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PRODUCTION, NOT DEPENDENCE: THE METAPHYSICS OF CAUSATION AND ITS
ROLE IN EXPLANATION, RESPONSIBILITY, AND THE LAW

by

YUVAL ABRAMS

A dissertation submitted to the Graduate Faculty in Philosophy in partial fulfillment of the
requirements for the degree of Doctor of Philosophy, The City University of New York

2020

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Yuval Abrams

This manuscript has been read and accepted for the Graduate Faculty in
Philosophy in satisfaction of the dissertation requirement for the degree of
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ABSTRACT

Production, not Dependence: The Metaphysics of Causation and its Role in Explanation,
Responsibility, and the Law
by
Yuval Abrams

Advisor: David Papineau

Causation is production, not dependence. It is not merely a matter of how two facts or events covary, but about what underlies that covariation. Furthermore, causation is unified (not fragmented or plural) and is a *natural relation* (in the world). To cause is to make something happen, to generate. The causal nexus (the web of causal influence) consists entirely of productive positive causes. With these fixed, the (causal) dependence relations are determined.

Dependence belongs to the theory of explanation. *Causal dependence* is an explanatory notion: A causally explains B, in virtue of a causal relation between cause C and effect E. Confusing causation and explanation in this way underlies two related errors: the identification of omissions as causes and the embrace of causal pluralism.

A proper understanding of causation as production can better make sense, both of the metaphysics of causation itself, and of the special role that causation plays in explanation, responsibility, and rational planning. Each of these has a special causal species (causal explanation, causal responsibility, etc.), in which dependences play an important role, but one that is distinct from the role played by causation itself.

Morality and the law also attribute significance to causation, especially in terms of responsibility and liability. We are responsible for that which we cause. The law and common-sense

morality both see an important distinction between active and omissive harming. Liability traditionally attaches more easily for active causing of harm than it does for omissions and failures to prevent harm (where the law requires a special duty).

A production theory of causation and an understanding of how omissions are not properly causal makes better sense of the role of causation in liability. This requires refinement, since, the law does, selectively, apply liability to omissions and preventions. Crucially, however, and on a view that identifies omissions as causes, puzzlingly, liability for omissions requires a preexisting duty to perform. My account explains the law's differential treatment of proper causal liability and this latter omissive liability, and, in the process, offers a novel theory of non-causal liability in terms of corrective justice, that is dependence-driven, for cases involving omissions. I argue that cases of liability for omissions are cases in which the liability is not properly causal; rather, when a duty is owed by a defendant to a plaintiff, the defendant has a second-order duty in corrective justice to place the plaintiff in the position she would have been had defendant comported with his duty. As such, what the defendant owes is not the damage "caused" by the omission, but to make good on the obligation that the defendant owes to place the plaintiff in the position in which she has a right to be.

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CONTENTS

LIST OF FIGURES	XIII
INTRODUCTION	1
CHAPTER 1: PRODUCTION AND DEPENDENCE - THE CAUSATION EXPLANATION DISTINCTION AND THE REJECTION OF CAUSAL PLURALISM	3
1. Introduction	3
2. Production v. Dependence.....	6
3. Dependence Accounts of Causation.....	12
3.1 Regularity Theories	12
3.1.1 Mill	12
3.1.2 Mackie	13
3.1.3 Problems with Regularity Theories	14
3.1.3.1 Preemption.....	14
3.1.3.2 Symmetric Overdetermination	15
3.1.3.3 Common Causes	15
3.1.3.4 Asymmetry of Causation	15
3.2 Counterfactual Accounts	15
3.2.1 Lewis' Simple Counterfactual account.....	16
3.2.2 Troubles with transitivity.....	18
3.2.3 Problems with Late Preemption	19
3.2.3.1 Fragile events.....	20
3.2.3.2 Quasi-Dependence.....	20
3.2.4 Trumping	21
3.2.5 Causation as Influence.....	21
3.2.6 De Facto Dependence	23
4. Hall's Argument for Two Concepts of Causation	23
5. Other Arguments for Causal Pluralism	29
5.1 Cartwright Against Domain Generality.....	29
5.2 Other Dualisms	30
5.3 Normative, Contextual, and Pragmatic Pressures	31
5.3.1 Mill and practical interests	31
5.3.2 Normative considerations	32
6. Moving Beyond Causal Pluralism to a Unified Theory	33

6.1 The Rejection of Pluralism in Favor of Production.....	34
6.2 Dependence	38
CHAPTER 2: CAUSATION AS PRODUCTION.....	44
1. Introduction	44
2. Getting Clearer on Production.....	45
2.1 A First Stab.....	45
2.2 Methodology: Conceptual v. Empirical.....	51
2.3 Criteria of Identification	55
2.3.1 Hall’s three theses.....	56
2.3.1.1 Locality.....	57
2.3.1.2 Transitivity.....	57
2.3.1.3 Intrinsicness	58
2.3.2 Oomph	59
2.3.3 Lack of omissions.....	59
3. Specific Accounts of Production	60
3.1 Physical Connection Theories	61
3.1.1 Physicalist Theories.....	62
3.1.1.1 Transference Theories	62
3.1.1.2 Causal Process Theories	64
3.1.1.2.1 Salmon and Mark Transmission	65
3.1.1.2.2 Conserved Quantity Theory.....	67
3.1.2 Assessing Physicalist theories	68
3.1.2.1 Circularity.....	70
3.1.2.2 Pseudo-Processes.....	70
3.1.2.3 Asymmetry	70
3.1.2.4 Fundamental physics (processes are not fundamental)	71
3.1.2.5 Special sciences (processes are too low level)	72
3.1.3 Mechanisms	74
3.1.4 Assessing Mechanisms	75
3.1.5 Assessing Physical Connection theories generally.....	76
3.2 Primitivist and Other Non-Reductive Theories	77
3.3 Sufficiency or Determining Theories of Causation.....	79
3.3.1 Hall’s “Blueprint” strategy	80
3.3.2 Mackie Remixed a la Strevens	82

4. Two Major Objections to Production Accounts	85
4.1 Cheap Causation/Misconnections.....	85
4.1.1. The Chalk mark example.....	86
4.1.2. Response.....	86
4.1.2.1 Relevance is explanatory	87
4.1.2.2 Denying that misconnections are causal connections.....	88
4.1.2.3 Non-Physicalist accounts.....	90
4.2 Disconnections.....	90
4.2.1	90
4.2.2 Responses	93
4.2.2.1 Bite the bullet.....	93
4.2.2.2 Black-boxing	94
4.2.2.2.1 Disconnection as production	94
4.2.2.2.2 Mechanism as a whole.....	95
4.2.2.3. Double-Preventions are causally heterogeneous	95
5. Conclusion	97
CHAPTER 3: OMISSIONS, CAUSATION, AND RESPONSIBILITY	98
1. Introduction	98
1.1 Omissions Are Not Productive, Hence They're Not Causal	98
1.2 Structure of the Chapter.....	101
2. Why Omissions Can't Produce.....	104
2.1 Specific Productive Theories.....	104
2.2 General Doubts about the Efficacy of Omissions	105
2.2.1 Grounding asymmetry	105
2.2.2 Explanatory asymmetry.....	105
2.2.3 One-Many asymmetry	106
2.2.4 Lack of dependence/production severability for omissions	106
2.2.5 Profligacy.....	107
2.3 General Reasons to Mistrust Causation by Omission	107
3. What Exactly are Omissions?.....	108
4. Semantics of Omissions: Dowe and Quasi-Causation	111
4.1 Preventions	112
4.2 Omissions	113
5. The Queen of England Problem (Again).....	114
6. Schaffer's Contrastive Theory.....	116

7.	Understanding the Relation between Causation and Norms/Duties.....	119
8.	Normative Creep.....	121
9.	Payoff.....	124
10.	Conclusion.....	126
	CHAPTER 4: CAUSATION IN THE LAW	127
1.	Introduction.....	127
2.	The Role of Causation in the Law.....	128
3.	Controversies Over the Meaning of “Cause” and The Two Step Analysis.....	129
	3.1 The Orthodox Analysis.....	130
	3.2 Challenges to the Orthodox Analysis.....	132
	3.3 Proximate Causation: Some History.....	135
4.	The But-For Test.....	138
	4.1 How But-For Works.....	138
	4.2 Challenges to But-For.....	140
	4.2.1 Multiple Sufficient Causes: Preemption and Overdetermination.....	141
	4.2.2 Preemption.....	142
	4.2.3 Overdetermination.....	143
	4.2.4 Omissions.....	146
	4.2.5 Omissive Overdetermination.....	147
5.	Modifications to But-For.....	149
	5.1 The Refined-Description But-For Test.....	149
	5.2 The Substantial Factor Test.....	150
	5.3 The NESS Test.....	151
6.	Productive Causation: A Sensible Way Out.....	156
	6.1 The Appeal of a Productive Account.....	156
	6.2 Historical Background.....	157
	6.3 Modern Calls for Productive Causality.....	160
7.	General Prospects and Prognosis of a Productive Account.....	162
	7.1 Multiple Sufficient Causes on a Productive Account.....	162
	7.2 Omissions on a Productive Account.....	163
	7.2.1 Moore on omissions.....	164
	7.2.2 Schaffer on omissions.....	165
	7.2.3 The correct use of contrastive judgment to establish liability for omissions.....	168
8.	Conclusion.....	171
	CONCLUSION	173

REFERENCES	177
Statutes (and Quasi-Statutory Materials).....	182
Cases.....	183

FIGURES

Figure 1: Double Prevention.....	25
Figure 2: Schaffer's Explosion Device	91

INTRODUCTION

This is a thesis about causation. I argue for a particular understanding of what causation is and what it means to cause something. Causation, on my view, is *production*. It is not merely a matter of how two facts or events covary, but about what underlies that covariation. Furthermore, causation is unified (not fragmented or plural) and is a *natural relation* (in the world). Beyond arguing for a particular causal metaphysics, I develop this account to show that it better supports the role causation has in the domains of explanation and responsibility than does its rivals. I also argue that it makes better sense than its rivals of causation in the law.

The thesis proceeds in four chapters:

Chapter 1 sets the tone for the rest of the thesis. In it, I argue for a unified monistic notion of causation as production. Productive causation is a matter of generating or making (or producing). This sets my position in opposition to many of the predominant views on causation in the current literature: against the view that causation is a matter of dependence (counterfactual, probabilistic, or otherwise) of the effect on the cause; against the related view that causation encompasses several distinct notions (causal pluralism); and against views that run causation and causal explanation too closely together. These three errors are related. My diagnosis of the tendency to analyze causation in terms of dependence is that it conflates the desiderata of explanation and causation. Taking causation to be simply production offers a cleaner metaphysics of causation, but also helps make better sense of causation's role in explanation, prediction, and responsibility. The chapter concludes with a preliminary analysis of dependence, as well, suggesting how it figures into a general theory of explanation, beyond just causal explanation.

Chapter 2 develops the productive account in greater detail. I offer the basis of both an analysis of the concept of production as well as a general survey of the productive accounts available. These include Physical Connection theories, Primitivist theories, and Sufficiency

theories. Each is surveyed for its strength and weaknesses. I don't take a particular stand on which specific productive account is correct, or whether there is a unique productive account. Of particular importance is the emphasis on excluding causation by omission. This theme carries over from the first chapter and throughout the thesis. At the conclusion of the chapter, two major objections to productive theories of causation (misconnections and disconnections) are examined in detail.

Chapter 3 deals with omissions. Causation on my account cannot be by omission. I begin by arguing for this. Once accomplished, this leaves me with the task of showing what we are doing when we reason causally with omissions, for instance when we blame someone for neglect. I offer a dependence-based non-causal account of omissions that explains both why (and when) we can be blameworthy for omissions, but also why such blame is different from blame for actions. This account involves norms, which are admissible in omissions, precisely because they are not causal. In this context I also discuss and reject views that see causation as inherently normative.

Chapter 4 is on causation in the law. My claim is that the unified theory of causation being offered works, not only in capturing the metaphysics of causation and in explaining causation's role in explanation and responsibility, but that this same notion of causation is what the law is after in its analysis of (factual) causation, so central to both criminal law and torts. This requires a bit of history and case law, because my account differs from what the treatises usually declare causation to be. I show how a productive account of causation in the law better captures both what the law actually does, as well as what it should be doing. My analysis of omissions in chapter 3 plays a central role here, in particular in developing a novel theory of what liability for an omission consists in. Such liability is not for what the defendant caused, but for what he was under an obligation to have caused.

Chapter 1: Production and Dependence - The Causation Explanation Distinction and the Rejection of Causal Pluralism

1. Introduction

Causation is said to be many things. It is said to furnish necessary¹ or sufficient conditions² for an effect; to raise the effects' probabilities;³ to provide, undergird, or explain regularities in nature;⁴ to make a difference in the world or to account for a difference made;⁵ to provide physical connections between events or facts;⁶ to underlie effective strategies;⁷ to provide handles or devices for manipulating effects or outcomes.⁸ Causation is said to be a natural relation,⁹ something objective in the world. At the same time, causal judgments are often seen to be sensitive to contextual, pragmatic, and even normative considerations.¹⁰ Causation is seen as intimately tied to the laws of nature, to prediction, explanation, rational planning, and to moral and legal responsibility.

