With Great Power Comes Great Responsibility

On causation and responsibility in Spider-Man, and possibly Moore

Stephen Mumford
University of Nottingham and Norwegian University of Life Sciences

Rani Lill Anjum
Norwegian University of Life Sciences

0. Preface

Omissions are sometimes linked to responsibility. A harm can counterfactually depend on an omission to prevent it. If someone had the ability to prevent a harm but didn't, this could suffice to ground their responsibility for the harm (Moore 2009: 304).

Michael S. Moore's claim is illustrated by the tragic case of Peter Parker, shortly after he became Spider-Man. Sick of being pushed around as a weakling kid, Peter became drunk on the power he acquired from the freak bite of a radioactive spider. When a police officer called to Spider-Man to stop an escaping burglar, which he could have done easily, he failed to act. He was through taking orders. The omission was followed by a crime. That very same burglar later robbed Peter's own house and when challenged he shot dead Peter's Uncle Ben. Later, Spider-Man tracked down the killer and, when seeing his face close up, the possibility of prevention dawned on him. He could have stopped this crook and had he done so Uncle Ben would still be alive. Stan Lee's tale of power finished with a Shakespearean twist. Young Peter realised the truth of the WGPCGR-thesis: With Great Power Comes Great Responsibility.

We too will endorse the WGPCGR-thesis. There is a close connection between our notions of moral and legal responsibility and the powers we have as causal agents. This will be particularly important when it comes to the case of omissions: where we had the power to act but failed to do so. We hope to show the connections between the notions of power, cause, act, omission and responsibility but also some of the nuances. We will do so with particular reference to Moore's account in *Causation and Responsibility* (Moore 2009).

1. Power and responsibility

The burglar exercised a power in killing Uncle Ben and thus certainly has responsibility for his death. He caused the death. But why should Spider-Man take any of the blame too? He didn't cause anything. He failed to act. His was an omission. And it seems an omission has no causal powers. That is all well and good but that doesn't mean that Peter Parker was wrong to blame himself. An

omission can sometimes have just as much moral significance as an act as Moore says and we will back that claim in this paper.

The WGPCGR-thesis has an intuitive attraction through its connection of the notions of power and responsibility. In the first place, one can only be held responsible for something not happening if one had the power to bring it about. No human can have a responsibility to jump to the moon or breathe (unaided) underwater. Without the power, the responsibility makes no sense. In the second place, the WGPCGR-thesis also draws a connection between degree of power and degree of responsibility. When a man is drowning in a lake, the stronger swimmer in attendance has more responsibility to jump in and save him than does a weaker swimmer. If a woman is knocked down by a car, a trained medical doctor who is present has more responsibility to assess and care for her than does an onlooker with mere first aid training or no training at all.

Blame can then attach to persons who fail to act when they have the power and responsibility to do so. No one was to blame for the earthquake off the coast of Japan in 2011 because no one had the power to stop it. But someone could be to blame for an assault or a theft or even an accident if negligence played a role. Blame comes from neglect of responsibilities. It doesn't always come from the failure to exercise a power, however, because some of them we have no responsibility to exercise. Responsibility is a normative matter whereas power need not be. We have the power to talk all day non-stop but we have no responsibility to do so. We also have the power to strangle a passer-by. We have no responsibility to do so and indeed in almost all conceivable cases have a responsibility not to do so. It is up to moral and legal theory to tell us which of our powers we have a responsibility to exercise and on what occasions. What it cannot fairly tell us, however, is that we have a responsibility to do something that we simply cannot.

An apparent exception is not really one. You may not know first aid and thus have no power to save a collapsed man. But perhaps you had a moral responsibility to have learnt first-aid in the first place, just in case of needing it. Hence, it might be argued, you have a responsibility to save the man even though you don't have the power to do so because, for instance, you don't know the recovery position. But this apparent responsibility without power arises only by conflating first and second-order powers. If you don't have the power to administer first aid you have no responsibility to do so as you could do harm if you make a clumsy attempt (you may nevertheless have a responsibility to offer general assistance and reassurance). But you had the power to learn first aid and it is conceivable that you could have had a responsibility to do so. You might then be blamed if you don't. One may, therefore, have a second-order responsibility to do something (to acquire a power to act) while at the same time lacking the corresponding first-order responsibility (to exercise the acquired act). This is no real exception to the WGPCGR-thesis then.

2. Powers and causal dispositionalism

We aim to explore further the connections between causation and responsibility and we do so using the framework of causal dispositionalism, a theory of the metaphysics of causation developed in

Mumford and Anjum 2011. We will explain the basics of the theory in order to show its application to the issue of responsibility.

