CAUSAL AND MORAL INDETERMINACY

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Abstract

This paper argues that several sorts of metaphysical and semantic indeterminacy afflict the causal relation. If, as it is plausible to hold, there is a relationship between causation and moral responsibility, then indeterminacy in the causal relation results in indeterminacy of moral responsibility more generally.

1. Introduction

Vagueness and indeterminacy are thought to infect many of our most important metaphysical tools—existence, composition, persistence, parthood, essence, and identity, to name a few. More recently, vagueness and indeterminacy have been thought to infect our moral properties and predicates as well: terms like "is permissible", for example, are thought to be vulnerable to vagueness and indeterminacy.[1] Here I uncover several new forms of indeterminacy in the causal relation. First, I will argue that causation is indeterminate in certain important cases of causation by omission. Second, I will show that it is indeterminate which causal concept to employ in many cases of moral evaluation regarding agents' causal contributions to outcomes. If, as it is plausible to hold, there is a relationship between causation and moral responsibility, then the sorts of indeterminacy that afflict the causal relation have serious consequences for the metaphysics of moral responsibility.

I will make several assumptions in my discussion. First, I will assume that there is a relationship between causation and moral responsibility. I will not specify the exact nature of it or of moral responsibility more generally, but the idea will be that one is generally morally responsible for what one causes. I do not take causation to be sufficient for moral responsibility, but I do take causation to be centrally important to moral

[1] One recent argument to this effect comes from Miriam Schoenfield in her "Moral Vagueness is Ontic Vagueness" (2015) *Ethics* 126 (2): 257-282. She argues that if moral realism is true, the predicate "is permissible" is vague.

assessment. For example, I take it that the assassin's *actually* shooting and killing Victim, rather than merely intending to shoot Victim (or shooting and missing Victim), is important for the moral assessment of the assassin's actions. Here I set aside intentions, promises, moral obligations, knowledge of likely outcomes, and other normative features of such cases that would normally be considered relevant. The major focus of my discussion will be the type of causal responsibility that is relevant to moral responsibility, however much causation matters to moral responsibility in comparison to other normative elements.[2]

Second, I hold that omissions—roughly, the non-occurrence of positive events—can be *causes*, as when a failure to repair the pipe causes the building to leak; *effects*, as when the building leak causes the meeting's cancellation; and causal *intermediaries*, as when the same meeting's cancellation causes the committee to be reconstituted. Whether or not omissions are causal is controversial. Some deny that omissions can be causes at all.[3] Others hold that omissions can serve as causal *explanations*, but are not, in fact, causal.[4] I hold that omissions *are* causal in the ways that matter insofar as they play comparable predictive, explanatory, and moral roles as normal "positive" events.[5]

2. Metaphysical Indeterminacy of Effects and Causes

In this section I will argue that the *relata* of causation can be metaphysically indeterminate. I say "can" because I do not think that they are *always* indeterminate. Rather, certain special cases of causation by omission and action exhibit indeterminacy, and thus there is indeterminacy in the causal relation more generally. There are cases in which it is indeterminate exactly which particular effect within a range of effects is brought about. There are also cases in which it is indeterminate exactly which cause within a range of causes brings about a particular effect.

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[2] I will remain as neutral as possible on what moral responsibility is, though it will be helpful to assume that moral responsibility is moral blameworthiness or praiseworthiness.

[3] For example, Phil Dowe in *Physical Causation* (2000) New York: Cambridge University Press.

[4] Helen Beebee is a prominent proponent of this view. See her 'Causing and Nothingness' in: *Causation and Counterfactuals* (2004) Ed. by John Collins, Ned Hall, and L. A. Paul. Cambridge: MIT Press, pp. 291–308.

[5] I give fuller arguments for this conclusion in Bernstein "Omission Impossible" *Philosophical Studies* (forthcoming) and "Omissions as Possibilities" (2014) *Philosophical Studies* 167 1-23.