The philosophical discussion of causation is complex and voluminous. It is tempting to put forth one relation that does all of the above, or, shy of that, to find one fundamental relation that

¹ Hume *Enquiry* (1748), Section VII; Lewis (1973). Hume in fact has two conditions that are often taken to be at odds with one another. He writes in the *Enquiry*: "We may define a cause to be an object followed by another, and where all the objects, similar to the first, are followed by objects similar to the second. Or, in other words, where, if the first object had not been, the second never would have existed." (1748, Sec. VII, 4). Many take Hume to have mistakenly conflated these two definitions as one. The first definition is of causation as a sufficient condition (assuming a regularity view of sufficiency) and the second as a necessary condition, pointing to a counterfactual.

² Hume (1748) (again); John Stuart Mill *System of Logic* (1843), Book III, Ch. 5 Sect. 3; Mackie (1974); Davidson (1967).

³ Reichenbach (1956); Suppes (1970).

⁴ G. Strawson (2014, 87). These views could include sufficiency views of the regularist kind (as in Mill), but many views of causation take it to explain the regularities.

⁵ Difference making is commonly invoked by many theories, including counterfactual theories, sufficiency theories, manipulationist, and interventionist theories. Here is Lewis: "We think of a cause as something that makes a difference, and the difference it makes must be a difference from what would have happened without it." Lewis (1986b, 159).

⁶ Aronson (1971); Fair (1979); Castañeda (1984); Salmon (1994); Ehring (1997); Kistler (1998); Dowe, (2000). But also Mackie (1974).

⁷ Cartwright (1979).

⁸ Woodward (2003); Campbell & Cook (1979).

⁹ P. F. Strawson (1992, 109).

¹⁰ Menzies, (2009, 206); Hitchcock and Knobe (2009).

the rest reduce to.¹¹ The trouble is, that there seems to be no such relation: no one thing in the world that (always and only) supplies both necessary and sufficient conditions for events, that raises the effects' probability, etc. and that connects the metaphysical, epistemological, inferential, scientific, and moral questions above. Many have therefore understandably wondered whether there is any one thing (relation, or otherwise) that can be or do all these at once.

A common refrain, especially in recent years, has been to approach causation pluralistically: causation is taken to have more than one nature. Different relations in the world can, sometimes in different contexts, qualify as causal. In particular, causation is said to have two distinct natures: one of *production*, the other of *dependence*. The first involves a notion of bringing about, the second a notion of the difference made by the cause to the effect. These relations may not be mutually compatible. This approach is sometimes dubbed *causal pluralism*.¹²

Meanwhile, the link between causation and its role in explanation, prediction, intervention, and responsibility is still asserted, albeit somewhat complicatedly. In fact, the ability to account for causation's role in such domains is seen as an adequacy criterion by which to judge a theory of causation: if a theory posits causal links in cases in which, for example, we see no connection to explanation, we find fault with such a theory.¹³ Alternatively, if a theory fails to find causal that which in explanatory or moral contexts we plainly do, this is deemed a fault as well.

This chapter takes a first step at unravelling some of these difficulties. The solution I

¹¹ That causation is a relation is more or less taken for granted. Some, notably Lewis (2004), have disputed this. For what it's worth, I think that construing causation as a relation might not be the best entry point into the nature of causality, as it tends to focus on the value of the relata themselves rather than on that which connects them. To this end, Salmon's oft quoting of John Venn is apt: "Substitute for the time honoured 'chain of causation'...the phrase a 'rope of causation', and see what a very different aspect the question will wear", Salmon (1998, 223), citing Venn (1866, 320). For Salmon, causal processes and interactions are "more fundamental" than causal relations between events. See Dowe (2009a, 198).

¹² Hall (2004); Hitchcock (2007a); Cartwright, (2004); Psillos (2010); Godfrey-Smith (2009); Illari & Russo (2014).

¹³ Menzies (1996).

advocate is to reverse each of these trends. As opposed to pluralism, I argue for a unified, monistic notion of causation. Causation, therefore, is not many things. To be sure, part of the task will be to account for the various roles that causation is said to have in terms of the actual core definition. Secondly, I argue that, while many of the conceptual roles that causation is said to have, for example in furnishing explanations, are in fact tied to causation, they must each be distinguished from causation itself with their proper relation spelled out. These two tasks are linked. For it is precisely the confusion of these roles, and in particular, those of explanation with causation, that creates the illusion of a need for causal pluralism.

Once causation and explanation are divorced, we can better understand, both what causation and explanation each are, as well as how they link (in other words, when and how causation explains). A similar story will go for the attribution of responsibility, liability, and the role of causation in rational strategy. The temptation to identify causation with its role in these domains must be resisted. This is not because nothing of interest lies in their intersection – quite the contrary – but because causation’s unique role in each needs to be properly understood and highlighted. The point is not merely semantic. It is not merely a matter of what, properly speaking, counts as a “cause”. Rather, causation proper has a special role in the explanation of contingent events and in the acquisition of responsibility for action. Causality explains the occurrence of contingent events and the dependence of some events upon others. Causality creates a form of direct responsibility for an outcome (a causal notion). Causation of an outcome (prima facie, at least) acts as both a reason (ex ante) to (not) do something and (ex poste) as grounds for responsibility for having done it. This does not mean that all instances of explanation or dependence are instances of causation or that all instances of responsibility involve causation. But instances of these that are not directly causal need to be accounted for specially, and, as it turns

out, will (often) need to incorporate information about that which *is* causal.

The thesis advocated here will be that causation needs to be understood as a relation of *production*. Dependence, the supposed second type of casual relation, plays no role in causation itself, but it does play a role in the theory of explanation, responsibility, and rational strategy. Causation and explanation are not the same, but they interact in interesting ways. The same can be said for rational strategy and for responsibility. All of these have a causal species, whose nature is distinct from, and that goes beyond, causation itself. Understanding the productive role of causation sheds light on both causal explanation and causal responsibility.¹⁴

2. Production v. Dependence

Production as a concept, is potentially vague. It is simultaneously obvious, almost analytic, and elusive. We find this term already in Hume: “The same cause always produces the same effect”.¹⁵

More generally, production involves the bringing about of an effect by the cause. While there are several accounts of production, which I discuss in due course, it is best perhaps to

¹⁴ The role of causation in rational planning is less straightforward. Ex ante, when an agent deliberates what to do, what matters from the agent’s perspective, is which outcomes depend on which choices. This seems true, even on Causal Decision Theory. In this case, what matters is the outcome, rather than the path taken to produce that outcome. Of course, if for special reasons, the path is of intrinsic importance to the decision maker, this can be factored into the utility function. This difference between the forward-looking perspective, which is oblivious to the path, and the retrospective analysis of actual causation, which is not, and which, therefore gets enmeshed in problems of preemption, overdetermination etc. is artfully discussed in Hitchcock (2013).

¹⁵ David Hume, *A Treatise of Human Nature* (1739) Book I, Part III: Section XV 4. On the other hand, suggesting the potential tautological nature of “production” as an analysis of causation, Hume mocks an analysis of causation as “production” in Part 3 Sec 2 of the Treatise: “Should any one . . . pretend to define a cause, by saying it is something productive of another, it is evident he would say nothing. For what does he mean by production? Can he give any definition of it, that will not be the same with that of causation? If he can; I desire it may be produced. If he cannot; he here runs in a circle, and gives a synonymous term instead of a definition”. See also Mackie (1974, p. 86).

I hope to do better than Hume anticipates, of course, but this might also suggest that non-reductive or Primitivist accounts of causation are the only ones that can succeed (cf. Tooley, Armstrong, Anscombe and discussion in Ch. 2). Note, however, that even if Hume is right that just calling an account “productive” is uninformative, beyond calling it “causal”, his view seems to commit to the claim that causation and production are the same. Thus, if a theory of causation is not an adequate theory of production, this would suggest that it fails to be a theory of causation as well. This of course, assuming that Hall’s (2004) distinction is sound in the first place.

understand what production is in comparison to what, following Hall, production is frequently contrasted with: dependence.

Hall's seminal "Two Concepts of Causation",¹⁶ which argues for a pluralist (or more accurately, a dualist) conception of causation is a natural place to start. In Hall's account, there are two types of causation: one, *production*, involving an intrinsic, transitive, and spatio-temporally local relation between cause and effect, which eschews causation by omission and action at a distance; the other, *dependence*, such as a simple counterfactual notion of causation, or more nuanced versions, in which the effect covaries with the cause.¹⁷ Productive causation emphasizes the bringing about of the effect by the cause, and, plausibly a physical or "oomphy" connection between cause and effect. Dependence involves identifying the *factors* that contribute to the effect or without which the effect would not have happened.¹⁸ Arguing that these notions are mutually irreducible, Hall takes this distinction as evidence for causal pluralism. I argue against causal pluralism, in favor of production as the primary causal notion.

Proponents of dependence accounts proclaim that causation is "difference making". Yet, that very idea is ambiguous between an emphasis on *difference* (a dependence view) and emphasis on *making* (production). A satisfactory account of causation, I argue, is one that accounts for the difference via the making. Dependence accounts look merely at the differences themselves, leaving out what makes them: or, as I shall argue, what *causes* them. In other words, they leave out causation itself.

While Hall uses "dependence" to pick out simple-counterfactual dependence (his reasons

¹⁶ Hall (2004).

¹⁷ Such as Lewis's (2000) *Influence* account. Interventionist theories (such as Woodward's) are technically non-reductive theories of causation, and thus are not necessarily part of this taxonomy. Nevertheless, they seem to fit more naturally on the dependence side of the distinction, insofar as they analyze causation in terms of counterfactuals that hold under interventions. On the other hand, the notion of an intervention itself might be said to be essentially productive.

¹⁸ As opposed, I'd argue, to the contribution itself, which is a productive notion.

will be discussed below, they stem in part from the power of the productive account, which leaves the simple counterfactual account sufficiently strong to pick up the remaining slack), it would be a mistake to restrict our attention to it. Simple counterfactual dependence (where had the cause not occurred the effect would not have occurred) is a species of a larger genus that can also be characterized as one of dependence. As far as my discussion is concerned, any account in which causation is analyzed in terms of how the cause and effect co-vary, whether this relation is counterfactual dependence,¹⁹ some other relation of necessary or sufficient conditions, a relation of probability raising, manipulability (at least in terms of interventionist counterfactuals), supervenience, or the like,²⁰ is an analysis in terms of dependence.

Some prefer to call this relation “difference-making” and speak of causation specifically in terms of difference-making. My only reservations to this would be that: (i) this terminology seems to be especially suited to causal, rather than other forms of dependence, potentially blinding us to the broader category of dependence more generally (although it seems coherent to speak of other forms of difference making: e.g. that it was a promise made a difference to my obligation to perform it; that it was a circle made a difference to my ability to calculate its area);²¹ (ii) again, the emphasis question raised above: is the emphasis on the difference made or on the making of that difference? The latter is what productive causation is after.

I do not dispute Hall’s claims that dependence and production are distinct. What I dispute is that they each have equal claim to the title of causation. This is not merely a verbal matter (whether we should use the word “cause” to mean “produce” or “produce *or* underlie a

¹⁹ Whether between higher level events, as in Lewis (1973) and Lewis (1986b), or between concrete events in all their specificity or even as Lewis’ (2000) Influence account.

²⁰ I leave out Grounding from this list, because there is an interesting parallel dispute in the Grounding literature, as to whether a similar production/dependence dichotomy exists there. See: Schaffer (2016), Bernstein (2016), and Wilson (2018).

²¹ See examples of non-causal explanation in Lange (2016).

dependence”). Rather, that the sort of dependence that causal dependence theorists are after, i.e. *causal* dependence, is not independent of production. I argue that while there can be dependence without production, *causal* dependence is narrower: what distinguishes cases of causal dependence from mere dependence, is that causal dependences themselves relate to, are themselves downstream from, or in other words, are dependent on, a (causally) prior production relation. As such, causation is *not* dependence, but there are dependence relations (the causal dependences) with causal provenance. Causal-dependence, depends, as it were, on production. The reverse is not true. Causation, strictly speaking, is just production. The standard purported shortcomings of production theories of causation, which are seen as evidence for the need for a dependence-based notion alongside production, are the task, properly speaking, of the theory of explanation, not of causation.

This distinction, between the work of a theory of causation and a theory of causal explanation has an illustrious history. Davidson argues that the logical form of causal explanations differs from that of causal statements.²² In his version, causal statements relate events, whereas causal explanations relate facts. *Shutting the door aggressively* is an event that caused the temperature in the room to rise, but we would not explain the rising temperature by mentioning the aggressive nature of the act. As events go, “shutting the door” and “shutting the door aggressively” are identical. Their input into the causal nexus is the same. As explanations go, however, they differ.²³ While my point does not rest on Davidson’s distinction in the relata, it shares the Davidsonian emphasis on the distinction between these two very closely related

²² *Supra* n. 2.

²³ Davidsonian events work this way. On Kim’s (1976) theory of events, however, the two events instantiate different properties, and may, therefore, differ.

concepts: causation and causal explanation.²⁴ The former is a notion of production, the latter, explanatory notion, also involves the notion of dependence. The rise in temperature, for instance, does not depend on the shutting of the door's having been an aggressive shutting.