Causal dispositionalism is a theory of causation based on a metaphysics of real causal powers or dispositions. Such a philosophy of nature is associated with Aristotle and Aquinas and is non-Humean. It is not a reductive analysis as the notions of cause and power are too closely connected. It accounts for causes in terms of the exercise of powers, where effects are typically produced by many powers acting together. When we have multiple powers producing an effect it is called polygeny. We model polygenic powers acting together using vector diagrams (whereas the conventions of standard neuron diagrams – the other main way of representing causal situations – allow only one immediately prior cause for each effect). Moore also allows that many factors can work together to produce an effect. He calls them concurrent causes (Moore 2009: 486). Figure 1 shows us an example of multiple concurrent powers at work.

We model powers as vectors because powers have a direction: there is something towards which they dispose. Vectors also have a direction, which we show in the figure by plotting them on a quality space that ranges from the property F to the property G. These could indicate the properties of being hot and being cold, for instance, and the powers that emanate from a central vertical line – the current temperature – indicate powers towards raising the temperature, F, or lowering the temperature, G. Powers can also have a magnitude or intensity, which the vector indicates by its length (the longer, the stronger). Again this is important but frequently overlooked. We should allow that causation is scalar (Moore 2009: 105). Both causes and effects can occur to some degree. What produces an effect is all the concurrent powers working together. They compose, indicated by resultant vector *R*, into one big power: how the overall situation disposes. Powers thus become the truthmakers of all the causal truths. All effects are produced by powers exercising themselves in various combinations.

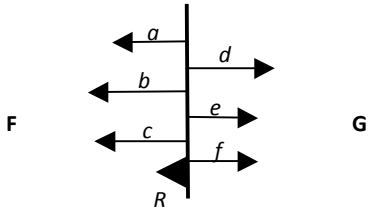

Figure 1: Multiple powers at work

An upshot of causal dispositionalism is that we should separate the notion of causal production from that of causal necessitation. Powers produce their effects without guaranteeing them. Instead we have tendencies towards certain outcomes. A cause is thus something that tends or disposes towards its effect. This is something more in the world than Humean regularity: we have real powers that bring with them a genuine modal connection between causes and effects. But the modal connection is one of tendency, short of fully-blown necessity, as Aquinas saw (see Geach 1961: 102). The polygeny depicted in figure 1 shows us that if there had been a further power, *h*, disposing towards G, powers *a-f* might not have brought about a movement towards F. We call this additive

interference, which shows that causes do not necessitate their effects, even on the occasions they succeed in producing them.

3. Causation and responsibility

The law often seeks to apportion blame or responsibility according to the degree of a cause. This seems to be one area in which the metaphysics of causation has much to learn from the philosophy of law. The importance of the scalarity in causation is often neglected or indeed ignored completely. Lewis's influential counterfactual dependence account (Lewis 1973), for example, suggests an account in which causes and effects are all or nothing. The accompanying neuron diagrams are able to show only that a cause or effect happened or it did not: not that they might happen to some degree.

Degrees of cause and responsibility are important matters in law. Because of the polygenic aspect of causation, in which an effect is typically produced by many causes working together, one might need to single out what was the main cause of the harm before judging responsibility. The main cause is the biggest contributor for the harm: what in figure 2 would be represented as the longest vector. In apportioning legal or moral responsibility, therefore, we might judge whether a particular factor was only a small part of the total cause, or instead the main contributor.

But in judging responsibility, there are further factors to be considered. A small factor can nevertheless by highly significant. Someone who has developed lung emphysema might, for instance, blame the factory that they worked in for over 30 years, exposing the employees for damaging dust particles. But if in court it emerges that the worker was also a heavy smoker and genetically pre-disposed for the disease, the defence could argue that the smoking was the main cause and not the dust particles from the factory. Does this mean that the factory owner is without responsibility? No. It might still be that the exposure to the dust particles from the factory was what tipped the situation over the threshold of the lung emphysema. This might have been just a small contributor, but one that made the outcome radically different (represented by power *f* in figure 2). The factory owner could then be responsible and held liable for partial damages.

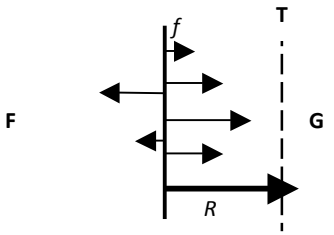

Figure 2: A cause, f, that is not the main cause

A tiny contributor can thus make a large difference for the outcome if we have a so-called tipping case (figure 3). Where we have a tipping case situation the operating powers are very close to a

threshold at which something happens: they are all lined up and ready to go such that just a very small addition would be enough to reach that threshold. Hence, a very small extra input could lead to a huge difference in outcome. If a rock is balanced on a cliff edge, for instance, just a push from a passing ant might be enough to send it hurtling down a ravine (see Moore 469).