To begin, consider the following example, taken from Sartorio's (2006) "Failures to Act and Failures of Additivity":

> **Battlefield**: Jane is at the battlefield and sees that four of her soldiers are about to be slaughtered by the enemy. She could save any one of them, but only one of them. (She only has one bullet left, and each one of her soldiers is being attacked by one enemy soldier). She cannot get herself to choose which one to save so they all die.[6]

First question: for what is Jane causally responsible?

It is implausible to hold Jane causally responsible for all four soldiers' deaths, since she could have, at most, saved only one of them. And it is implausible to hold that Jane was responsible for any particular soldier's death, since there are no grounds for holding that she failed to save *that* soldier over the others. Moreover, it seems wrong that Jane was responsible for *none* of the soldiers' deaths, since she could have saved one of them. What is a good diagnosis of the causal structure of this case?

Sartorio suggests that Jane is responsible for each soldier's death, but not *all* soldiers' deaths. She holds that Battlefield constitutes a counterexample to the additivity of causation. According to additivity, if *c* is a cause of some effects, *c* is also a cause of their sum. There are two readings of these cases: "*c* caused *e*1 and *e2* and *e*3" versus "*c* caused their sum". The former can be true while the latter isn't, thus avoiding the conclusion that Jane is responsible for the sum of the soldiers' deaths.

But accepting that Jane is a cause of each soldier's death while denying additivity has several undesirable consequences. First, the causal verdict seems to deliver an incorrect moral verdict. The result lies in tension with the principle that ought implies can, since Jane could not have saved each of the lives, and so should not be held responsible for each death. It seems incorrect to say, of any particular soldier, that Jane is morally responsible for that soldier's death. Moreover, the consequences of this view become less plausible as the number of *relata* increases, as illustrated by the following case:

> **Road Safety Czar**: A road safety czar takes the day off. He was supposed to

[6] This example is drawn and slightly modified from Carolina Sartorio's "Failures to Act and Failures of Additivity" (2006) *Philosophical Perspectives*, pp. 373– 385, which uses the example for a different purpose.

> check one freeway that day; there are one hundred freeways to check. Suppose that a fatal accident happens on each freeway that was not checked, and each accident is due in some way to bad road conditions that could have been prevented had the Safety Czar done his job.

According to Sartorio's view, the Safety Czar is responsible for each of 100 fatal accidents, but not *all* of the accidents. But, even with a denial of additivity of causation, this is an undesirable and counterintuitive result.

Another solution is to hold that such cases are evidence for *disjunctive* effects. In a causal claim, disjunctive effects take the form "C caused either e1 or e2 or e3 to occur." Thus Jane caused *either* soldier 1 or soldier 2 or soldier 3's death, but not all the soldiers' deaths.[7] Ballarin argues for this interpretation of Sartorio's case, holding that Jane caused one of the soldiers to die, but no particular soldier is such that Jane caused her death.[8]

But there are several reasons to reject disjunctivity of effects. First: supposing that the causal *relata* are spatiotemporally located events, it is unclear how disjunctive events could have specific spacetime locations. Second: there are no principled restrictions on how many disjunctions there are. Consider that, in addition to bringing about the disjunctive outcome involving the soldiers, Jane's failing to shoot the gun also brought about several other disjunctive outcomes: Soldier 1's death OR the destruction of the Eiffel Tower, for example. Disjunctive effects open a theory of causation to the inclusion of intuitively irrelevant causal *relata*. Profligate disjunctive effects are a high theoretical cost. Third, accepting disjunctive effects makes one vulnerable to accepting that causes, as well as effects, can be disjunctive. Consider a case in which any one of multiple soldiers could shoot any one of many enemy soldiers, but none do. Here, there is a temptation to diagnose the cause as well as the effect as disjunctive. Accepting disjunctivity of causes *and* effects only seems to amplify the problems mentioned. But denying disjunctivity of causes while accepting disjunctivity of effects is a commitment to an unexplained asymmetry between causes and effects. Disjunctivity of causal *relata* is to be avoided, if possible.