Production accounts of causation vary. I discuss several of them in Chapter 2. Typically, production accounts appeal to processes or mechanisms that link the cause and the effect. Another emphasis (whose relation to the process or mechanism view we will question) is that production sees causation as an intrinsic relation: whether c is a cause of e , given the occurrence of c and e , depends entirely on particular aspects in the relation between c and e , or of the process or mechanism connecting them, rather than on circumstances extrinsic to the process. In other words, productive causation is intrinsic to the process.²⁵ For example, if Ann throws a rock at a window

²⁴ I attempt, to the extent possible, to steer clear of the relata debate in causation. For convenience and ease of exposition, I follow the convention in the literature, in speaking of causation as a relation between events. That said, I think my account is workable as a relation between facts as well, so long as facts are understood as states of affairs or facta (which may be the truth-makers of facts), rather than propositions themselves (see Mellor (1995)). Propositions, as purely abstract entities, don't seem apt for producing anything. An event relata theory would be more convenient for my view, as it is easier to show the problem with negative events (and thus with negative or absence causation) than with negative facts. Still, negative states of affairs (the state of my not going to the opera) seem disjunctive and are thus not properly fundamental. More generally, I am open to a pluralistic notion of the causal relata. Causation, like identity, could be a relation that takes on multiple relata whilst being the same relation. That leaves open whether causation should be restricted to having the same sort of relatum on both ends (for instance, events only causing other events, rather than facts; facts only causing other facts, rather than events). I am also open to the view, shared, for different reasons, by Lewis and Salmon, that fundamentally, causation hasn't relata at all.

²⁵ While the most natural way to think of intrinsicness is as pertaining to a process, it might be possible to generalize the notion further, avoiding talk of processes in general. Lewis prefers to speak of intrinsicness in terms of duplicates.

Menzies (1999) argues that the intrinsic relation that productive theories need is intrinsic to the pairs, rather than intrinsic to the relata. In other words, it is an external, rather than an internal relation.

A relation is *intrinsic to its relata* iff whenever a and a' are duplicates and b and b' are duplicates, then both or neither of the pairs $\langle a, b \rangle$ and $\langle a', b' \rangle$ stand in the relation. This relation is also known as an internal relation.

An example of a relation that is intrinsic to the relata is congruence. If a is congruent in shape to b , then any duplicate of a is congruent to b (and to any duplicate of b).

The intrinsic-ness needed for causation is not a traditional internal relation, however. It is an external relation. These, come in different sorts. One sort, the extrinsic relation, such as "belonging to George Washington", obviously won't do. The intrinsic relation we are after is an external relation of a different sort, which Menzies calls *intrinsic to the pairs*. For this we need the notion, not merely of duplicate objects or events, but also of duplicate pairs. Two pairs are duplicate when their corresponding members have the same natural properties (i.e. the relata are duplicates) and the natural relations between the two members are the same across the pairs. A dyadic relation is *intrinsic to its pairs* iff whenever $\langle a, b \rangle$ and $\langle a', b' \rangle$ are duplicate pairs, both or neither stands in the relation.

An example of intrinsic to the pairs, is spatio-temporal distance between objects.

Both of these are as opposed to extrinsic relations. "Belonging to owner x " is an extrinsic relation.

and the window breaks, Ann's throw's being a cause of the breaking is not dependent on what Bob was doing nearby. The claim here is not that whether the window will break is independent of all extrinsic circumstances (clearly had Bob intercepted the throw, the window's breaking would have been prevented), rather, given the process leading from Ann's throw to the breaking of the window, the causal status of Ann's throw itself is determined without recourse to Bob's actions or inactions. Notice that the same cannot be said for Bob's sitting idly, sipping on lemonade, while Ann throws the rock: the import of Bob's sitting idly (or sipping lemonade) to the outcome, would, if we deemed it a causal contribution, depend on extrinsic circumstances, namely on Ann's throwing a rock at the window.

Additionally, productive theories of causation, usually (but not always) restrict causation to positive causes. The absence of defeaters or preventers is, typically, not seen as productive. Here is Armstrong (2004, 448) making a related point:

Let us consider the great causal net of the world, the total causal history of the world, the great neuron diagram as it were, where cause and effect are at every point positive realities (positive events, states of affairs, or whatever). What needs to be added to this causal net to give us the preventions and the omissions, the causal relations that involve absences? It seems that we need to add the laws of nature (taken ontologically, not as statements). They are needed as truthmakers for the counterfactual truths that are obviously involved in preventions and omissions. But given the causal net and its laws, we do not need in addition preventions and omissions. Preventions and omissions exist, of course. But they are not an ontological addition.

I will have more to say, later in this chapter, about the arguments Hall gives for this pluralism as well as why I reject them. It would be helpful, first, to have a clearer grasp of Dependence accounts of causation and their troubles. These troubles inform both Hall's argument that Dependence cannot be the sole account of causation, as well as my own, that they are not a correct account of causation at all.

3. Dependence Accounts of Causation

This section will very briefly rehearse the main dependence-based theories of causation and some of their major pitfalls. The primary purpose of this is to introduce some of the common problems that analyses of causation face, so that we can understand how productive theories fare in their regard, as well as the motivations for distinguishing between production and dependence.

3.1 Regularity Theories

Regularity theories are in the Humean spirit. They are guided by two distinct ideas:

1. Causal relations between events should be analyzed as instances of lawful regularities.²⁶
2. What is distinctive of a cause is that it is a sufficient condition (given the [deterministic] laws and other circumstances).²⁷

3.1.1 Mill. A naïve sufficiency account, in which the antecedent is invariably followed by the consequent, needs to be qualified and carefully phrased. Take a case in which a fire is lit with a match that is struck. Antecedent conditions used in ordinary language, such as “striking the match”, are not, in fact, invariably followed by fire. Rather, as Mill, points out: “It’s usually between a consequent and the sum of several antecedents, the concurrence of all of them being needed to produce—i.e. to be certain of being followed by—the consequent”.²⁸ There will be many such conditions. For example, there must be oxygen present. The cause, properly speaking, of an effect is the sum total of the conditions, positive and negative: “the whole of the contingencies of

²⁶ Davidson (1967).

²⁷ Mackie (1974). Characterized this way, for example, in Paul and Hall (2003).

²⁸ Mill (1843, Book III, ch. 5, §3). Notice that Mill uses the locution to “produce” but simultaneously backs down by filling in a regularity satisfying explication of it. For this reason, this is not a production theory in the sense we are after.

every sort from which the consequent invariably follows” that are sufficient to produce the consequent.²⁹ Since it is only the sum that is, properly speaking, “the cause”, any distinction between “causes” and mere “conditions”, in which we label only some, but not all, conditions as “causes”, is mistaken, or at best pragmatic, rather than metaphysically deep. Thus, both the striking of the match and the presence of the oxygen are conditions/causes of the fire.

3.1.2 Mackie. Mackie, while not exactly a Regularity Theorist, favored the regularity view over views with substantive commitments to powers, because regularities involve “no mysteries.”³⁰ Regularities ground causation, but are not quite the same as causation³¹. The sorts of regularities that ground causation are complex.

For Mackie, a “cause” is not merely the total cause, rather it is *part* of a total cause. The conditions that count as causes are (at least) INUS conditions: insufficient but non-redundant parts of an unnecessary but sufficient condition. A condition is causal if it is a non-redundant component of the total cause; non-redundant in the sense that removing it would render the set of events insufficient for the effect.³²

Which particular INUS conditions we choose to *cite* as causes, however, is a pragmatic matter.³³ Whether it is the flood that caused the famine, or the government’s poor planning, depends on what is taken for granted. This can be context sensitive.³⁴

The elements taken for granted are referred to as the “causal field”. Certain conditions (e.g.

²⁹ Id. Mill treats positive and negative conditions as on a par. This, as I argue in later chapters, is a mistake, even on a Nomic Sufficiency view.

³⁰ Mackie (1974, 60).

³¹ Mackie distinguishes between the *meaning* of causal statements (which he takes to be given by counterfactuals) and the *ground* of causal statements (which are regularities) (1974, 60).

³² In this sense, Mackie’s account is a “difference making” account: C’s presence in the set of INUS conditions, if non-redundant, is a difference maker to the sufficiency of the set. See Strevens (2007).

³³ Lewis (1973) agrees on this point, referring to the favoring of some conditions over others as “invidious discrimination”. Of course, for Lewis, causes are not INUS conditions.

³⁴ Example borrowed from Hart & Honoré, (1985, pp. 35-36).

oxygen) are presupposed by the causal field. These conditions, while part of Mill's total cause, since they are taken for granted, and are thus part of the "field", are no longer cited as "causes", but rather as background conditions. On the other hand, conditions that are not taken for granted in the causal field are, if they are INUS conditions, properly taken as causes.

3.1.3 Problems with Regularity Theories. The problems outlined below are not necessarily unique to regularity theories. Some will reappear in rival accounts of causation.

3.1.3.1 Preemption. Cases of Preemption feature prominently in our discussion, so it is important to understand how they work. The standard preemption case will involve two processes: one, which, intuitively, caused the effect, and another, the backup process, which would have caused the effect had the first process failed to do so.

Mackie himself contemplates a version of preemption as follows:

Smith and Jones commit a crime, but if they had not done so the head of the criminal organization would have sent other members to perform it in their stead, and so it would have been committed anyway.³⁵

Mackie's analysis is that neither the acts of Smith nor Jones (nor their conjunction) are causes, because neither of their actions was necessary.³⁶ Other instances of preemption are more obvious: Suzy and Billy each throw rocks at the window, Suzy's arriving first. Suzy but not Billy broke the window, but each throw was minimally sufficient, and neither was necessary.

In Preemption cases, our intuitive judgment clearly sees the preempting condition as a cause and the backup (preempted) condition as not a cause. The question is how to capture both

³⁵ Mackie (1974, 44).

³⁶ Interestingly, Mackie himself does not offer the solution that each, while not necessary or individually sufficient, is an INUS condition, in that had either Smith or Jones abstained from their actions, that sufficient actual process would not have been sufficient for the effect. See discussion in Strevens (2007). Mackie's actual solution to this problem is to suggest that both Smith and Jones are "producing causes" of the effect, by which Mackie means that each is sufficient to how the actual concrete event that is the effect came about. For instance, that the crime was committed at the time that it was, or in the manner that it was. This sort of productive causation of a concrete event is somewhat cheap, in that many events, the majority of which are intuitively not causes, qualify as causes in this sense. I discuss this sort of causation in subsequent chapters. Mackie's productive solution can be seen, however, as a precursor to productive process theories.

of these judgments.

3.1.3.2 Symmetric Overdetermination. Overdetermination cases are also a theme that will recur throughout our analysis. Suppose that Smith and Jones both set fire to Victim's house, which burned to the ground in one joined flame. Either flame was minimally sufficient to burn down the house, neither was necessary. In symmetric overdetermination cases, neither Smith's nor Jones' fire was necessary to the burning. An INUS test fares better here though: both Smith's and Jones' fire formed an essential role in the set of actual circumstances leading from their fire to the burning. Therefore, arguably, both Smith and Jones are INUS conditions, and therefore, causes. The INUS solution, seemingly handles overdetermination cases.

3.1.3.3 Common Causes. Regularity accounts fail to distinguish cause and effect from joint effects of a common cause. The sounding of the hooter in Manchester at 5 p.m. is an INUS condition for workers in London leaving work.³⁷ Yet it clearly doesn't cause this.³⁸

3.1.3.4 Asymmetry of Causation. INUS is a symmetric relation. But causation is an asymmetric relation. If c is an INUS for e , then e is an INUS for c . Mackie's account thus fails to distinguish between causes and effects. This problem, of failing to account for the asymmetry of causation, is not fatal, of course. One can add other ingredients to the causal analysis.³⁹

3.2 Counterfactual Accounts

In counterfactual accounts, causation is analyzed via the concept of counterfactual dependence between causes and effects: causes are *necessary conditions* for their effects. Mackie's

³⁷ Mackie (1974, 84). Mackie's remedy is to replace temporal priority with causal priority.

³⁸ Strevens (2007) offers a fix in terms of "causal sufficiency".

³⁹ The asymmetry problem appears famously in the literature on explanation as well, as a challenge to Hempel's D-N model. Historically, this was one important motivation to introduce causality to the theory of explanation, since causation, rather than expectability, is an asymmetric relation. My argument resists the automatic equation of causation with explanation, even causal explanation, but I accept asymmetry.

account, in a sense, is also a counterfactual account, although he was not using Lewis-Stalnaker semantics for possible worlds.⁴⁰ We will now look more closely at traditional counterfactual accounts.

3.2.1 Lewis' Simple Counterfactual account. Lewis (1973) offers the simple counterfactual account, the template upon which most counterfactual accounts are built. A cause is “something that makes a difference, and the difference it makes must be a difference from what would have happened without it”.⁴¹

Lewis's theory of *causation* proceeds via a prior notion of “causal dependence”. Lewis defines the latter as follows:

One event, *e*, causally depends upon a distinct event, *c*, iff, had *c* occurred, *e* would have occurred; and, had *c* not occurred, *e* wouldn't have occurred either.⁴²

In other words, the event *e* causally depends upon the event *c* iff:

$O(c) \square \rightarrow O(e) \wedge \neg O(c) \square \rightarrow \neg O(e)$, where:

- (a) “ $O(c)$ ” is the proposition that the event *c* occurs;
- (b) “ $O(e)$ ” is the proposition that the event *e* occurs.

Since if *c* and *e* are actually occurring events, the first conjunct is satisfied, we can simplify:

Causal Dependence: The occurrent event *e* causally depends upon the occurrent event *c* iff: $\neg O(c) \square \rightarrow \neg O(e)$ (i.e. had *c* not occurred, *e* would not have occurred).