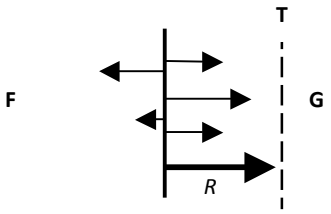

Figure 3: The set-up for a tipping case

It is conceivable that major legal and moral responsibility could be allotted to a small causal factor if it is indeed the one that tips a causal situation over a threshold. Instead of a rock and an ant at the cliff edge, we could easily manage a man standing there, struggling against the wind to keep his balance. If a bystander then comes and gives them a push – even a very slight push – they might have major responsibility for a subsequent death.

So much for causation. But we also know that responsibility comes from omissions. How does that work? In the next section, we argue that an omission is an occasion for an effect, not its cause.

4. Omissions: responsibility without causation

Omissions prima facie create a problem for causal dispositionalism. It looks like they produce outcomes and yet they are not actions: they are lacks of action, where a lack of something is nothing at all. We take it that agency involves people causing effects through exercise of their powers. If that is anywhere near right, then omissions are thus the agency version of causation by absence. Some philosophers accept that absences can be causes (Shaffer 2004), citing commonplace examples such as lack of water killing a plant, a horse shoe falling off for want of a nail and the guillotine causing someone to die through lack of a head. Causal dispositionalism, however, tells us that effects are produced by powers exercising themselves. Absences, lacks and omissions are not real things in any way, however. They are precisely something not being there. If we have nothing, therefore, we cannot have causal powers. We thus want to agree with Moore when he says that omissions cannot be causes (Moore 2009: 54). Nothing comes from nothing: we reject causation *ex nihilo*. But then we owe a metaphysical account of how causation by absence appears to happen. What is really going on in such cases?

Fortunately, the vector model allows us to explain causation by absence entirely in terms of what there is: the powers of things that really are, rather than any alleged powers of nothingnesses. The account will also show why we can attribute responsibility without causation, in the cases of omissions.

In abstract terms, what is suggested is that in cases of putative causation by absence removal of a power is the occasion on which powers disposing in the opposite direction win out. In figure 4, we have two powers disposing towards F and two towards G. If they are jointly of equal strength, we will have an equilibrium situation in which nothing happens. But if we now remove one of the powers disposing towards F (represented by vector *a*), then the powers disposition towards G will be the stronger. Overall, the situation will then dispose clearly towards G (indicated by the broken resultant vector *R*). The crucial insight, from a metaphysical point of view, is that it is the remaining powers towards G that do the causal work of producing G. The absent power *a* is no longer there and does nothing. We try to indicate this by saying that the removal of *a* was the *occasion* for the causing of G without being one of the causes of G. When *a* was removed, the remaining powers towards G were able to do their work: but it was the remaining powers towards G that did all the causing, not the absent *a*.

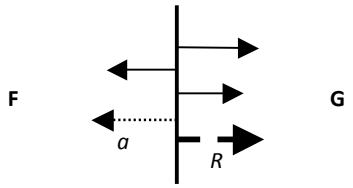

Figure 4: 'Causation by absence'

A concrete example will illustrate the abstract account. Consider a game of tug of war between philosophers and theologians. The sides are equally matched and the rope goes nowhere. One weak-willed philosopher gives up and leaves the contest, whereupon the theologians achieve a quick victory. Did the absent philosopher cause the theologians' win when he left the contest? No. All the causing of that result was due to the forces exerted on the rope by the theologians pulling. But the philosopher giving up was the occasion for their victory insofar as he had previously been holding them back. The philosopher's teammates may well apportion responsibility to their weak-willed colleague. Would they have avoided defeat had they remained at full strength? If so, they would be right to think of their team-mate giving up as the occasion for the theologians win, even if the giving up was not the cause.

Peter Parker was obviously mindful of all this. He didn't cause his Uncle's death, even though he has mistakenly thought so since. The burglar's bullet did the causing. But he rightly has understood that his omission occasioned the killing to the extent that it would probably not have happened if he had acted. What he had in mind was thus a *sine qua non* rather than a real cause: a distinction we will examine further.

5. Overdetermination and prevention: responsibility without counterfactual dependence

An attractive explanation of this would be in terms of counterfactuals. Had the philosopher remained, the theologians would not have won. In that case, blame is apportioned. This story, which Moore (2009: 304) endorses, is basically right (see also Dowe 2001). But it needs to be nuanced in various ways because the connection between causes, omissions and counterfactual dependences is not a simple matter, certainly if one accepts the insights of causal dispositionalism.

The counterfactual truths, such as they are, can indeed be made true by the worldly powers rather than, for instance, the plurality of worlds (Lewis, 1986). The counterfactual situation really is contrary-to-fact, though: contrary to all facts. There are no facts – not even in other worlds – that they are about. Mere possibilities are fictions and their ontological status is thus akin to truth in fiction. But a power gives us more than a mere possibility of its manifestation. As stated above, there is a more than Humean modal connection involved in causation, according to causal dispositionlism, such that if a cause occurs, its effect will also *tend* to occur. As we stated, however, this is not a matter of necessitation of the effect.