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[7] In "Disjunctive Causes" *Journal of Philosophy* (2006) 103 (10): 521-538, Sartorio argues that causes can be disjunctive.

[8] Roberta Ballarin "Disjunctive Effects and the Logic of Causation" (2014) *British Journal for the Philosophy of Science* 65, pp. 21–38.

On to a solution. The best diagnosis of the case is that it is afflicted by causal indeterminacy. Jane is determinately responsible for *a* death, but it is indeterminate *which* death she caused. Indeterminacy avoids problems with disjunctive causes and with the denial of the additivity of causation, while providing an elegant and intuitive diagnosis of the case.[9]

Indeterminacy comes in several varieties, including *semantic* indeterminacy, *epistemic* indeterminacy, and *metaphysical* indeterminacy. Causal indeterminacy in this case is of the latter sort, for the following reasons. Semantic indeterminacy involves indeterminacy in a concept or expression rather than in reality, and is exemplified in vague terms like "cloud" that apply imperfectly to fully determinate reality. But the battlefield case does not involve ambiguity in the concept or expression of the term "cause". Precisification of the term "cause" is of no help in this case, for there is not an underlying range of different causal relations to each soldier's death available to ground further precisifications of the term. Nor is epistemic indeterminacy the salient sort. Epistemic indeterminacy involves epistemic uncertainty about facts of the matter. But even an ideal epistemic situation would not help determine exactly what Jane caused. There is no fact of the matter hidden from human evaluation and expression; there is no uniquely human limit that frustrates attempts at knowing the truth. In contrast, metaphysical indeterminacy is perfectly suited to the task of accounting for Battlefield. Battlefield involves indeterminacy "in the world" rather than in thoughts, concepts, expressions, or epistemic situations.

Now, the existence and nature of metaphysical indeterminacy is a source of great controversy. Following Barnes and Williams, I take metaphysical indeterminacy to involve *multiple complete precisifications of reality*.[10] In more detail: assuming a framework of possible worlds (where possible worlds are maximal ways things can be), the hallmark of Barnes/ Williams indeterminacy is *multiple actualities*. That there are multiple distinct actualities means there is at least one actual world at which *e* occurs and

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[9] Eric Swanson (*Indeterminacy in Causation*, forthcoming, *Philosophical Quarterly*) independently argues for causal indeterminacy in these cases on different grounds having to do with the logical structure of causal claims.

[10] Barnes, Elizabeth and J. R. G. Williams "A Theory of Metaphysical Indeterminacy" (2011) In Karen Bennett and Dean W. Zimmerman, editors, *Oxford Studies in Metaphysics* volume 6, 103–148. Oxford University Press.

at least one actual world at which *e* does not occur. Battlefield is best represented by multiple actual worlds, each containing a distinct causal responsibility of Jane. Which one obtains is metaphysically unsettled. For example: there is a possible world in which Jane is causally responsible for Soldier 1's death, a possible world in which Jane responds to Soldier 2's death but not Soldier 1's death, and so on.[11]

Though Battlefield seems to be an isolated, outré case, this type of metaphysical indeterminacy turns out to be ubiquitous. Consider the case of giving to charity, adapted from Unger's Living High and Letting Die:

> **Charity**: Giving $100 to the Oxfam Emergency Fund will save exactly one human life. You fail to give the $100.[12]

Exactly whom did you fail to save? You did fail to save *someone,* since it is determinately true that giving $100 would have saved exactly one person. Given basic assumptions about the structure of the charity, there are no grounds for holding that you failed to save any particular person who would have received the money from the charity: there is no determined order about the flow of money to specific persons in need. And it is also implausible that you failed to save *every* person suffering from famine to whom the charity would have given money, since $100 would have only saved one person.[13] Rather, it is most plausible that it is indeterminate exactly which person you failed to save.