The events Lewis relates must be distinct (saying “hello”, loudly, is not causally dependent on saying “hello”). Backtracking counterfactuals are to be ruled out (e.g. it is false to say: had I not boarded my train that would have been because I had already arrived at my destination

⁴⁰ See Strevens (2007).

⁴¹ Lewis (1973, 557).

⁴² Lewis (1973, 561).

earlier).⁴³

Causal dependence, therefore, is counterfactual dependence. Causation, however, is not identical to causal dependence. Causal dependence is sufficient for causation, but not necessary. Furthermore, because counterfactual dependence is not transitive, were causation identical to causal dependence, it would not be transitive either.

This becomes apparent in cases of *Early Preemption*:

Suzy and Billy each aim a brick at a window. Suzy throws and shatters the window while Billy holds his throw on seeing Suzy in action. Had Suzy missed, Billy would have thrown the brick and shattered the window just the same.

In this case, the shattering of the window is not causally dependent on either Suzy's or Billy's throw. Had either (but not both) abstained, the window would have shattered just the same. Yet, clearly, Suzy's throw, and not Billy's, caused the shatter.

Lewis's solution reintroduces transitivity. The intransitive relation of causal dependence is merely sufficient for causation. Causation, however, which, on Lewis's view is transitive, is distinct from causal dependence. Causation involves chaining together a series of events, each of which is causally dependent upon the other. Two links across such a chain might not exhibit causal dependence between themselves, but, if linked by a chain of dependent events, they are properly related as cause and effect. Causation is therefore an ancestral relation. Causation is the *ancestral* of causal dependence. The ancestral relation is transitive. There is a transitive chain of causal

⁴³ Lewis's arguments for excluding Backtracking requires standards for similarity of possible worlds and the occurrence of "small miracles" in them, that have been subject to criticism. Three main objections raised include: (1) Some worlds that perfectly match the actual world, just before the event (thus qualifying as similar worlds) could fail to match the world prior to this, due to convergences allowed by Statistical Mechanics, see Elga, (2000); (2) The standards Lewis invokes seem ad hoc (see Horwich (1987); and (3) The "small-miracles" recipe produces gaps between the time of the miracle's occurrence and the event in question, which either creates discontinuities which threaten the account or contain a stipulated "orderly transition from actual past to counterfactual present", which allows counterfactual dependence of the immediate past on the present (Lewis (1979)).

dependence from Suzy's, but not Billy's, throw to the shatter. Thus, while the shatter is not dependent on Suzy's throw, it is dependent on a subsequent event (the stone's being in the air, just before the shattering), and *that* event is counterfactually dependent on Suzy's throw. As causation is the ancestral of causal dependence, Suzy's throw is the cause of the shatter.

Thus, the simple counterfactual account, in which causation is causal dependence, is replaced with the revised account, in which causation is the ancestral of causal dependence (which in turn is sufficient for causation).

3.2.2 Troubles with transitivity. Lewis is committed to transitivity, both as an independent desideratum of a causal account, but also as it saves his counterfactual account. Some have objected, however, that causation is *not* transitive. Some purported counterexamples include:

Dog Bite. A (right-handed) terrorist plans to detonate a bomb inside a building on Monday. On Sunday, a dog bites his right hand. So, on Tuesday, he detonates the bomb with his left hand. The building explodes.⁴⁴

Boulder. A large boulder dislodges, and rolls down the hill towards Hiker. The boulder is large and fast enough that, if it hits Hiker, he will surely die. Hiker sees the boulder, ducks, and the boulder flies over his head. Hiker survives unscathed.⁴⁵

Switch. A train track branches off to the left and to the right. Both tracks are headed for the station and both take an equal amount of time to get there. A switch controls whether a train will go off to the left or the right. A flips the switch, and the train is diverted to the left at 12:00. The train arrives on time at 1:00.⁴⁶

In each of these cases, it seems as if the first event (the dog bite to the right hand, the

⁴⁴ McDermott (1995).

⁴⁵ Attributed to an early draft of Hall (2004) by Hitchcock (2001).

⁴⁶ Hall (2004).

dislodging of the boulder, A's flip of the switch), causes the second (the detonation with the left hand, Hiker's ducking, the train's taking the left track at 12:00), which in turn causes the third (the exploding building, Hiker's survival, the arrival at 1:00), but, in each, we want to deny that the first causes the third: The dog bite doesn't cause the detonation, the dislodging of the boulder doesn't cause Hiker's survival, the switching of the train doesn't cause it to arrive on time. If this is right, causation appears not to be transitive after all. If so, Lewis' solution in terms of the ancestral is overinclusive. We'll return to transitivity later.

3.2.3 Problems with Late Preemption. Still, even if we ignore transitivity, not all is well with Lewis' revised account. Take an example of Late Preemption.⁴⁷

Late Preemption: Billy and Suzy both throw rocks at a window. Suzy's rock arrives first, hitting the window and shattering it. Billy's rock flies through the now empty space where the window was standing.

On both the simple and revised counterfactual account, neither Suzy nor Billy caused the shattering.⁴⁸ On the simple account, the window would have shattered but-for Suzy's throw (and so for Billy's), so there is no causal dependence between this shatter and the throw.

The ancestral account doesn't help either. There is no event, prior to the shatter, upon which the shatter depends, to which we can trace a causal chain. Take the stone a moment before the impact. The window shatter does not depend on the stone's presence, trajectory, momentum, etc., since, had the stone been removed from the picture, the other stone would still have shattered the window. In this respect, Late Preemption differs from Early Preemption, where the back-up cause

⁴⁷ Lewis (1986b).

⁴⁸ This is meant to include both a naïve counterfactual account in which causation just is counterfactual dependence as well as Lewis' account of causation as the ancestral of counterfactual dependence. Arguably, it does not include Lewis' (2000) Influence account or accounts of de facto dependence, in which certain events are held fixed at their actual values. See: Yablo (1992) and (2002) and Hitchcock (2007b).

(Billy's throw) is a process that never materialized.

Therefore, on both the original and the revised counterfactual accounts, neither Suzy nor Billy caused the shatter. This, however, is counterintuitive. Surely the shatter was caused by a throw. Furthermore, intuitively, it was Suzy's throw, but not Billy's, that caused the shatter. Any plausible account of causation would need to account for this.

3.2.3.1 Fragile events. One possibility is to restrict the causal relation to more finely grained, "fragile" events (such as the time and the place of the shattering).⁴⁹ While the window would have shattered even had Suzy not thrown, it would not have shattered *when it did*. The same cannot be said for Billy's throw.

This, however, would generate spurious dependencies. For example, poison on a full stomach delays the action of poison. If Victim was drugged after eating dinner, on this account, eating dinner is a cause of (the fragile event of) the poisoning.⁵⁰

3.2.3.2 Quasi-Dependence. This solution introduces the notion of an intrinsic process. In the described scenario, the effect does not depend on the cause. The window's shattering does not depend on Suzy's throw. This is true, however, only because there was a backup process (Billy's throw). Had Billy been absent, the shattering would have in fact depended on Suzy's throw.

Lewis suggests that we look at the process that exists between Suzy and the window shatter. In this case, that process was not necessary for the effect. But it could have been. Take then a scenario where that same process exists, without the backup cause (i.e. Billy). Suitably described, we can individuate a process between Suzy, the throw, and the window-shatter.

If, in the absence of the backup cause, c would have been the cause of e (e would have

⁴⁹ This is reminiscent of Mackie's concrete event (necessary for the manner of causation) strategy discussed above.

⁵⁰ Lewis (1986b, 198-9). This problem of spurious dependencies would arise for INUS conditions as well.

depended on c), then, if that same intrinsic process exists here (in the actual case), then c causes e here too, even though there is no dependence between c and e . While e is not actually dependent on c , we can say that e is “quasi-dependent” on c . Quasi-dependence is sufficient for causation, and causation is the ancestral of dependence or quasi-dependence.

The introduction of intrinsicness as a requirement for causation introduces a potential productive element. As we shall see, however, rendering causation as intrinsic in this manner creates tension in the account, since it is inconsistent with the sufficiency of causal dependence (an extrinsic relation).

3.2.4 Trumping. Suppose that the laws of magic say the first spell cast on a certain day determines what happens at midnight. Merlin casts the first spell to turn the prince into a frog; Morgana casts the second spell to do the same. At midnight, the prince turns into a frog.⁵¹

Merlin’s, but not Morgana’s, spell caused the prince to turn into a frog. In this case, the efficacy of the spell doesn’t require any intermediary events (perhaps the magic works directly). Furthermore, there is no necessary difference in manner (time, place, etc.) of each spell’s efficacy. Thus, there is no obvious difference in intrinsic aptness. The only relevant difference seems to be the extrinsic matter of which was cast first.

3.2.5 Causation as Influence. Trumping is a major motivation for Lewis’ revised view⁵² of causation as *Influence*.⁵³ The key move is to switch from standard whether/whether dependence

⁵¹ Schaffer (2000b).

⁵² Lewis (2000). Reprinted in Collins (2004), that version is referred to as Lewis (2004a).

⁵³ Lewis (2000) cites five motivations: (1) Worlds with laws that are “just a little different” from our own, could have intrinsic duplicates with Billy as the cause; (2) Intrinsicness is “at best, a parochial feature” of our own world, but there are other possible worlds where intrinsicness is false (e.g. an Occasionalist world); (3) Trumping; (4) Double Prevention, about which more below, shows the implausibility of the intrinsicness intuition; (5) The presupposition of a chain of events from cause to effect (also rendered suspicious by double prevention).

Lewis’ mention of Occasionalist worlds as a problem for intrinsicness is surprising. Occasionalism would seem to be a productive account per excellence. It is what is lacking between the relata in such a scenario that makes vivid what is lacking in an account of mere correlation. The intrinsic nature of causation is presumably preserved in Occasionalist causation, but differs as to where the causal nexus truly is: between God and world.

to “whether, when, and how” dependence. This takes the fragility aboard treating events as modally fragile:

An *alteration* of an event is either the very fragile version of the event that occurs, or a fragile alternative that differs slightly with respect to time or manner of occurrence. Event *c* influences event *e* when there is a substantial range c_1, c_2, c_3, \dots of alterations of *c*, and a substantial range e_1, e_2, e_3, \dots of alterations of *e*, such that if c_1 had occurred, then e_1 would have occurred, and if c_2 had occurred then e_2 would have occurred, and so on.⁵⁴

Causation is the ancestral of this influence relation.

This move seems to solve late preemption, because differences in the manner of Suzy’s throw influence the manner of the shattering. Not so for Billy.⁵⁵ Similarly, it solves Trumping, since the transformation of the prince is influenced by Merlin’s spell, as the manner of transformation covaries with the kind of spell cast.⁵⁶

The move gets into trouble where “where and how” dependence fails to deliver “whether” dependence. For example, cases in which the backup cause would have brought about the effect in exactly the same manner.⁵⁷ For example, suppose that Billy and Suzy each throw a ball at the same time. Billy’s ball was on the correct trajectory to hit the window, whereas Suzy’s ball was on course to miss. The two balls, however, collide in mid-air, altering the trajectory of Suzy’s ball such that now it hits the window at exactly the same time, speed, and angle, as Billy’s ball would have. Is Suzy’s throw a cause of the shatter? Had she not thrown, Billy’s ball would have impacted the window in precisely the same manner as Suzy’s ball did. Yet, it seems obvious that Suzy’s ball is a cause of the shatter.

⁵⁴ Lewis, (2004a, 91).

⁵⁵ Unless, of course Billy’s rock arrives first. Lewis dismisses this possibility as “too distant” (Lewis 2004a, n. 23)

⁵⁶ Collins (2004) objects that this might be too quick. Suppose that Merlin is limited to one sort of spell. In that case there will be no covariation.

⁵⁷ Strevens (2003), also Yablo’s “smart rock”, discussed in Hall (2004, 237).

3.2.6 De Facto Dependence. If we hold fixed that Billy doesn't throw, the shattering does depend on Suzy's throw. Thus, the shattering has "de facto dependence" on Suzy's throw, in virtue of which Suzy's throw counts as a cause.⁵⁸ A similar account is Halpern and Hitchcock's *Actual Causation*, using structural equations.⁵⁹ Accounts like this, however, will not succeed in isolating this dependence without contextual or normative criteria determining which factors are to be held fixed. This is undesirable for the analysis of causation as a natural relation. Additionally, de-facto accounts and structural equation accounts still inherit much of the criticism directed at dependence accounts more generally.

With a better understanding of Dependence accounts and their vulnerabilities, we can now return to Hall's argument for pluralism.

4. Hall's Argument for Two Concepts of Causation

Recall that Hall (2004, 225) makes the case for a dual nature of causation:

Causation, understood as a relation between events, comes in at least two basic fundamentally different varieties. One of these, which I call "dependence", is simply that: counterfactual dependence between wholly distinct events...the second variety is rather more difficult to characterize, but we evoke it when we say of an event *c* that it helps to generate or bring about or produce another event *e*, and for that reason I call it "production".

Hall presents five intuitively appealing theses about causation:

1. **Locality:** causes are connected to their effects by way of spatiotemporally continuous sequences of causal intermediaries.
2. **Intrinsicness:** the causal structure of a process is determined by its intrinsic, non-causal character, together with the laws.⁶⁰

⁵⁸ Yablo (1992) and (2002).

⁵⁹ Halpern and Hitchcock (2010).