The dispositionalist view thus has implications for how we understand any associated counterfactuals. Two counterfactuals interest us when it comes to causation:

i. *C* and *E* occur and *C* caused *E*. *C* had the power whose manifestation was *E*, such that *had there not been C, there would not have been E*.

ii. Neither *C* nor *E* occur. But *had there been C, there would also have been E*, because *C* was the power whose manifestation was *E*.

According to causal dispositionalism, however, we have reasons to accept neither i nor ii. In the case of ii, a thoroughly dispositionalist account cannot say that if C occurs, E will occur: only that it will be disposed to occur. In the case of additive interference, something is added that can prevent E even though C. Hence, even if Spider-Man had exercised his powers and tried to stop the Burglar, he cannot know for sure that he would have succeeded. Causal prediction is fallible and for a good reason. Even Spider-Man's action could have been prevented, for instance if the incredible Hulk had restrained him.

We reject i because of the possibility of overdetermination. Many causes do make a difference to the world. Had they not occurred, something else might not have occurred. But not all causes make a difference. Some effects are overdetermined (Moore 2009: 411-25). They have more than one cause or set of causes each of which alone could have produced the effect. Two assassins, for instance, working independently each put a deadly dose of poison in their victim's drink. The victim consumes it and dies. If we thought of causation and responsibility in terms of counterfactual dependence, each assassin could claim innocence. Their poison made no difference given that the other dose was lethal. Neither assassin's action was a *sine qua non* for the victim's death. There is no shortage of other examples. For example, two brain neurons N_1 and N_2 fire simultaneously and each

would alone have been enough for the passing of the threshold for N_3 to then fire (Moore 2009: 416, example from Lewis). The firing of N_3 is overdetermined.

Defenders of the counterfactual dependence theory of causation have gone to great lengths to explain away the possibility of overdetermination. It threatens the core difference-making intuition of the theory. And yet there seems nothing unintuitive about overdetermination itself. In that case, it looks as though the amendments to the theory that have been designed to avoid the problem are *ad hoc* with no greater motivation than to salvage the theory. In contrast, the causal dispositionalist theory can accept the intuitive possibility of overdetermination without any further amendment or cost to the theory. We simply accept that two powers *a* and *b*, or sets of powers, each could get the situation over a particular threshold for an effect to occur (figure 5).

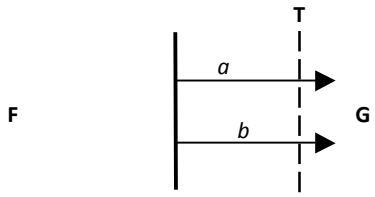

Figure 5: Causal Overdetermination

What we need to do, therefore, is recast both our counterfactuals in dispositional terms, which we can do:

i*. *C* and *E* occur and *C* caused *E*. *C* had the power whose manifestation was *E* such that *had there not been C, it would not have disposed towards E (though something else might have)*.

ii*. Neither *C* nor *E* occurs. But *had there been C, it would have disposed towards E*, because *C* was the power whose manifestation was *E*.

Despite these amendments, i* and ii* can still serve as a basis for responsibility. An agent's actions do not necessitate an outcome and nor can we be sure that their action made a difference, if the effect was overdetermined. But we can still hold people responsible for actions that dispose towards an outcome. Someone who sells a dangerous drug, for instance, can still be responsible for a death it subsequently produces even if it did not guarantee the death. Producing it is enough. Similarly, if would be a weak defence to argue that only half of those who took the drug died and death was not therefore within the control of the drug seller. Had Spider-Man tackled the burglar, it would have disposed strongly towards them being apprehended and committing no murder that evening. The fact that the Hulk had the power to restrain Spider-Man does not affect his responsibility through omission. And it would further be a bad defence that one's own poison made no difference to the victim because they were ingesting the other assassin's lethal dose. More to the point is that the first assassin's dose was lethal: it had the power to kill the victim whether or not anyone else had also introduced a lethal dose.

6. Transitivity and responsibility

Despite what we take to be the inadequacies of a counterfactual dependence theory of causation, the counterfactual or difference making notion of cause still holds some power (Moore 2009: 371). But we will argue that this *sine qua non* notion is clearly distinguishable from genuine causation. If it really were causation, there would simply be too many causes: Many things will be a *sine qua non* for an effect without being a cause of it. In this and the next section we will try to resolve the issues of causal chains, transitivity and necessary conditions and it should then be clear how a cause differs from a *sine qua non*.