With a basic model and several examples of causal indeterminacy in hand, we can move on to more complex types of causal determinacy and indeterminacy. One interesting lesson from the Battlefield case and ones like it is that there can be

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11 Here I utilize Barnes and Williams' account of metaphysical indeterminacy owing to its being an especially good fit for these purposes. Though other accounts of indeterminacy might fit the bill, some are not suitable for accounting for the cases under discussion. I do not use Wilson's account developed in "A Determinable-Based Account of Metaphysical Indeterminacy" (2013) in *Inquiry* 56:4 359-85, for example, because the determinate/ determinable relationship does not apply to negative properties and events, which are those at stake in cases of causation by omission. I argue for this principle in my (2014) "Two Problems for Proportionality about Omissions", *Dialectica* 68:3 429-441.

12 Peter Unger, *Living High and Letting Die*. (1996) Oxford: Oxford University Press.

13 Sartorio argues that the failure of additivity of causation rescues us from the causal result that we are each disproportionately responsible for entire famines. She writes: "When there is a failure of Additivity, the evils we cause individually don't add up to a single collective evil for which we are also causally responsible." ("Failures to Act and Failures of Additivity" 2005, p. 14)

determinacy in *quantity* of causal responsibility without determinacy in causal responsibility more generally. Intuitively, Jane caused a ¼ portion of the outcome, or exactly one soldier's death out of four deaths that she could have prevented. Similarly, failing to give $100 to OxFam causes exactly one human death, but it is indeterminate *which* death. In both cases, it is indeterminate exactly which portion of the outcome the omission causes, but determinate that the omission caused a particular portion of the outcome.

But the topic quickly becomes more complex when the quantity of causal contribution differs between causal possibilities. Consider the following modified version of Battlefield:

> **Propane Truck:** Jane is on the battlefield and sees that four of her soldiers are about to be slaughtered by the enemy. Jane has one bullet left. Jane could either shoot at one enemy soldier, thus saving one of her soldiers, or shoot a propane truck that would take out two enemy soldiers, thus saving two of her own soldiers. She does not take any action, so all of her soldiers die.

Here, Jane could have saved either any one soldier or any two soldiers, but saves none. For what is she causally responsible?

Supposing that no particular action on Jane's part would have been likelier than another, this case exhibits three kinds of metaphysical indeterminacy. First, there is indeterminacy with respect to what Jane causes, since she could have taken any number of actions but did not. But there is an additional kind of *counterfactual* indeterminacy regarding what action Jane would have taken, for since no omitted action was likelier than the other, no possible world containing the action omitted in the actual world is closer to actuality than any other. Supposing that each effect that Jane might have caused was equally likely, there are no grounds for holding that the world in which Jane shoots the propane tank is closer than the world in which she shoots an enemy soldier. Not all cases of causal indeterminacy involve counterfactual indeterminacy: in a variant on the case in which Jane is more likely to shoot the propane tank than the enemy soldier, it is determinate that the world in which Jane shoots the tank is closest to actuality. Ties for closeness generate counterfactual indeterminacy: scenarios in which multiple, equally close worlds can each lay claim to representing reality accurately.

Propane Truck also exhibits what might appropriately be called *quantitative* indeterminacy, or indeterminacy in the amount of causal responsibility borne by a cause to an outcome. For since it is indeterminate which action Jane would have taken had she done something, it is thereby indeterminate which quantity of the outcome she caused. If she had shot the propane truck, she would have saved two soldiers. If she had shot an enemy soldier, she would have saved one soldier. Due to her failure to take action, Jane clearly caused *some* portion of the outcome, but there are no grounds for holding that she caused one soldier's death rather than two soldiers' deaths.[14] Quantitative indeterminacy is closely related to counterfactual indeterminacy, since the former involves multiple equally close possibilities containing quantitatively different causal contributions.[15] Quantitative indeterminacy renders a case like Propane Truck doubly indeterminate: not only is it not precise what Jane is responsible for, but it is also not precise how much of the outcome she caused.