⁶⁰ Hall's second formulation omits all mention of a process: "Suppose an event *e* occurs at some time t_0 . Consider the structure of events *S* that consists of *e*, together with all of its causes back to some arbitrary earlier time *t*. Then any possible structure of events that exists in a world with the same laws, and that has the same intrinsic character as *S*, also has the same causal character, at least with respect to the causal generation of *e*." (2004, 244).

3. **Transitivity:** If event *c* is a cause of *d*, and *d* is a cause of *e*, then *c* is a cause of *e*.
4. **Dependence:** Counterfactual dependence between wholly distinct events is sufficient for causation.⁶¹
5. **Omissions** can both cause and be caused.

The crux of Hall's argument is that no conceivable relation can fit all of 1-5. Causation, therefore, if it is to satisfy all of these, must be fragmented.

Take Omissions (thesis 5), for example. Whatever omissions are (I'll be discussing omissions extensively), they don't seem to be necessarily located in spatio-temporal proximity to their effects, thus violating Locality (thesis 1). Dependence (thesis 4), could presumably violate Transitivity (thesis 3), since counterfactual dependence itself is not a transitive relation.⁶² Furthermore, Dependence is in tension with Locality, Intrinsicness, and Transitivity.

This is seen in cases of *Double Prevention*.⁶³ These are cases in which the effect's being brought about depends on the extinguishing of a threat to the bringing about of the effect. The threat is a would-be preventer; extinguishing that threat is a double preventer.

Here is Hall's example:

Suzy is piloting a bomber on a mission to blow up an enemy target, and Billy is piloting a fighter as her lone escort. Along comes an enemy fighter plane, piloted by Enemy. Sharp-eyed Billy spots Enemy, zooms in, pulls the trigger, and Enemy's plane goes down in flames. Suzy's mission is undisturbed, and the bombing takes place as planned. If Billy hadn't pulled the trigger, Enemy would have eluded him and shot down Suzy, and the bombing would not have happened.⁶⁴

⁶¹ As in Lewis (1973), Lewis (1986b), Lewis (2000), & Lewis (2004b). We should emphasize at the outset that Hall restricts this to non-backtracking counterfactuals.

⁶² Stalnaker's (1968, 106) example: If J. Edgar Hoover had been born a Russian, then he would have been a communist. If J. Edgar Hoover had been a communist, then he would have been a traitor. Therefore, if J. Edgar Hoover had been born a Russian, then he would have been a traitor.

⁶³ The tension between intrinsic theories of causation and the claim that counterfactual dependence is sufficient for causation was pointed out by Lewis.

⁶⁴ Hall (2004, 241).

The following neuron-diagram illustrates the scenario: ⁶⁵

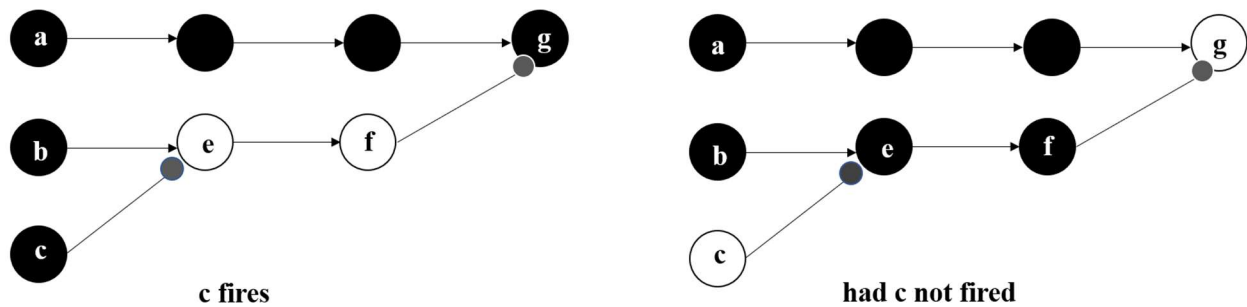


Figure 1: Double Prevention

As the diagram shows, the outcome *g*, the bombing, would not have happened had Billy not pulled the trigger, *c*. The case, therefore, displays counterfactual dependence between *c* and *g*. On the other hand, it fails all three of *Locality*, *Intrinsicness*, and *Transitivity*.

The failure of *Locality* is easiest to see: Billy may have fired at Enemy hundreds of miles away from the bombing.

Intrinsicness requires a bit more elaboration. In the described case, there is counterfactual dependence between Billy and the bombing. But suppose that, in addition to Billy, Suzy was escorted by a second pilot who would have shot Enemy down before Enemy could prevent Suzy from bombing. In this case there is no counterfactual dependence between Billy and the bombing, so *Dependence* is an *extrinsic* matter. Furthermore, intuitively, it would also be odd to say in that other case that Billy caused the bombing, since Enemy never would have succeeded in preventing the bombing anyway. But, intrinsically the processes between Billy and Enemy (and whatever

⁶⁵ Neuron diagrams (first introduced by Lewis (1986b, 196-210)) are to be read from left to right (which represents the order of temporal progression). Letters name events. Filled circles represent the occurrence of an event; an empty circle the absence of an event; a line with a triangular head a causing of an event; a line with a circular head the inhibiting of or the prevention of an event. This diagram is based on Hall (2004, 242).

process exists between Billy and the bombing) are identical across the two cases.⁶⁶ This means that, on Intrinsicness, Billy is a cause either in both or neither scenarios. Thus, intrinsic causation is overinclusive.

Transitivity. Transitivity fails in these cases. Had Enemy's alarm clock not gone off, Enemy would not have embarked on his mission. Had Enemy not embarked on the mission, Billy would not have shot him down. Since Billy's shooting enemy down was a cause of the bombing (via Dependence), Enemy's alarm clock's going off, by transitivity, would be a cause of the bombing as well. This seems wrong.

So why not reject Locality, Intrinsicness, and Transitivity? Because they are needed for Preemption.

Recall that simple counterfactual dependence fails in Early Preemption cases. Causal dependence is a sufficient, but not a necessary condition for causation. The ancestral of causation, which is the transitive closure of the causal dependence relation, is needed there.

The ancestral relation fails in Late Preemption cases, for which Intrinsicness (and Transitivity again) are needed for causation to be the ancestral of quasi-dependence.

Without the first (ancestral fix), Dependence is at best a sufficient (but not a necessary) condition for causation (in which case, causation cannot be mere dependence); without the second (Intrinsicness), we cannot distinguish between the cause and the (late) preempted backup condition.

Hall claims that theses 1-3 and 4-5 pick out two distinct concepts of causation. The first

⁶⁶ Process theorists (see next chapter), will of course point out that there is no process between Billy and the bombing, which will also lead them to denying causation by double prevention (although, technically, there might be minor processes that do connect Billy to the bombing. These presumably won't be difference makers, but this answer is not available to a process theory, or to any purely productive theory). Lewis also puts the condition in terms of a process. Hall's definition of intrinsicness, however, doesn't restrict itself to a physical process (in fact on p. 239 he specifically eschews any talk of process). Any structure of events consisting in the effect and all of its causes will do.

three pick out a *production*-based notion, which Hall prefers to cash out in terms of a process or nomological dependence theory.⁶⁷ This notion is local, intrinsic, and transitive. The last two pick out a *dependence*-based notion satisfied by simple counterfactual dependence itself.

So why not just keep production and discard dependence? Hall anticipates the move we shall be advocating. His reply is as follows:

I think there is something right about this objection, in that production does seem, in some sense, to be the more “central” causal notion. As evidence, consider that when presented with a paradigm case of production without dependence—as in, say, the story of Suzy, Billy, and the broken bottle—we unhesitatingly classify the producer as a cause; whereas when presented with a paradigm case of dependence without production—as in, say, the story of Suzy, Billy, and Enemy—our intuitions (well, those of some of us, anyway) about whether a genuine causal relation is manifested are shakier. Fair enough. But I think it goes too far to deny that counterfactual dependence between wholly distinct events is not a kind of causal relation. Partly this is because dependence plays the appropriate sort of roles in, for example, explanation and decision...And partly it is because I do not see how to accommodate causation of and by omissions (as we should) as a species of production; counterfactual dependence seems the only appropriate causal relation for such “negative events” to stand in.⁶⁸

We find two kinds of objections: one that dependence plays a special role in explanation and decision, and, on the other hand, that causation requires an account of omission. Each will be dealt with in due course.

Briefly, however, my response is as follows: I grant that dependence plays a special role in explanation and decision, but this is due to the role dependence *itself* (rather than causation) plays in those domains. Both explanation and decision-making appeal to criteria of difference making. That does not mean that causation does. *Causal dependence* is a form of dependence, but it is distinct from causation, upon which it itself depends.⁶⁹ As for omissions, I maintain that they are

⁶⁷ Hall’s proposals for dependence involves the “Blueprint” strategy (which makes use of Intrinsicness). He mentions in several places (including Hall (2007), and Paul and Hall (2013)) that he thinks that a nomic sufficiency account might be the best account for production.

⁶⁸ Hall (2004, 256).

⁶⁹ The role of decision is more complicated. Decision theory is always forward looking and outcome maximizing. As such, it is sensitive to causal dependence but, arguably, not to production or to any considerations of actual causation (See Hitchcock (2013)).

not causal. They will be dealt with in Chapter 3.

Hall's view, that production and dependence are distinct, would explain, if correct, why we get conflicting verdicts about causation in certain cases: we are employing two distinct concepts which do not perfectly overlap. Still, the account leaves open the question what, if anything, the two concepts have in common that makes them both species of the same type, causation?⁷⁰ If they are not species of the same type, why do we attribute the same umbrella term to them?

It is possible that the term is simply polysemic, but this conclusion should be resisted if an analysis of causation that resists this polysemy is available. Furthermore, evidence that the notion is not a mere polysemy lies in that, at least *prima facie*, the dispute about whether Billy did or did not cause the bombing seems substantive. Genuine polysemy, such as the difference between "milk" as a noun and "milk" as a verb, is not subject to this phenomenon: once it is made clear which meaning is being invoked, there is no room for disagreement. Not so in terms of causation. Or at least not obviously.⁷¹

Furthermore, at issue is not merely the meaning of a word or a concept, but the metaphysical analysis of a natural phenomenon. Causation is a natural relation, one that picks out something in objective reality. Getting clear on this relation seems worthwhile. A disjunctive version, such as Hall's, seems undesirable and somewhat puzzling for such a natural relation. Additionally, if causation is to have the role it is said to have in explanation, prediction, responsibility, and so on, it would be strange if two distinct concepts (production and dependence), with no obvious relation to one another, each played an equal role in each of these domains.

Ultimately, however, the reason a pluralistic account, such as Hall's, is not necessary, is

⁷⁰ This concern is also raised in Psillos (2008).

⁷¹ See similar discussion in Hitchcock (2007a)

that a solely production-based analysis of causation (though not a dependence account) is adequate to the task. The account I will present will have causation as an intrinsic, local, and transitive production relation, of which *Dependence* and *Omissions* are false.

5. Other Arguments for Causal Pluralism

5.1 Cartwright Against Domain Generality

Cartwright (2004) surveys six different accounts of causation,⁷² suggesting that there is no unified theory of causality, because causality is metaphysically disunified.⁷³ What exist are specific mechanisms, each as a *sui generis* relation. Thus, she suggests that e.g. feeding gasoline, sucking air, and allowing air to flow, are each separate mechanisms, sharing no single, domain-general property, in virtue of which they instantiate a unified causal relation. What they share as causal processes is something shallow and metaphysically uninteresting: an inferential role or a family resemblance.

As Strevens persuasively argues, however, the evidence for this is weak. Cartwright's six accounts do not partition the territory between themselves in the manner that her account would seem to suggest: "there is not one account of causation that works well for feeding, one for sucking, one for allowing flow, and so on", rather the "boundaries are more reminiscent of Hall's production/difference making dichotomy".⁷⁴

Furthermore, the weaknesses of various theories of causation (say, counterfactual dependence) seem to be identical across domains. There is not a particular problem of double-prevention for kissing that differs from the one for kicking.

⁷² These are: (1) Probabilistic theories (such as Suppes) and Bayes-nets methods of causal inference (Spohn; Pearle; Glymour); (2) Modularity accounts (Pearl; Woodward; LeRoy); (3) Invariance accounts (Woodward; Hoover); (4) Natural Experiments (Herbert Simon; Cartwright); (5) Causal Process Theories (Salmon; Dowe); and (6) the Efficacy Account (Hoover).

⁷³ For related views, see also Anscombe (1971), Psillos (2008), and Godfrey-Smith (2009).

⁷⁴ Strevens (2013, 300).

Arguably, Cartwright's account confuses the richness of natural language with the thickness of causal concepts. Linguistically, and poetically, we might lose nuance if we replaced "feed" with "caused to be filled with gasoline", but in causal terms, it's not obvious that anything is lost in terms of meaning or licensed inference.⁷⁵

5.2 Other Dualisms

Type causation concerns generalizations and laws, whereas *token causation* concerns individual facts or events. Different views of causation have taken one or the other of these to be primary. Regularity views, for example, take token causation as derivative from type causation, as causation obtains in virtue of regular (possibly lawlike) patterns. Token causation, then, would be an instance of such a pattern. Alternatively, one might take token causation as the fundamental relation, and treat type causation as patterns or generalizations of token causation. This thesis, for instance, is focused predominantly on token causation.