Causal responsibility often works via intermediaries. This can result in causal responsibility that stretches back many years. One may be responsible for someone's death even if one caused it via a series of intermediate steps. Perhaps one 'only' pushes a rock, but if the rock is on the edge of a cliff under which one's enemy is stood then one may be guilty of murder, depending on the circumstances. And if that works with just one intermediate cause, there seems no reason why one couldn't murder someone via many steps, as with a Heath Robinson or Rube Goldberg machine for instance (an elaborate mechanical contraption with many operating stages).

As soon as we allow causation to transfer through intermediate causes we get into the issue of the transitivity of causation. A common metaphor that is used is the causal chain, which conveys the idea that causation consists in a sequence of events or links with strong connections between each of those links. A causal dispositionalist has reasons to be suspicious of that metaphor, however. In the first place, the idea of links in the chain suggests something strong and unbreakable but we have already said that causes do not necessitate their effects but tend towards them only. The links of the chain are far from unbreakable. But the metaphor also ignores what we take to be an essential feature of causation, namely its polygeny. Neuron diagrams, it will be recalled, show us only one cause for every effect. Lewisians do not think that this is the case for causation generally: they allow that causes can be complex. But their project is to explain what it is to be *a* cause of an event (among others) and there cannot be more than one, in the circumstances, that was sufficient for the effect; that is, upon which the effect counterfactually depends. As we saw above, a counterfactual dependence theory cannot allow effects to be overdetermined. The image of a chain is thus particularly suited to the conventions of neuron diagrams, which in turn is particularly suited to the two-event-plus-relation model of Humean and Lewisian theories of causation (see Martin 2008: 46 and Mumford and Anjum 2011: ch. 2).

Moore offers us a better metaphor: one that shows the polygeny of effects. We should think instead of a backwards causal cone (Moore 2009: 276). A particular effect has three causes, say, but then each of those three causes has three causes, and so on. We can see that the further back in time one goes, the more causal ancestors an effect will have. We endorse the idea of the causal cone metaphor instead of the causal chain. What bearing does this have on responsibility?

Moore allows that:

> Causation is then pictured as an inverted cone. The further up the cone from *e* is some *c*, the less causal contribution it makes to *e* (because it is joined by so many other causes). Thus later is usually greater, when it comes to degrees of causation. (Moore 2009: 72)

This gives Moore, he thinks, a reason to put limitations on transitivity of causation. If c_1 cause c_2, and c_2 causes c_3, and so on to c_n, we cannot always say that c_1 caused c_n. The reason is that causation weakens and then peters out through time (Moore 2009: 121-3, 224 and 397-9) and thus need not always transfer from an earlier causal transaction to a later one in the same causal cone. An earlier cause will be one among more than a later cause so it has less of a responsibility for the final effect. And we can go so far back in the causal history that we reach *de minimis* causes, which are among so many that they should not properly be thought of as causes at all. Causation and thus responsibility are not always transitive, therefore. Some causes will have petered out with respect to some later effect. We can think of causes as petering out over time insofar as time is a good indicator or proxy for how many causal transactions have occurred (Moore 2009: 122).

We accept that transitivity can fail but not for the reasons Moore gives. He is right that we do not generally consider, for instance, a distant event such as the Big Bang to have been the cause of someone speeding or being involved in a car accident even if we accept that it is part of its backwards causal cone (arguably a part of everything's backwards causal cone). But there are two problems with Moore's account. First, the limit at which a cause moves from just being one small cause among many others to not being a cause at all – one that has petered out – would seem to be arbitrary. It would not be something dictated by nature but only by our decisions. Do we say *c* can be a cause of *e* if it is one among a thousand causes of *e* but not if it is one among a thousand-and-one causes (or 'no-longer causes') of *e*? Do we say that the causes of *e* must have occurred within its previous ten years but no longer? The world and its causal cones seem to involve a smooth continuity of degrees of influence rather than any sharp and obvious cut off between being a cause and not being a cause. Second, Moore's diagnosis would seem to imply that factors in *e*'s backwards causal cone of equal temporal distance from *e* are either both causes of *e* or both not causes of *e*. But it seems a possibility that we think of one thing c_a as a cause of *e* even though c_b, which occurred at the same time as c_a and is also in *e*'s causal cone, is not a cause of *e*. A cause of a bridge collapsing might be the use of a batch of weak rivets 50 years previously. At the same time and elsewhere on the bridge some adequate and strong rivets could have been used. The latter seems to be within the causal cone of the bridge's collapse but would not be thought of as one of its causes.

This last example gives a clue as to what we think the right answer is for why transitivity can fail and the answer is within the spirit of dispositionalism. Clearly, some factors in the causal history of an event dispose towards the effect in question and others don't, even though they are indeed parts of its causal cone. Weak rivets dispose towards the bridge's collapse (even if it takes them 50 years to manifest their disposition) while strong rivets don't. And the Big Bang, while it is a part of everybody's backwards causal cone, does not dispose towards anybody speeding (or slowing down). It is not merely that the causal effects of the Big Bang have faded away over time (Moore 2009: 121 uses the metaphor of emanating ripples in a lake caused by the dropping of a stone and fading away to nothingness over the lake's surface). Indeed, there are still things happening now for which the Big Bang can be identified as the major cause: the ongoing expansion of the universe, for instance.