So far I have focused on cases in which there are several equally plausible candidates that can lay claim to being the outcome, leading to metaphysical indeterminacy with respect to which effect is caused. But the lessons drawn apply *mutatis mutandis* to causes as well. Consider:

> **Life-Saving Button:** Any one of fifty doctors can press a button that will result in delivering life-saving medication to a patient. No doctor presses the button, and the patient dies.

This case shares the structure of the previous cases, except that indeterminacy afflicts the cause rather than the effect. It is incorrect that *no* doctor caused the patient's death, since for each of them, pressing the button would have saved the patient. It is incorrect to hold that *every* doctor caused the entirety of the patient's death, since all of them at once could

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[14] There is also a case to be made that it is indeterminate exactly what Jane's omission is, for in failing to take action, she either omitted to save one soldier or omitted to save two soldiers. But, since she could not take both actions, it would be incorrect to say that she both failed to save one soldier *and* failed to save two soldiers.

[15] Here I follow Stalnaker rather than Lewis in holding that ties for closeness result in indeterminacy rather than straight-up falsity. Swanson (forthcoming) also discusses this point. For more on the original debate, see Stalnaker (1968) "A Theory of Conditionals" in: *Ifs: Conditionals, Belief, Decision, Chance, and Time*, eds. William L. Harper, Robert Stalnaker, and Glenn Pearce. Dordrecht: D. Reidel, and also Lewis' (1973) *Counterfactuals* Malden, MA: Basil Blackwell Ltd.

not have saved the patient. And there are no grounds for holding one particular doctor causally responsible over the others. The best diagnosis of the case is that it is metaphysically indeterminate who caused the patient's death.

And another case:

> **Zombie Apocalypse**: Furniture must be placed in front of a door or else zombies will break into the building and kill the apocalypse survivors. The furniture is too heavy for any individual to lift; two people are required to lift it, and only two people can lift it. Six people refrain from lifting the furniture, resulting in the death of the survivors.

Which pair of people is causally responsible for the deaths? As usual, there are several indefensible answers. One cannot hold that *all* pairs are causally responsible for the deaths, for multiple reasons. First, such a view would result in causal overdetermination, since any particular person would belong to multiple pairs. Second, only one pair of people can lift the furniture. It is implausible to hold any particular pair responsible, since there are no grounds for selecting one pair over another. Rather, the best diagnosis of the case is that it is metaphysically indeterminate which pair caused the zombie break-in.

There are also cases that exhibit indeterminacy of both causes and effects. Consider the following modification of Unger's charity case:

> **Collective Failure to Give**: If any one person gives $100 to the OxFam Emergency Fund, one life will be saved. No one gives.

In this case, it is metaphysically indeterminate who causes the failure of the life to be saved, and additionally indeterminate exactly *which* life is not saved. For both the cause and the effect, there are multiple complete precisifications of both causal *relata*: multiple actualities containing distinct failures to give, and multiple actualities containing distinct lives that are not saved.

Holding agents determinately morally responsible for what they cause requires determinacy in the causal relation. These cases suggest that the type of moral responsibility tied to causation is similarly afflicted with indeterminacy. If it is metaphysically indeterminate what Jane causes in the Battlefield case, then the moral attribution in the case is also indeterminate.

There are a variety of objections to be made based on the relationship between

causation and moral responsibility; space forbids me from addressing all of them. Here I will address several major ones.

One objection holds that moral responsibility is to be divorced from moral blameworthiness. Moral blameworthiness can be attributed to Jane based on what she failed to do. This objector asks: why not view the case differently and hold Jane morally responsible for *failing to take action* rather than bite the bullet on indeterminacy about effects?