In pointing out such distinctions, there is no deep pluralism between the two forms of causation, the question is over which is fundamental; whether causation is ultimately seen as a singular or a general relation. Some philosophers, on the other hand, have argued for two distinct types of causation: type and token, which are irreducible to one another.

Eells distinguishes between type level relations, which hold between types of properties and are expressed by generalizations (e.g. "smoking causes cancer"), and token relations, which hold between individual events and are expressed by claims that refer to those events.⁷⁶ On Eells' view, these are independent of one another. Type level relations can be understood in terms of conditional probabilities. Token level causation requires a different probabilistic theory that pays

⁷⁵ Hitchcock (2007a).

⁷⁶ Eells (1991, 6).

attention to changes in probabilities over time.

Sober has a similar view, in which the concept of causation among properties is captured within a probabilistic framework, with a distinct notion of token causation, which he tentatively suggests are understood via causal processes.⁷⁷

Salmon, whose views on causation seem to have changed a bit over time, claims about causal *explanation* that it is a two-tiered affair: on one tier, statistical relevance relations, and on another, causal processes and interactions.⁷⁸ Whether Salmon thought that causation itself (as opposed to explanation) requires both tiers is unclear.

5.3 Normative, Contextual, and Pragmatic Pressures

This section discusses further considerations that are sometimes invoked in favor of a pluralistic account of causation. In some instances, these are seen as reasons to reject the picture of causation as a natural relation in the first place.

5.3.1 Mill and practical interests. Mill observed that the criteria we employ in distinguishing between causes and background conditions are relative to our interests, rather than to anything objective or in the world. We discussed this earlier in this chapter. A famous example: lighting the match can be a cause of a fire but it is not sufficient to light it. Oxygen is required as well. Both the lighting of the match and the presence of the oxygen are causes. Yet, we tend to refer to the match as a “cause” and the oxygen as a “background condition”. Calling something a “background condition” is to suggest temporarily ignoring it, whereas calling it a “cause” is to draw attention to it. The very same event may be explained, causally, by reference to different factors, depending on the interests of the investigator. Thus, the engineer will say that the poor

⁷⁷ Sober (1984).

⁷⁸ Salmon (1997).

road conditions caused the accident, while the policeman will cite the reckless driving. Neither one of these claims necessarily rules the other one out.

5.3.2 Normative considerations. The previous paragraph discussed whether some conditions have primacy over the others in the hierarchy between causes and mere conditions. Some have gone further than this, however, claiming that whether something even qualifies as a causal condition might be determined by context or practical interest. This arises especially in cases of omissions: when Suzy forgets to water the plant, and the plant dies, the death of the plant counterfactually depends on Suzy's omission. But it also depends on everybody else's failing to water the plant. Had one of these omitters watered the plant, the plant would not have died. Yet, we tend to single out some, and not all, omitters in these cases. Why? McGrath argues that the criterion distinguishing between Suzy and the others is a normative one, involving an obligation, an expectation, or the like.⁷⁹ Thus, if there was a normative expectation of Suzy that she would water the plant, her failure to water the plant is causally implicated in the plant's death. The lesson McGrath draws from this is that these normative considerations are part of what constitute Suzy's being a cause.

Hitchcock and Knobe argue that this phenomenon is not limited to cases of omissions.⁸⁰ They discuss a case in which only some employees have the right to take pens from the office. If both, those employees that do, and, those that do not have the right to take a pen, take one anyway, such that the pens run out, it is those who had no right to take the pen (and not those that did) that properly caused the pens to run out. Or so they argue.

This phenomenon, if true, would suggest that norms and normative considerations play a role in determining causal facts. On Hitchcock and Knobe's view, what we mean by attributing

⁷⁹ McGrath (2005).

⁸⁰ Hitchcock and Knobe (2009).

causation to one party, rather than the other, is that this party is the one on whose behavior it is better to intervene (i.e. whose behavior we should alter) to obtain the better result.

I shall deal with the normative claims in due course. I'll say at the outset, however, that I reject the need for normative criteria to establish the causal facts. Accepting normative criteria as part of the metaphysics of causality seems to be a non-starter for causal metaphysics.

As for the Millian point, this is not a pluralism that is threatening. There is no obvious pressure to discriminate between causes and conditions metaphysically. What will be required is an account that explains why we focus on certain aspects and why we tend to agree on what these aspects are. These will be discussed in the following chapters.

As for omissions, the treatment is more complicated. My account, however, will stand its ground and insist that no omissions are causal: neither Suzy nor anybody else caused the death of the plant in that case. At least not by failing to feed it. This does not mean, however, that Suzy cannot be responsible for the death of the plant. The explanation for this will have to wait until chapter 3.

6. Moving Beyond Causal Pluralism to a Unified Theory

If Pluralism is to be rejected, the remaining options are that: (i) causation is just dependence; (ii) causation is just production; (iii) it is neither (perhaps it is something else). (i) and (ii) are compatible with a mutual reduction of one to the other. But such a reduction is not forthcoming. We see this for the reasons that Hall gives: that Dependence and Intrinsicness are incompatible, and because, more generally, we can think of cases with production without dependence and the reverse. Conceptually, these are two distinct notions.

Extensionally, too, counterexamples are easy to generate: for production without dependence, take a case with a continuous process, but bring in a backup cause, breaking the

counterfactual dependence between the effect and the cause. This can work, albeit with a bit more work, for fine-grained effects as well. For dependence without production just sever the cause from the effect spatio-temporally or, better, take an example using omissions.

But if they are not mutually reducible, we are left with either pluralism or a further core concept, in virtue of which both production and dependence are causal. In the absence of a core concept that production and dependence share (I offer no argument for that here, except that there is no obvious overlap between which of Hall's five theses it would require), production seems like the better bet.

6.1 The Rejection of Pluralism in Favor of Production

Production is a blatantly causal notion whereas dependence can come in other, non-causal forms. If we take the examples of production without dependence and vice versa, no case of production seems to have questionable causal provenance (so production seems obviously sufficient for causation). Dependence, while argued by Lewis to be sufficient for causation, is not necessary for it and, in cases in which it exists without production (i.e. double prevention and omissions) can be reasonably doubted as delivering causation.⁸¹

Cases in which a direct process between cause and effect exists are cases in which we attribute causation without qualms; whereas, in cases in which there is mere dependence, while we may be tempted to attribute causation, we perceive what Phil Dowe calls an "intuition of difference".⁸² We understand that not watering the plant is relevant to the death of the plant, but we hesitate in deciding whether that's really a cause, especially when we ask ourselves to compare that particular non-watering (say, by Suzy) to the non-watering of the plant by everybody else

⁸¹ Recall Hall's concession as much above.

⁸² Dowe (2000, 134-5).

(taken jointly or severally). On the other hand, no such hesitation exists concerning someone who pulls the plant by the roots out of the pot. This is the intuition of difference. The challenge will be to show that taking this intuition seriously can account for what we need from dependence.⁸³

This itself, of course, is not the whole story. The story will be that while causation is production, dependence is the key to explanation, or at least *a* key to it. Dependence is important to establishing relevance. Relevance is an explanatory notion. To show that one thing depends on another, therefore, can play an important role in explaining that thing. Thus, the diagnosis of Hall's two concepts is that it mistakenly runs together causation and (causal) explanation.

The benefits of taking production as the central causal notion are as follows:

1. it denies pluralism. Of course, so would taking dependence as the basic notion and denying production, but see above.
2. it furnishes an internally cohesive account of causation;
3. it clarifies some confusion regarding the distinction between causation and explanation, but at the same time
4. gives us a clearer sense of what explanation is and
5. a clearer sense of what causal explanation, specifically is;
6. it clarifies the confusion regarding causation by omission;
7. it furnishes us with a clearer sense of the relationship between causation and responsibility, and in particular the act/omission and/or doing/allowing distinction;
8. it can explain some puzzles in the application of causation in the law.

These shall be spelled out in due course.

⁸³ Such as omissions and explanations, as mentioned by Hall.

My claim is that the productive form is primary: differences in the world are made along the nexus of productive causality. With the production or process in place, the various dependencies are determined. The converse does not hold. In other words, the causal dependences supervene on the production relations.

This view shares much in common with Strevens' account of the web causal influence.

Strevens writes:

We humans are disposed to read fundamental physics...as describing a web of causal influence in which many fundamental-level facts come together to causally bring about, by way of the fundamental laws, other fundamental facts. (2013, 306)

Strevens' account, however, remains neutral as to whether the web is best characterized with a productive, process approach, such as Dowe's Conserved Quantity Theory, or by other dependence type approaches.⁸⁴ In this, his account differs from mine. What the accounts share, however, is the distinction between the web of causation, reality's bedrock, and the higher-level relations of difference-making that depend upon it, and assertions of which are assertions concerning the web. Those higher-level assertions are what is involved in causal explanation. The web relates concrete events (events in all their specificity),⁸⁵ whereas, in many endeavors, what we are often concerned with are more abstract events at a higher level of generality. We care what caused the *death* or the *breaking of the vase*, not the specific trajectories of the particles involved therein (i.e. the concrete event in the web of causal influence). But, it still is the case that it is only via the movement of those particles that the death or the breaking transpire:

Facts about difference-making stand to facts about influence in the same way that facts about centers of mass stand to facts about mass: just as a fact about a center of mass summarizes certain physically pertinent information about the underlying distribution of mass, so a fact about difference-making summarizes pertinent information about the

⁸⁴Strevens explicitly mentions several candidates accounts as compatible with his: Dowe's account; counterfactual dependence, albeit between concrete events; causation as influence; interventionist accounts; and nomological accounts with the right direction (i.e. asymmetric nomological accounts).

⁸⁵ Or, if not events, whatever the essential basic relata of causation turn out to be.

fundamental stuff of causation, the network of relations of influence.⁸⁶

On Strevens' account, causal relations relate high level events: "*c* caused *e*" asserts a difference making relation between *c* and *e*. But it does so, only in virtue of facts about the (low-level) web itself.

My argument is not ultimately about the semantics of locutions such as "*c* caused *e*". In fact, I'm perfectly happy to concede that in terms of use, locutions such as that have multiple and messy meanings (what Skyrms calls an "amiable jumble").⁸⁷ What I care about is causality itself.

My claim is that causality is about the relations of production, rather than those of difference making or dependence. It is only when what produces what is fixed, that difference making and dependence relations are fixed as well. The higher level, difference-making domain, is needed for explanation, which is a related, but distinct, task.

I'm happy to grant that we sometimes use "caused" to mean "explains" or "is what *e* depends on", but I insist that, when pressed, we can understand the distinction between "really caused" and the other form, and we understand the other form in virtue of its relation to the "real", productive cause. It is for this reason that the pluralist hypothesis is false: it is not that we have two equally good concepts, but rather, one, primary concept, and one secondary concept that we use to explain via the first. Satisfying the stricter, productive notion, therefore, is not simply something that we know how to verify; rather, it plays an important role in orienting the secondary, dependence notion. It is because *c* caused *e*, that one thing depends on another; it is because *c* caused *e* that the doer of *c* is responsible for *e*, etc.

⁸⁶ Strevens (2013, 314).

⁸⁷ Skyrms (1984, 254).

6.2 Dependence

I have argued that production is the fundamental causal notion. What about dependence?

Dependence misses the target of causal analysis: supposing e depends on c , why, how, and in virtue of what does e depend on c ? On pain of circularity, dependence views of causation cannot base dependence on c 's *causing* e . While this objection is not devastating, it motivates the thought that dependence is merely a *symptom* of causation.⁸⁸ I argue that many of the virtues dependence has as an analysis of causation are actually explanatory virtues.

Hall and others ask: if dependence is not a form of causation, why does it have all the markings of causation? Why does it explain, predict, guide action? Here is Schaffer challenging Dowe on a related point:

Suppose that Dowe's [productive account - YA] is the best solution to the "universal problem" of negative causation. Then Dowe would have explicated one relation, R1 [the productive one - YA], with none of the epistemic, practical, conceptual, intuitive, theoretical, or scientific markings of being the causal relation, and a second relation, R2 [the non-causal one, i.e. dependence - YA], with all of the epistemic, practical, conceptual, intuitive, theoretical, and scientific markings of being the causal relation. In short, it would be R2 that paddles, waddles, and quacks like causation.⁸⁹

As we shall see, I think Schaffer exaggerates the claim here, as Dowe's theory has many virtues and can handle some of these challenges, but the general point still stands: if in fact it is dependence rather than "causation" that we need for the very tasks we thought we needed causation for, something seems to have gone awry.

The answer to this has two parts.

First, dependence, more generally, is not necessarily a causal notion. There can be different types of dependence: counterfactual dependence, probabilistic dependence, inferential, logical, metaphysical, even moral dependence. In each, one element obtains because of a second element

⁸⁸ Many, including Lewis (1973), have claimed causal dependence sufficient (but not necessary) for causation. For doubts about this sufficiency, see Hall (2000). Another way of putting this is that Dependence is good evidence of causation. For a recent defense of this position, see Kment (2010).

⁸⁹ Schaffer (2004, 213).

upon which it depends. The second element explains the first. But what explains or underlies that dependence can differ. Causal dependence is merely one form of dependence. What is it that makes causal dependence, causal? For the counterfactualist, it is counterfactual dependence (although, even then, with qualifications and with bells and whistles). But this might be too quick: after all, in virtue of what are counterfactual statements true? One view, Lewis' view, is that the Humean mosaic determines the laws which determine counterfactual truths. Causation, then, is downstream from the mosaic and determined by the best system of laws describing which regularities are true of this world. Another view is that the order is reversed: which counterfactuals are true is a function of what causes what.⁹⁰ In other words, on this view, causation is prior to counterfactuals.