Geological causes can also stretch over a lot of time. Temporal distance does not automatically exclude causation, therefore. Rather, causes are selective about what it is, at a certain distance, they cause and what they don't. Dispositionalism can explain the difference. Causes dispose towards some manifestations rather than others, even if it takes them a long time to manifest those dispositions.

We have an alternative to Moore's account of causes petering out but we have not yet ruled on the issue of failures of transitivity generally. Are we saying that causation is transitive or not? Our answer is that causation can indeed pass through intermediaries but it need not always do so. In that case, causation should be regarded as non-transitive. If causation were transitive, then if *a* causes *b* and *b* causes *c*, then *a* causes *c*. In explaining why some parts of an event's backwards causal cone were not properly causes, we said that such parts were not counted as causes because they did not dispose towards the event in question. The Big Bang disposed towards the expanding of the universe but not towards someone speeding. And we can now see the good sense in accepting this as a general principle. Many factors can be involved in the timing, manner or degree of an effect without being causes of it. Causal dispositionalism explains how. If a doctor attempts to save a patient, they may delay their death but be unable to prevent it. The time and manner of death is significantly affected by that intervention. But did the doctor cause the death? No. The patient died despite the doctor's efforts not because of it. We should not count as causes of an effect those powers that were disposing away from it (the exception to this being where equally balanced opposing powers produce equilibrium). Adoption of this principle explains to us why there can be failures of transitivity in causal sequences. We can have a case where *a* disposes towards *b* and succeeds in producing it, *b* then disposes towards *c* and succeeds in producing it, but where *a* had no disposition towards *c*. To take a simple example, an arsonist sets fire to a building. The fire starts the sprinkler system which then puts out the fire. Did the arsonist put out the fire? Clearly not: they started it. Starting fires does not in general dispose towards them being extinguished. In our example, of course, the fire occurs in a particular context in which a building is sprinkler protected. It is only through the further intervention of this system that events lead to the fire's extinguishing, which is a matter extrinsic to the arsonist's actions.

It might assist if we represent the powers at work in our case in two successive vector diagrams. Figure 6 shows the cases where *a* at t_1 disposes towards F: the arsonist's actions dispose towards fire, for example. But the fire then reaches a certain threshold that triggers the sprinklers. At t_2 the sprinklers extinguish the fire. The sprinklers dispose in the opposite direction to the arsonist's actions. The result is G instead of that towards which the act of arson disposed, F.

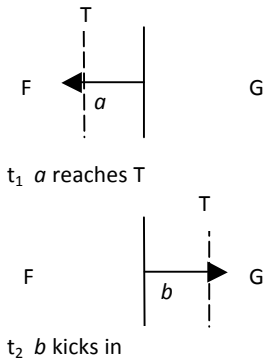

Figure 6: Transitivity failure

It should be obvious that the dispositional account does not suffer the same defects as the petering-out account of why transitivity does not hold. We do not have to specify arbitrary points of temporal or causal distance at which causation fades. And nor do we have to say that distinct factors in a causal cone that are at equal temporal or causal distance from an effect are either both causes of that effect or both not causes.

7. *Sine quibus non*

Transitivity clearly bears on the issue of responsibility. If transitivity has failed it shows that someone, event or thing can be a part of an effect's backwards causal cone without being a cause of it. Just as an arsonist cannot claim credit for putting out the fire, nor should a doctor necessarily take blame if an intervention that should produce one outcome is part of the causal history of an opposite outcome. Both these instances would not have had those effects without the further intervention of some further factor and we assume that the action was taken in ignorance of that factor. The arsonist did not want a sprinkler system to intervene and nor should our doctor have known that a complicating factor would produce the unintended consequence.

What should we say of these parts of a causal cone that are nevertheless not causes of the effect? A distinction is sometimes drawn between causes and background conditions. Striking the match caused it to light. The presence of oxygen was just a background condition. We cannot make much sense of that as it is traditionally outlined. Oxygen is just as much a cause of a match lighting as is its striking and the distinction seems a purely epistemic or pragmatic one rather than a metaphysical one. But we do not have a more metaphysical basis for drawing a distinction of this ilk. Instead, while we may couch it simply in terms of causes versus conditions the conditions that we have in mind are *sine qua non* conditions. A *sine qua non* is a *without-which-not* and this seems a simpler way of referring to what we have so far described as being within the causal cone of *e* without being one of the causes of *e*. Again the Big Bang example provides a good illustration. Without the occurrence of the Big Bang, someone could not have been speeding, nor slowing down, but that does not mean it is a cause of such an event. The Lewisian counterfactual dependence theory

conflates causes with *sine quibus non* and thus has to rule that someone speeding is caused by the Big Bang. Similarly, someone's death counterfactually depends on their birth and someone's sneezing counterfactually depends on the conception of one of their grandparents. But none of these are cases of causation. The earlier event does not dispose towards the latter. Birth does not dispose towards death, for instance. Certainly it is a precondition for it – a *sine qua non* – but that is not the same. Some mortal danger is what causes death, or some further biological process, but not the birth itself.