Several reasons. First, retaining a link between actual causation and moral responsibility is important for moral theory more generally. Holding Jane morally responsible for failing to take action is only part of the causal story. For if she had failed to take action in a different scenario (for example, a scenario in which the enemy soldiers were equipped with rubber bands, rather than guns), her omission would not have resulted in serious consequences. It is the *results*—the deaths of the soldiers—that are morally important to the case. Heeding results in addition to actions respects the practical and legal implications of denying responsibility for the soldiers' deaths. Families of the deceased soldiers testifying in court against Jane do not care only that she failed to act; they care that her failure to act resulted in at least one death that could have been prevented. Attributing moral blameworthiness to the omission apart from its result leaves out a large swath of morally important information. Second: it is methodologically important to treat complex omissive causation as much like "normal" causation as possible. Suppose that, in a variant on Battlefield, there is only one enemy soldier that Jane fails to shoot, and only one allied soldier to save. Here, the picture of moral culpability is simple and straightforward: Jane is morally at fault for failing to save her one allied soldier. Scaling the case up should not result in radically different treatment: the complexity of Battlefield is no reason to retreat into a different sort of moral diagnosis of the case involving only the omitted action.

One might also hold that accepting causal indeterminacy of the sort described is simply too high a theoretical cost, given that important dependent concepts like moral and legal responsibility depend on causal responsibility. This objection holds that indeterminacy should be seen as a last resort, but not considered a diagnostic solution to cases like Battlefield.

I respond: comparable alternatives to accepting causal indeterminacy are equally, if not more, undesirable than indeterminacy. Holding agents responsible for more deaths than they could have prevented would be a *reductio* of a theory that posits such a solution. Agents should not be absolved of responsibility entirely simply because the situations are complex. And it is implausible to divorce moral responsibility from causation entirely, since responsibility should at least partly depend on actual outcomes.

3. Semantic Indeterminacy in the Causal Concept

One assumption of the previous examples is that there can be quantitative differences in causal contributions. Both causes and effects can be divided: causal contributions to outcomes can quantitatively differ, and outcomes can be divided according to causal contributions.[16] I also discussed a type of *quantitative indeterminacy*, or indeterminacy with respect to quantitative causal contributions to outcomes, having to do with *counterfactual indeterminacy*, or indeterminacy generated by equally likely causal scenarios. In this section I present a new kind of quantitative causal indeterminacy, and argue that it leads to indeterminacy in quantitative moral judgments.

Consider the following pair of cases:[17]

> **Overdetermining Assassins:** Suzy and Billy are each dispatched to kill Victim. Suzy and Billy each shoot Victim at the same time; each bullet enters Victim's heart at the same time; Victim dies.
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> **Unwitting Teamwork Assassins:** Suzy and Billy are each dispatched to kill Victim. Suzy and Billy each shoot Victim at the same time. Unbeknownst to both assassins, Victim is particularly strong and requires two bullets for his demise.

Overdetermining Assassins is a case of *causal overdetermination*, a scenario in which multiple causes are individually sufficient to bring about an outcome. Unwitting Teamwork Assassins is a case of *joint causation*, a scenario in which multiple causes are

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[16] I argue that causation comes in degrees in Bernstein, *Causal Proportions and Moral Responsibility* (committed to *Oxford Studies in Agency and Responsibility*, ed. David Shoemaker, 2017). See also Matthew Braham & Martin van Hees' "Degrees of Causation" (2009) *Erkenntnis* 71 (3): 323-344.

[17] This pair of cases is presented and explored extensively in Bernstein, *Causal Proportions and Moral Responsibility* but there they are used to argue that the lack of independent criterion for deploying different causal concepts is a barrier to a more general theory of the relationship between causation and moral responsibility.

necessary to bring about an outcome. What kind of moral difference between the cases stems from the causal difference? That is, how does each assassin's portion of moral responsibility in Overdetermining Assassins differ from that of each assassin's portion of moral responsibility in Unwitting Teamwork Assassins?