If causation is production, or any other non-dependence view, the counterfactual view of causal dependence is a non-starter. What then is causal dependence? Presumably, dependence that is in virtue of causation, where causation is production. This dependence is not necessarily a relation between a productive cause and effect. As we have seen, there can be cases of causation with no dependence (and hence with no causal dependence),⁹¹ and cases of dependence, even causal dependence, with no production.⁹² Rather, the claim is that causal dependence just is the dependence (presumably counterfactual) that holds in virtue of a causal relation: in virtue of one thing producing another. This could be a supervenience relation, for example. In the standard omission case, Suzy's omission to water the plants explains their death, but only because there was a biochemical process that produced that death, which Suzy failed to prevent (and which she could have prevented had she tried). The plant's death is causally dependent upon Suzy's omission, without Suzy's omission causing that death. Suzy's omission is a causal explanation of this death,

⁹⁰ Edgington (2011); Hiddleston (2005).

⁹¹ Overdetermination, Late Preemption, and arguably Early Preemption as well, depending on the version of dependence.

⁹² Such as preventions, omissions and double preventions.

without being its cause.

This shows that we can have causal dependence, a highly interesting notion, without causation between the linked variables.⁹³ This can include dependence on an omission: if the omission was a difference maker to the result, then, even though it didn't properly "cause" it, the result depends on it. So far so good.

The *second* part of the answer is to understand what dependence, and in particular causal dependence is. My claim is that dependence is essentially an explanatory notion. Explanation involves notions of relevance and difference-making that appeal to the idea of dependence. Of course, getting this exactly right, is no small task. Difficulties such as Late-Preemption will present parallel problems for a theory of explanation as they do for a dependence-based theory of causation.

This thesis is not about the theory of explanation. My point here is simply that whatever rightful interest we have in dependence is better seen as concerned with accounting for explanation itself, rather than causation.

To explain something is (at least in part) to show that upon which it depends in a manner that renders that which is explained non-coincidental. This is true, both on the Epistemic, argument notion of explanation found in Hempel,⁹⁴ as well as in more Ontic notions of explanation (such as

⁹³ A similar view to mine, expressly stating that we can have causal explanations without the linked variables being cause and effect, is Beebe (2004). Beebe argues that causal explanations simply give information about the causal history (where following Lewis (1986c) the causal history is the chain and causes to effects). Strevens' (2008) Kairetic account also functions this way. Strevens claims that the word "cause" best picks out causal explanations, which are higher level difference-making claims about the parts of the productive causal web. Also, Jackson's and Pettit's (1990) distinction between Process and Program explanations captures this idea. A Process explanation would explain in terms of underlying physical processes, picking out only the causes. A Program explanation (of the sort appealed to in special sciences) states that certain processes satisfy a particular functional or dispositional higher order description. Multiply realizable properties, therefore, can figure in causal explanations, without being efficacious themselves.

⁹⁴ Hempel (1965).

Salmon's).⁹⁵ Furthermore, it is even true of more pragmatic-centered notions of explanation, such as Van Fraassen's.⁹⁶ I've said very little about what explanations are and what make them good, and I've not taken sides in the issue of the objectivity of explanations. What I'm asserting is more minimal: even on the most subjective reading of an explanation, where an explanation is entirely mind-dependent and interest driven, there must be some constraint on what counts as explanatory. Even if explanations are merely an appeal to relieve an itch of curiosity, not just any relief will do: Hydrocortisone is not an explanation. What is the minimal requirement for an explanation? I claim: some sort of difference-making or dependence. When the explanandum is shown to depend, somehow,⁹⁷ on the explanans, an explanation has been offered

If this is right, then it is no surprise that we invoke dependence relations in causal explanations. This is because all explanations invoke dependence relations. This is a feature of explanation, not of causality.

Of course, this is too quick. We don't just invoke any old dependence relations, we invoke *causal* dependence. It is in virtue of causal dependence that we can explain events. When we do this, we are explaining an event in virtue of the causal structure of the world, although not necessarily in virtue of the event's causes (for that we need to invoke the event's producers).

It is not always best to invoke the producers themselves. This will depend on what we are trying to explain. Still, proper causal connections constrain our explanations in that they may not violate the principles of causality or be inconsistent with what causes what. Furthermore, perhaps there is a depth to causal explanation that suggests that, all else equal, we do better in explaining

⁹⁵ Salmon (1984).

⁹⁶ Van Fraassen (1980).

⁹⁷ This qualification is in order. Whether the dependence is best understood in terms of counterfactuals, probabilities, nomic-sufficiency or other relations is an outstanding issue. My point is just to relegate difference-making considerations to the explanatory domain.

by invoking proper causes. Thus, the omission might explain the death of the plant, but it does so, in virtue of the biochemical process which actually killed the plant, and which the omission failed to prevent. In some contexts, we might be more interested in the omission than in the process (for example, contexts that seek responsible agents, or in contexts in which we are surprised that Suzy didn't water the plants as she normally does). But we cannot understand *that* (and thus cannot truly understand *why*) failure to water the plants explains the death of the plants, without understanding that some actual causal process killed the plants. Crucially, the reverse, is not true: we are not left in the dark about the biochemical process if we don't know that or why Suzy failed to water the plants. The process's efficacy explains itself. This is a feature of the process being the cause, upon which the dependence of other explanatory factors depend.

Any true events or facts are either linked or coincidental. What does it mean for them to be linked? In other words what does it take for them to not be coincidental? When two events (or facts, etc) are non-coincidentally linked, this is because one depends on the other, or they both depend on some further fact. Explanation can take many forms. One form that it can take involves showing how one particular fact or event depends upon another fact or event, which explains that very fact or event.

When $a=b$, the co-incidence is explained by the law of identity; when a logically entails b , it is explained by that entailment: in either case, the laws of logic explain. On the other hand, when there is no entailment between the facts, when the relationship seems logically (or metaphysically) contingent, something else must do the explaining. The same goes for explanations in morality or mathematics. What about causal explanations? Plausibly, all *contingent* links are either explained causally or not explained at all (i.e. true coincidences or chance events). If so, any dependence between events (which are contingent) is causal dependence.

But it would be a mistake to conclude from this that the definition of “causal dependence”, just is dependence between contingent events. Rather, this is a *substantive* thesis. The thesis is that only causality explains such dependences. That’s not the same as claiming that the dependences *themselves* are causality. This, I think, is the key error made by dependence theories of causation. Causality, which is something other than the fact of dependence or covariation, is supposed to underlie that covariation. It is because there is causality (i.e. production) that we can explain (i.e. show dependences) one event by reference to another. Dependences like these are causal dependences. Causal dependences are causal explanations. It is in this manner that we get causal explanation from causation, without causal explanation being the same as causation.

With that distinction in mind, much of the confusion regarding so-called causation by dependence disappears. Cases in which we are tempted to assert that *a* caused *b*, because *b* depended on *a*, even though there is no meaningful sense in which *a* produced *b*, are cases in which we are explaining *b* in terms of *a*. Explanation is not causation. Dependence is explanation, but causation is production.

The next chapter will elaborate on what it means for causation to be production and will face some of the main objections to productive accounts of causation.

Chapter 2: Causation as Production

1. Introduction

This chapter develops the productive account of causation. My aim is not to develop a new or specific account of production, but to make clearer what a productive account is and is not committed to. I begin outlining the basic features that make an account of causation productive, some of which were discussed in the previous chapter. Particular attention will be paid to production's exclusion of causation by omission. Next, I develop the production account more carefully. What exactly do we mean by "production"? Answering this question is not so simple. I distinguish between conceptual and empirical accounts of production and discuss each in greater detail.

The leading contenders for productive accounts come in three flavors: *physical connection* theories (process theories, conserved quantity theories, transference theories, and other mechanistic theories), *primitivist* or *non-reductive* theories, and *determining*, or *nomic sufficiency* theories (of a certain sort). These flavors differ in terms of what is taken to be central to the notion of productive causation. For this reason, they are not necessarily incompatible. In fact, to a large extent, I think they agree, both in the features needed for productive causality, as well as in analyzing causation in the actual world. Primitivist theories, however, because they supply no further analysis of the causal relation, are, I think, best seen as a last resort.

I survey the main accounts of causation that can reasonably be taken as productive. It is theories like these that I have in mind when defending production against causal pluralism or in employing productive causation for the purposes of explanation and responsibility in other chapters. The difficulties with each account are discussed. I do not come out in favor of one particular account (although some accounts are deemed more plausible than others). For my purposes, what matters is

that whichever account of causation is ultimately correct is a productive one.

For illustrative and pedagogic purposes, I often give examples in terms of the Causal Process Theory, and in particular, its Conserved Quantity form. This is because this is possibly the most worked out of the theories discussed, in which the various features of productive causation that I enumerate are easiest to see. That said, I do not officially endorse the Causal Process Theory or argue that it is completely adequate to the task. In fact, the objections and discussion in this chapter suggest that, even if such a theory is to be accepted, it needs to be supplemented, at least in part, by other theories of productive causation.

The chapter closes with some major objections and difficulties that productive accounts (especially process theories) face, with two in particular: the problems of misconnections (or causal relevance) and disconnections (regarding absence causation), as well as some suggestions on how to resolve them.

2. Getting Clearer on Production

2.1 A First Stab

Specifying at the outset just what makes an account productive is not straightforward. In Hall's paper, as quoted above, production is stated to be:

[R]ather more difficult to characterize, but we evoke it when we say of an event c that it helps to generate or bring about or produce another event e . (2004, 225)

This notion has been characterized in many ways.¹

Let's begin with an example. Suppose Suzy leaves work, not realizing that Billy is still in the office. She turns off the lights. Charlie enters the dark office and stabs and wounds Billy, who cannot see him. Charlie clearly caused the wound. What about Suzy? Turning off the lights enabled the attack in some sense: had she left them on, Billy would have more likely seen Charlie. Perhaps this would have prevented the assault (suppose it would have).

Suzy's action is a *component* in the chain of events that led to the assault. It can serve as part of the explanation of the assault: how it happened, why it happened (Billy failed to see it coming).

¹ Other attempts to define production include:

Kim: "But there is another strong intuitive conception of causation that contrasts sharply with the conception tied to counterfactual dependency, or the *sine qua non* condition.

"It is a productive or generative conception of what causing consists in. On this conception, a cause is something that produces, or generates, or brings about its effects, something from which the effects derive their existence or occurrence. This idea was given its classic expression when Elizabeth Anscombe wrote: 'There is something to observe here, that lies under our noses. It is little attended to, and yet still so obvious as to seem trite. It is this: causality consists in the derivativeness of an effect from its cause. This is the core, the common feature, of causality in its various kinds. Effects derive from, arise out of, come of, their causes. For example, everyone will grant that physical parenthood is a causal relation.' (Anscombe, 1993, pp. 91–2)" (2007, 235, citing Anscombe (1971) in Sosa & Tooley (1993)).

"It seems to me that without productive causation, which respects the locality/contiguity condition, such causal processes are not possible. These causal processes all involve real connectedness between cause and effect, and the connection is constituted by phenomena such as energy flow and momentum transfer, an actual movement of some (conserved) physical quantity" (referring to Mental Causation, Id p. 236).

Psillos (2008, 8) construes the production relation both as "primitive" and as follows: "in the production approach, to say that *c* causes *e* is to say that something in the cause produces (brings about) the effect or that there is something (e.g., a mechanism) that links the cause and the effect. ...there have been different ways to cash out the concept of production, but the most prominent among them are cast in terms of something being transferred from the cause to the effect (e.g., a property, or some physical quantity — force, energy etc.). A key thought in the production approach is that cause and effect are connected by means of a local mechanism."

Casteñeda (1984, 17): "Our ordinary concept of causality is – as David Hume wisely underscored – the concept in which an event or change produces another event or change. This production is the central core of causation....The most intriguing feature [of production] is...mediated by a more general concept of world-orderliness that I shall dub causity "

Norton (2003, 16) argues that we identify causes and effects "whenever we have one that brings about or produces the other", taking production as the paradigmatic notion. Norton doesn't claim that such productive causation is actually fundamental (quite the contrary), he takes it to characterize the folk notion of causation. Our access to such a productive notion, on Norton's account, stems from our own awareness of producing bodily movements as agents.

Strevens (2013, 306), similarly characterizes a disposition that we have, as humans "disposed to read fundamental physics...as describing a web of causal influence in which many fundamental-level facts come together to causally bring about, by way of the fundamental laws, other fundamental facts". This web of causal influence is a productive one, rather than a difference-making one. Like Hall's production, it obeys transitivity, intrinsicness, and locality.

The assault is counterfactually dependent on her turning off the lights (at least on some plausible assumptions). Her action raised the probability of the assault's success. Intervening on her turning off the lights (i.e. preventing it) would have lowered the chance of this success, etc.

Yet, there is a clear difference between Suzy's action and Charlie's. Charlie's action is a cause, whereas Suzy's is merely a would-be preventer.² Suzy could have prevented the occurrence (but she didn't); Charlie caused it. It's true that Charlie could have prevented the occurrence too (for example, by not stabbing Billy), but that's just to say that Charlie could have prevented the occurrence by *failing to cause it*. Suzy's action is relevant, but not productive.