This brings us back to the issue of causes, omissions and responsibility. Although a *sine qua non* is not a cause, it may still be a basis for responsibility. One might do something that did not cause an accident but without which the accident would not have happened, or would not have been disposed to happen. The case of omission is clearly of this kind. We had principled reasons for saying omissions could not be causes and yet Peter Parker feels, probably correctly, that his uncle's death would not have occurred without his omission. We need not limit our cases to omissions. There could be some positive factors that were necessary conditions for an effect without being a cause of it. Nevertheless, we can have responsibility for a *sine qua non* if it is considered negligence. If a man leaves a dangerous and unmarked chemical where others have access, for instance – such as keeping turpentine in a reused water bottle – he has not caused someone to drink it but his action might have been a *sine qua non* for them doing so. The judgement of negligence would be on the basis that he had needlessly and carelessly created a condition for harm being done, without any precaution being taken against the possibility of someone using it in a harmful way.

8. Dispositionality: a modality for moral agency

We have already mentioned that dispositions bring with them a modality that is short of necessity but still more than mere contingency and we think it reducible to neither. Dispositions or tendencies are more than mere possibilities because they are directed towards a particular outcome. Intentionality has such a directedness. Amongst all the things that are possible to do one intends to do only some of them. The dispositional modality is a selection function that picks out some of the many possible outcomes (Mumford and Anjum 2011: 189-90). But an intention to do *x* does not guarantee *x*. One might intend to swim 600 meters, for instance, but without succeeding in doing so.

In figure 1 we saw that the effect is a result of many powers working together, sometimes with each other, and sometimes against each other. For any tendency towards F, there could be a counteracting tendency, disposing away from F. This is why a cause is never sufficient for its effect. There could be something added that disposed away from and interfered with the effect. This is an essential feature of powers and also of causation. But it is also an essential feature of responsibility. In order to be responsible for one's acts, one must be able to produce the act. But perhaps equally important is it that one is able to not produce the act, or even to counteract it. This is what we mean when we say that an act needs to be voluntarily for us to be held responsible for it. If an act is forced, involuntary, or we weren't able to control it, we could not be held responsible for it.

Someone who causes a harm but in a psychotic state was indeed able to produce the harm. The morally and legally relevant question is whether they were also able to prevent the harm.

What we cannot avoid is beyond our moral blame or praise. If one had to act, or couldn't act, one is not responsible for the action. A result of this is that the same type of act can be both blameworthy or not depending on who produced it. A kick to the body can certainly cause harm, and is usually something we would consider blameworthy. But we only think it's blameworthy if it was intentional: something that one could choose not to do. A kick caused by a spasm is an involuntary act because it lacks at least one of the two elements of the dispositional modality. There was the power to produce the effect, but not the power to prevent it. The might not even have been a directedness, as there was no intention to kick. So although the intentional and accidental kicks have the same effects, there is a modal difference, hence also a moral difference.

The dispositional modality must also hold for omissions. If we had no power to act, then our omissions cannot be blameworthy. We must both be able to omit and to not omit: that is, the omission must be voluntarily for us to be held responsible for them.

The dispositional modality is thus an essential part of our notions of responsibility and moral agency. Without it our actions would either be necessary or purely contingent. In the first alternative, we would not be able to prevent our own actions, in the second they would be mere accidents.

9. Greater power, greater responsibility

We hope to have vindicated the general idea that responsibility is based on power, and not on causation as such. Specifically, an agent can be held responsible for an act only under certain modal conditions: if it was within their power to act but also not to act. They could be responsible causally for some effect when it was their action that produced it. They might be responsible for something non-causally when they had the power to prevent it and failed to do so. We have also seen that they could be non-causally responsible for something if their action was a *sine qua non* for something else.