Answering this question requires answering a prior question: are the assassins in Overdetermining Assassins *more* or *less* causally responsible than the assassins in Unwitting Teamwork Assassins? As I will now show, which answer is correct crucially depends on what type of causal concept one employs.

One line of thought holds that each assassin in Overdetermining Assassins is *more* causally responsible than each assassin in Unwitting Teamwork Assassins. For each overdetermining assassin is individually responsible for bringing about the entire outcome: had one assassin not shot, the other assassin would have been entirely sufficient to bring about Victim's death. But this suggestion is specifically based on the application of a "productive" or "energy transfer" causal concept in comparing these cases. According to the energy transfer theory of causation, *c* is a cause of *e* if *c* transfers energy to *e*. The assassins who each transfer a portion of energy sufficient to bring about Victim's death are more causally responsible than the assassins who each transfer half the portion of energy required to bring about Victim's death.

But the quantitative comparison of the cases differs when a different causal concept is utilized. Consider the "dependent" causal concept, according to which *c* is a cause of *e* if, roughly, had *c* not occurred, *e* would not have occurred. Invoking a dependent causal concept changes the quantitative causal contributions in each case. For each assassin in Unwitting Teamwork Assassin is *more* important to the occurrence of Victim's death given that if one of them had failed to shoot, Victim would not have died. Each assassin in Overdetermining Assassins, in contrast, is individually inessential to the outcome's occurrence.

Cases that call for evaluation of quantitatively different causal contributions are afflicted with semantic indeterminacy involving which causal concept is employed. Different causal concepts yield different quantitative results. Why semantic indeterminacy? Because the causal quantities in question are perfectly determinate when cashed out in terms of each causal concept. It would be possible, in theory, to measure

exactly how much energy each bullet transfers to Victim. And it is determinately true or false that if had one assassin not fired, Victim would not have died. Unlike the cases in the first section, the world is perfectly determinate with respect to quantities of causal contribution in these cases. It is our thought and language that are imprecise. If human thought and language were more nuanced, then causal claims would specify whether productive or dependent causation were the types in play. For example, "Billy's gunshot causally contributed to Victim's death" would have several further precisifications involving productive or dependent types of causation. But as it stands, there are two completely precise causal quantities, and our language shifts between them.

Semantic indeterminacy in causal judgments has broad implications in moral evaluation and the causal facts relevant for legal decisions. For if the relationship between causation and moral responsibility is proportionate, then it is indeterminate how to comparatively evaluate the assassins' actions given conflicting causal data. Legal theory, too, is influenced by semantic indeterminacy of causal claims. Though the counterfactual account of causation is the gold standard in legal theorizing, its application is uneven, and legal decisions often switch between counterfactual accounts of causation and productive theories of causation on an *ad hoc* basis. This trouble with causation was recently on display in the 2014 Supreme Court case *United States vs. Burrage*, in which a drug dealer sold a portion of drugs sufficient to kill a victim. But an autopsy performed on the victim's body showed the presence of another portion of drugs also sufficient to kill him. Given that the drug dealer's causal contribution to the death did not pass the counterfactual test for causation, his lawyers appealed the case to the Supreme Court (which ultimately acquitted him), with the competing side arguing that the counterfactual test was inadequate for judging that the drug dealer was a key causal contributor to the outcome.

4. Conclusion

Causation is often thought to be an example of a perfectly precise metaphysical relation, immune from the vagueness and indeterminacy that afflict other metaphysical tools. I have suggested that there are at least two types of indeterminacy in the causal relation. Metaphysical indeterminacy is prevalent in certain cases involving causation by

omission, in which there are often multiple causal possibilities that can equally lay claim to being a cause or an effect. The other type of indeterminacy, quantitative indeterminacy, stems from imprecision in the way our causal concept is deployed in judgments of differing quantitative causal contributions to outcomes. Both sorts of indeterminacy impact the type of moral responsibility that stems from causal responsibility; in particular, they effect the precision and exactness with which moral blameworthiness can be attributed.[18]

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