxford: Oxford University Press, 2014), p. 175. On Frowe's view, the causal component of liability is exhausted by whether or not a person made a contribution to the unjust threat; there are no degrees of causal contribution.

⁹ Tadros has recently argued against the relevance of the idea that causal contributions come in degrees for debates about liability in just war theory (Victor Tadros, 'Causal Contributions and Liability', *Ethics* 128 (2018): 402-31). The conclusion I argue for in this paper is more sceptical than Tadros' own conclusion, in that he is willing to grant that there may be genuine ways of making sense of the idea that causal contributions come in degrees (it is just that he thinks that the resulting accounts of degrees of causal contribution do not capture anything that is relevant to liability, or anything new that is relevant to liability). I will argue that there is a more fundamental problem with the idea of degrees of causal contribution in a moral setting, one that should lead us to reject it altogether.

¹⁰ See, e.g., Ned Hall, 'Two Concepts of Causation', in J. Collins, N. Hall, and L. A. Paul (eds.), *Causation and Counterfactuals* (Cambridge, MA: MIT Press, 2004), and Christopher Hitchcock, 'Three Concepts of Cause', *Philosophy Compass* 2, 3 (2007): 508-16.

¹¹ One of them is Lewis's "influence" account (David Lewis, 'Causation as Influence', *Journal of Philosophy* 97, 4 (2000): 182-97). Bernstein makes this point in Bernstein, op. cit.

¹² I discuss this point in Carolina Sartorio, 'Resultant Luck', *Philosophy and Phenomenological Research* 84, 1 (2012): 63-86.

¹³ Note that an important feature of this case is that the outcome (the victim's death) does not seem to be "decomposable" into parts, at least if we are thinking of the death simply as something like the cessation of the relevant biological functions. Scenarios with outcomes that are decomposable into parts are not as interesting because they can be analyzed in terms of the contributions that each of the causes makes to each of the parts. Imagine that I contribute \$1 toward a charitable fund, other people contribute other amounts, and we end up with a total of \$100. There is a sense in which somebody who contributed \$10 to the fund contributed "more" than me, but this is easily analyzable in terms of her having contributed *a larger part of the outcome* than me. This is consistent with the sceptical conclusion of this paper: even if causal

contributions don't come in degrees, it can make sense to understand some outcomes as being composed of parts, and in those cases it can make sense to think about the contribution that different events make to the different parts.

¹⁴ Sometimes cases of this kind are called "symmetric overdetermination" cases, to distinguish them from other (asymmetric) cases of causal redundancy, in particular, preemption cases. In a preemption case, there is a process that actually results in an outcome and another process that does not cause the outcome but remains as a mere backup (thus, there is an asymmetry in the causal contribution made by the two processes). In contrast, in an overdetermination case such as Bullet-and-Bird, the contributions of the two processes are symmetrical.

¹⁵ Kaiserman proposes a criterion of this kind, which he spells out in terms of objective probabilities (Kaiserman, 'Causal Contribution', op. cit.). For a related alternative, see Matthew Braham and Martin van Hees, 'Degrees of Causation', *Erkenntnis* 71, 3 (2009): 323-44. Both are inspired by the notion of minimal sufficiency that underlies Mackie's classical account of causation (John Mackie, 'Causes and Conditions', *American Philosophical Quarterly* 2, 4 (1965): 245-64).

¹⁶ Chockler and Halpern develop an idea along these lines, in terms of the number of changes that would have to be made for the effect to counterfactually depend on the cause (Hana Chockler and Joseph Halpern, 'Responsibility and Blame: A Structural-Model Approach', *Journal of Artificial Intelligence Research* 22 (2004): 93-115). For other accounts of causal contribution that rest on the notion of counterfactuals and difference-making, see Elliott Sober, 'Apportioning Causal Responsibility', *Journal of Philosophy* 85, 6 (1988): 303-18, and Robert Northcott, 'Comparing Apples with Oranges', *Analysis* 65, 1 (2005): 12-18.

¹⁷ The literature is actually divided on the issue of whether overdeterminers are causes. Some argue that they are not (see, e.g., David Lewis, 'Causation', in *Philosophical Papers II* (Oxford: Oxford University Press, 1986), pp. 159-213); others argue that they are (see, e.g., Jonathan Schaffer, 'Overdetermining Causes', *Philosophical Studies* 114 (2003): 23-45).

¹⁸ For discussion of other potential criteria such as spatiotemporal distance, see Michael Moore, *Causation and Responsibility: An Essay in Law, Morals, and Metaphysics* (Oxford: Oxford University Press, 2009). Moore is particularly interested in the notion of causation presupposed in the law, which he thinks is a graded notion.

¹⁹ Bernstein discusses a similar puzzle, which she attributes to the existence of competing concepts of causation: a "dependence" concept and a "productive" concept (Sara Bernstein, 'Causal and Moral Indeterminacy', *Ratio* 29, 4 (2016): 434-47, and Bernstein, op. cit.). See also n. 25 below.

²⁰ Christie considers a similar case involving a private who is the only one who can charge the battery in a radio (Lars Christie, 'Causal Contributions and Liability to Harm', unpublished manuscript).

²¹ Note, in particular, that it is typically easier to answer comparative questions (such as "Which act is morally worse, A or B?") than absolute, non-comparative questions (such as "How bad is act A?"). But in this case the question we are asking is a comparative question ("Which technician makes a more significant contribution to the unjust threat, the first one or the second one?"). Still, I have no clue how to answer it.