This provides a foundation for supporting a part of the WGPCGR-thesis. But the thesis also says something more. It suggests that responsibility can come in degrees and the degree of responsibility is proportional to the degree of power. The former, we take it, is uncontroversial. Courts of law regularly apportion degrees of responsibility, for instance on the degree of causal contribution or effect. This concerns the exercise of power but also of unexercised power. The strongest swimmer present, we contend, has more responsibility to jump in the lake and save the drowning man than weaker swimmers. Having a power to do something does not always produce a responsibility to exercise it (an ability to dance, for instance) but on some occasions it does. It is relevant that our strong swimmer has a better chance or performing the rescue successfully. The weaker swimmers are more likely to fail or, indeed, get themselves into trouble in the water. The stronger swimmer is likely to make the rescue quicker, minimising a chance of injury to both parties. Similarly, Spider-

Man can prevent the burglar's escape almost effortlessly. If someone else attempts it they might fail or put their own safety at risk. These are factors that have some moral significance and there is hence no reason why they shouldn't also have legal significance. For the case of omissions, the more one is able to do, the more negligent one is in not doing it, if the moral features of the situation dictate that it should be done. If donations are required to relieve famine, for instance, the rich man has a power to relieve more famine than a poor man. If morality dictates that famine should be relieved, therefore, clearly there is more obligation on someone of rich means than on someone of poor. And if both the rich and poor man fail to act, in full knowledge of the moral features of the situation, then both are to blame but the richer man more.

What philosophical principle is behind this judgement, we are not sure. Moral and legal theory tells us what should and shouldn't be done and we have not entered into that discussion. Our claim is rather that if there is a responsibility to do something, then the more one is able to do it, the more responsibility one has to do it.

There are certain things this does not mean. An ability to do good doesn't always create a responsibility to do so. Some acts may be supererogatory: praiseworthy if performed without being blameworthy if not performed (Urmson 1958). If an athlete 'comes out' as gay it may be praiseworthy, because they may make a good role model for others, but we wouldn't necessarily blame a gay athlete who chose not to do so because we realise it could be at a personal cost. We also do not mean that it is better to exercise more of a power than less. One can kill a plant by overwatering it and, similarly, one has to find the appropriate amount of good to do, otherwise it could do harm. Giving someone too much assistance, for instance, might stifle their independence and thus their own capability. And giving away all our money to the poor might harm our own families. As Aristotle's ethics showed, being the good person also involves knowing how much of a certain virtue it is appropriate to exercise.

These cases aside, then, the principles we would want to support, in both the legal and moral case, are that:

a. Without the ability to do *x*, but also to prevent *x*, one cannot be responsible for doing *x*.
b. With the ability to do *x*, one can (but need not necessarily) have a responsibility to do *x*.
c. The more able one is to do *x*, if one should do *x*, then the greater the responsibility to do *x*.

Peter Parker is right to blame himself for the death of his uncle even though he didn't cause it. He had the power to prevent it. This is based on the connection we feel exists between our causal powers and responsibilities. We are also responsible for our omissions where we had the power to prevent some outcome. And the greater our power, the greater our responsibility.

We argued, however, that the connections between power, omission and responsibility need to be carefully set out. In speaking in terms of powers, we are deliberately making use of a causal dispositionalist thesis. But we hope to have justified this by showing the use to which it can be put in solving certain philosophical problems. We have shown what really occurs in the cases of omissions, which are a class of 'causation by absence'. We have shown that the counterfactual thinking that

bases our attributions of responsibility in the cases of omission has to be cast in dispositional terms. We then explained how causation and thus responsibility was not always transitive: not for the reasons Moore gives, of petering out, but on the basis that only those things that disposed towards an effect could be causes of it. We then used this as a principled basis on which to distinguish causes from (*sine qua non*) conditions. We hope that all of these claims are useful and that those not yet persuaded of a dispositional approach to causation will here see some of its attractions.

References

Dowe, P. (2001) 'A Counterfactual Theory of Prevention and "Causation" by Omission', *Australasian Journal of Philosophy*, 79: 216-26.

Geach. P. T. (1961) 'Aquinas', in G. E. M. Anscombe and P. T. Geach, *Three Philosophers*, Oxford: Blackwell, 1961: 65-125.

Lewis, D. (1973) 'Causation', in *Philosophical Papers*, ii, Oxford: Oxford University Press, 1986: 159-213.

(1986) *On the Plurality of Worlds*, Oxford: Oxford University Press.

Martin, C. B. (2008) *The Mind in Nature*, Oxford: Oxford University Press.

Moore, M. S. (2009) *Causation and Responsibility: An Essay in Law, Morals, and Metaphysics*, Oxford: Oxford University Press.

Mumford, S. and Anjum, R. L. (2011) *Getting Causes from Powers*, Oxford: Oxford University Press.

Schaffer, J. (2004) 'Causes Need Not be Physically Connected to Their Effects: the Case for Negative Causation', in C. Hitchcock (ed.), *Contemporary Debates in Philosophy of Science*, Oxford: Blackwell: 197-216.

Urmson, J. (1958) 'Saints and Heroes', in A. Meldon (ed.) *Essays in Moral Philosophy*, Seattle: University of Washington Press, pp. 198-215.