²² A similar puzzle arises for moral responsibility itself, given the different dimensions or components of responsibility. For example, it is common to assume that in order for agents to be morally responsible, they must meet at least a control condition and an epistemic condition, and it is also quite intuitive to think that agents can meet those conditions to varying degrees. Holding fixed how in control the agent is, varying the epistemic condition seems to result in varying degrees of responsibility, and vice-versa. But how should we compare, for example, the

responsibility of an agent who acts with full certainty that he will do wrong but has little control over his acts, with the responsibility of an agent who has more control over his acts, but is less certain that he is doing wrong? This is a puzzle for any view that takes responsibility to come in degrees. I will not discuss it here. The puzzle about causal contributions strikes me as more serious and fundamental, basically because I think it vividly brings out the implausibility of conceiving features like sufficiency and necessity as genuine *dimensions* of causal contribution (as opposed to something like grounds for causation; see section IV), which is something I do not see as clearly in the case of responsibility.

²³ Kaiserman ('Partial Liability', op. cit.) argues for the former view. So do Beebee and Kaiserman in their contribution to this volume (Helen Beebee and Alex Kaiserman, 'Causal Contribution in War', *Journal of Applied Philosophy*, forthcoming).

²⁴ Note that this is significantly different from the view that meeting either the sufficiency criterion or the necessity criterion is sufficient for making a causal contribution (a view that carries no commitment to causal contributions coming in degrees). I discuss this type of view below in the text, where I discuss the idea that sufficiency and necessity can serve as different grounds for responsibility. As I note there, this is a quite plausible idea—a much more plausible idea, I think, than arguing that sufficiency and necessity have roughly the same weight (a view that to me sounds arbitrary and ad hoc).

²⁵ This seems to be Bernstein's view (about responsibility); see Bernstein, 'Causal and Moral Indeterminacy', op. cit., and 'Causal Proportions and Moral Responsibility', op. cit. Bernstein argues that there is indeterminacy arising from the fact that it is indeterminate which concept of cause underlies our judgments of moral responsibility: either a productive concept or a dependence concept (for the distinction between these two concepts of causation, see Hall, op. cit.). But she fails to discuss why we should not think that this is a serious problem for the resulting theory of responsibility. See also Alex Kaiserman, "'More of a Cause': Recent Work on Degrees of Causation and Responsibility', *Philosophy Compass* 13, 7 (2018).

²⁶ Another possible explanation of the fact that the agent in Bullet-with-Bird seems less responsible for the victim's death, which also appeals to the unexpected nature of the circumstances, is to say that the causal route is "deviant" (it comes apart from what the agent could reasonably foresee would happen) to some relevant degree. Too much deviance in the causal chain is, many people think, enough to get the agent off the hook, so perhaps a little deviance is enough to make him less responsible? However, this does not strike me as the right explanation in this case, because the causal route is not *too* different from what the agent expected. Also, we can imagine cases where things fail to go exactly according to plan, but in a way that seems to make the agent *more* of a contributor (for example, the external circumstances could make it the case that the bullet shot by the assassin ends up being stronger rather than weaker). Since I think we would not regard the agent as any less responsible for the victim's death in that kind of case, this suggests that deviance is not the explanation we are looking for.

²⁷ I am thinking that the differences in the objects' dispositions could result in differences in the general causal powers of the relevant events/acts. The latter could be understood in terms of type-causation claims. For example, "Smoking ten cigarettes a day causes more harm than smoking five cigarettes a day" seems true as a type-causation claim, even if it is not always true when applied to specific instances involving token events. The same goes for "Shooting a strong bullet causes more harm than shooting a weak bullet."

²⁸ See, notably, David Manley and Ryan Wasserman, 'A Gradable Approach to Dispositions', *The Philosophical Quarterly* 57, 226 (2007): 68-75, and Barbara Vetter, 'Dispositions without Conditionals', *Mind* 123, 489 (2014): 129-56.

²⁹ Kaiserman ('Causal Contribution', op. cit.) describes a similar example, one where a committee votes unanimously in favor of a certain policy, but the chair of the committee has two votes instead of just one, and thus appears to make a larger contribution than the other members of the committee.

³⁰ With the usual provisos; for example, the dependence must not be backtracking and it must be between logically independent events.

³¹ Again, with the usual provisos; for example, the process must not be causally preempted by another process.

³² I remain neutral on how exactly we should understand the idea that sufficiency and necessity are different grounds for responsibility. This could be tracking real metaphysical grounds (causation itself has multiple grounds), or it could be just epistemic (noticing that an event is sufficient or necessary for another event is a way of acquiring evidence that a causal relation obtains between them).

³³ I discuss a similar example in Sartorio, 'A New Form of Moral Luck?', op. cit. Note that the outcome I am focusing on, Jimmy's no longer being able to swim in the lake, is an outcome that is not decomposable into smaller parts (see n. 13 above). This is why, if causal contributions fail to come in degrees, it does not seem possible to make discriminations between what X and Z contributed to *that* outcome and thus how responsible they are for *that* outcome. Still, it might be possible to make other kinds of discriminations concerning other outcomes that *are* decomposable, such as the number of drops of toxic substances that are present in the lake and that were released by each of X and Z.

³⁴ Except, again, in those special cases of decomposable outcomes. See n. 13 and 33 above.