The intuition is even clearer if we change Suzy's action to an omission. Suppose the story is that Suzy failed to turn on the lights on her way out. Is it not clear now that there is an important distinction between Charlie's and Suzy's contribution?³

Capturing the heart of this distinction is what sets apart productive theories, but I think that any productive theory should capture it one way or the other. Charlie's action is physically connected to the death in a manner that Suzy's is not. What Suzy "caused" by either shutting the lights or by not turning them on, is an absence rather than an active set of conditions. We can specify the chain of events between Charlie's action and Billy's death without mentioning Suzy, and Charlie's action will still look potent, relevant, and the like. The same cannot be said for Suzy. Her action (or inaction) is only relevant if we add Charlie's action as well. These possibilities echo some of the solutions I'll survey later in this chapter. But, for now, I hope the distinction is intuitively clear.

² As a matter of language, we would clearly call Charlie the assailant, but not Suzy. Suzy may have been negligent, but, at most, is an accomplice. Whether to stab is the same as "caused to be stabbed", is a bit more controversial. The general equivalence is asserted in Bennett (1988) and Moore (2009.) It is denied by Lewis (1986b, 185), though in service of a counterfactual dependence account. If the verb "stab" is means-specific (i.e. one cannot stab with a light switch), this might not preclude an ascription of causation, just of a stabbing.

³ The difference between the two cases is captured in Foot's distinction between *enabling* (the removal of an obstacle) and *forbearing to prevent*. While the latter is clearly non-productive, I think that enabling is still of questionable productive provenance.

This distinction, between a cause and a mere component in an explanation, is sometimes lost when it is conflated with the Millian point about causes and conditions. Mill maintained that there is no metaphysical hierarchy between the various conditions that jointly cause an effect.⁴ Both the striking of the match and the presence of the oxygen have equal entitlement to the honorific “cause” of the burning of the house. Pragmatic considerations alone differentiate between causes and conditions, resulting in our calling one (the striking of the match) a “cause” and the other (the presence of oxygen) a mere “condition”.

I am not denying this Millian point. What I am denying is that among these “conditions” are all the potential preventers that failed to materialize or to prevent the cause. Here Mill and I part ways. The oxygen and the striking of the match are causal; the failure of rain (or the failure of the timely arrival of the fire department) is not. For Mill, this distinction, too, is pragmatic (perhaps a function of what is taken for granted as normal). I am arguing that this distinction is metaphysical. The active causes (or active-conditions) produce the effect, the others are mere *potential preventers*. Their role is secondary.

There is an important sense in which anything upon which the effect depends is a *component* of the complete explanation of the effect. It played a role, at least in the sense that its having turned out differently could have prevented the effect. As such, its presence is necessary for *inferring* the effect from the set of causes. On the other hand, are the events (or facts) which *actively brought* about the effect. These are the productive causes.⁵

⁴ Actually, Mill equivocates on this point, differentiating between positive and negative conditions, but ultimately seeming to side with the equalizing intuition. Mackie and Lewis are far more explicit in this regard. Still, each in their own way stumbled across the production/dependence distinction.

⁵ Both Mill and Mackie make this very distinction, yet deny its metaphysical significance. For Mill the importance of this point seems to be merely epistemic or descriptive, since for him, the cause must be the totality of sufficient conditions, and, no condition is sufficient without reference to these omissions. For Mackie the problem is different. The productive cause merely produces the concrete event. It merely says how the cause occurred, which is separate from the INUS account itself. For a different gloss on the Mackie account, which incorporates the concrete realizer into sufficiency, see Strevens (2007).

Causation itself only occurs along an *active* route, upon which the propagation of causal influence travels. The components along *this* route are actively causal. The other components (the potential preventers) contribute, at best, in a secondary manner: they can be cited as part of an explanation.

Whatever the cause of some effect might be, that cause will only entail the occurrence of the effect, on the assumption that nothing interfered with its efficacy.⁶ In this sense, causes only cause if they are not interfered with. But it would be a mistake to equate the causal status of the cause with that of the failed interference. This for three reasons of asymmetry:

The *first reason* is due to the *asymmetry in the role of positive and negative factors*. Any interfering factor can only interfere if:

- (a) there was a potential (actual) cause to interfere with, and
- (b) the interference caused (in the active sense)⁷ some change in the causal process.

Additionally, (b) can only happen if the interference *itself* is not interfered with.

The omnibus clause of “no further factors interfered” is *always* required. But this is true, even after all the failed preventers are listed.⁸ Listing the failure of negative factors, therefore, adds nothing, over and above the positive factors. It is only in virtue of the active causes, that the preventers can be preventers. These preventers can only prevent by *doing* something. And this, only if that doing, itself, is not further prevented by other preventers.

The *second reason* is the *one-many asymmetry* between active and passive conditions. For any active route of causes there are many (perhaps infinitely many) possible preventers.⁹ There is a

⁶ By entail here I mean necessitate. This can be read as causal entailment (see Strevens (2013)) or just entailment given the laws in Hempel’s fashion of D-N explanation. This lack of entailment without *ceteris paribus* clauses or the enumeration of all other conditions is an important feature in sufficiency accounts of causation.

⁷ Or would have caused, in the counterfactual sense.

⁸ Unless we add a “no further fact” clause.

⁹ This relates to the “problem of profligate omissions” (Menzies (2004)). This will feature again heavily in the discussion of omissions.

fundamental asymmetry between the definitive identification pertaining to which actual processes produced the result and the indefinite nature of which preventers actually prevented it or failed to prevent it. The contribution of the actual process to the effect is readily apparent, without mention of the preventer: all we need do is cite the active causal process, even if we happily amend to it a *ceteris paribus* clause along the lines of “in the absence of a preventer”, and the apparent causal connection between cause and effect is clear. In normal preemption cases, for example, it is clear which process is causal.

This cannot be done with the potential preventers. Any potential preventer is only a preventer, given an actual process. Otherwise there is nothing to prevent. Furthermore, it is only a contributing preventer, on the assumption that other preventers have not preempted *it*, beating it to the punch. When such preventative overdetermination occurs (as in McDermott’s Preemptive Preemption cases)¹⁰ our intuition as to which preventer prevented the effect is murky. Often, it is only with normative considerations that we can successfully untangle such cases. For example, by invoking who was under an obligation or was expected to prevent the outcome.

Thus, the real, active causal relation is a natural relation, whereas the mere potential preventer is a normative one. They are not of the same metaphysical nature. One is causal, the other is not.

The *third reason* is one of *ontological asymmetry* between the active and passive conditions. All causal influence is propagated along the active route. The rest supervenes on this route. As such, there is no need for a dualism that includes both as causal. Fix that which causes along the active route, and you get the rest for free. The story of components is grounded in the story of active causal routes. These are not two independent metaphysical causings. One (the productive route) is metaphysically primary. The other depends on the primary route.

¹⁰ For example, if A catches a ball headed for a brick wall that stands between that ball and a window, did A or the wall prevent the ball from hitting the window? See McDermott (1995).

Causation along the active route is causation proper. The rest: the potential preventers and enablers, are components of a complete explanation, but are derivative of that privileged active route. The causal route (what Strevens calls “causal influence”) is causality itself.¹¹

This distinction, between *active* causal routes and *components* of “what ifs”, is the distinction between production and dependence. In this sense, the account can be stated, conceptually at least, without any reference to powers or other non-Humean connections.

With this intuitive grasp of what production is, let’s try to get a bit more specific.

2.2 Methodology: Conceptual v. Empirical

We are about to present several candidate theories of productive causation, but what are these theories of? Some of the theories make specific empirical assumptions about the way causation works (e.g. that causation involves the transfer of energy). These theories, in turn, are occasionally criticized as parochial, or even mistaken, in their reliance on the particulars of an empirical theory. Surely our notion of causation is not epistemically downstream from scientific discovery? If causation, say, is really just the transfer of energy,¹² or a matter of continuous processes involving conserved quantities,¹³ how do we explain our conceptual mastery of causation prior to our mastery of energy, at least in its modern physical sense? Suppose the behavior of physical quantities such as energy differs in other possible worlds, does this mean that such worlds lack causation? If it does, what, if anything, would explain difference making relations in that world? Wouldn’t understanding whatever feature of those worlds explains difference making and what it has in common with causation (i.e. the producing relation in our world?) be illuminating as well?

Dowe distinguishes between two tasks for theories of causation: conceptual analysis and

¹¹ Strevens (2008).

¹² As in Aronson, Fair, or Castaneda (see discussion later in this chapter).

¹³ As in Salmon or Dowe (discussed below as well).

empirical analysis.¹⁴

Conceptual analysis offers an account of the concept of causation, perhaps of the folk concept as used in language, or our pre-theoretic notions of causality. The question it seeks to answer is, quoting Mackie: “What is our present established concept of causation, of what cause[s] and effects are, and of the nature of the relation between them?”¹⁵ The facts, the data, as is it were, which such a theory seeks to accommodate, are our linguistic intuitions.¹⁶

Empirical Analysis, on the other hand, is a scientifically informed, empirical account of an objective feature of the actual world. Quoting Mackie, again:

The causation I want to know more about is a very general feature ... of the way the world works: it is not merely, as Hume says, to us, but also in fact the cement of the universe. (1974, 2)

[T]his is an ontological question, a question about how the world goes. In Hume's phrase, the central problem is that of causation “in the objects.” (1974,1)

An empirical analysis, could deliver a contingent truth and may or may not capture our common sense understanding of causation.¹⁷

Dowe charges that many philosophers have confused these two ideas. Thus, if an empirical theory of causation is offered, criticism of that theory in terms of everyday usage or in terms of what happens in other possible worlds, is beside the point; for example, if one were to criticize transference theories, asking whether a collision in a world where energy is not conserved would be causal.¹⁸

This sort of retrenching to purely empirical verdicts, draws criticism from Hall and Paul (2013), violating their “Fourth Rule” of causal methodology: *Thou Shall Not Be an Ontological Wimp*:

¹⁴ Dowe (2000).

¹⁵ Mackie (1985, 178).

¹⁶ Such an account may or not be revisionist, in whether its causal verdicts accord with that of the ordinary man on the street, but when they are revisionist, it is because they prune or tidy up the ordinary notion, for the sake of greater logical consistency.

¹⁷ It could also be a Kripkean necessary truth such as natural kind identities.

¹⁸ Earman (1976, 24) criticizing Aronson.

There is a second way to be a wimp: appeal, in one's reduction, to facts too specific to our own world ... It's not that we think an account needs to be in the business of issuing verdicts about any old conceivable situation some philosopher can cook up. The literature (including some of our own contributions!) occasionally likes to speculate about the causal structure of worlds in which magical spells can act across a temporal gap, or in which there is backwards causation...Still, causation is a generic enough relation (and our corresponding concept of it is broad enough) that tying a theory of it too closely to facts peculiar to our actual world, and its physics, manifests a failure of nerve.¹⁹

Lewis draws a similar complaint discussing “biff” accounts of causation (accounts that capture a functional analysis of causation in its productive, physical form):²⁰

What is causation? As a matter of analytic necessity, across all possible worlds, what is the unified necessary and sufficient condition for causation?—It is somehow a matter of counterfactual dependence of events (or absences) on other events (or absences).

What is causation? As a matter of contingent fact, what is the feature of this world, and of other possible worlds sufficiently like it, on which the truth values of causal ascriptions supervene?—It is biff: the pattern of relatedness of events to one another by the relation that is the actual occupant of the biff-role. Biff is literally the basic kind of causation, in this world anyway: the basis on which other varieties of causation supervene.

Two different answers to two different questions. They are not in competition. I conjecture that both are right. (2004, 287)

The worry is that such empirically narrow accounts are insufficiently illuminating. We want to know what causation is beyond the specifics of how it is manifested in the actual world. Process theories, such as Dowe’s and Salmon’s, that characterize causation as a physical connection between cause and effect along a suitably described causal process thus mistake the question under consideration.

I think this worry is misplaced. While Dowe’s distinction between the empirical and conceptual is sound, this shouldn’t be taken to mean that they cannot bear on each other at all.

¹⁹ Paul and Hall (2013, 40-41).

²⁰ The operative definition of “Biff” in “Void and Object” is built around Menzies’ “crucial platitudes” of the causal relation. Causation specifies the (i) intrinsic (to the event pairs) relation between (ii) distinct events (iii) that is typically, but perhaps not invariably, associated with probabilistic counterfactual dependence (See Menzies (1996) and (1999)). Menzies’ account is a functional analysis of causation. Note that this platitude view of Menzies’ differs from his later view (2009) in which he rejects the idea that causation is in fact a natural relation.

Obviously for an empirical theory to be a theory of *causation*, it must capture the concept somehow.

We can distinguish two questions:

1. What sort of relation is causation (productive or difference making [or other])?
2. How does this relation manifest empirically (are there any specific patterns to this manifestation)?

A better account of what Dowe and Salmon are up to, I think, is to understand their empirical account as an empirical account of what *production* is. This account, itself, is secondary to the conceptual distinction between dependence and production discussed in the previous chapter. But that what we need is an account of production is given by conceptual, Canberra style, analysis that causation is a productive relation. Causation in this world will be whatever in this world produces.

We can identify the productive relation with more than one physical phenomenon, as well as in other possible worlds. This allows us to discuss causation (at least conceptually) in contexts outside of modern science, and enables us to, at least understand, debates about causality outside these domains, substantively.

Examples of this include causation in the special sciences, where fundamentality is at issue.²¹ Furthermore, non-physicalist views, whether Dualism or Idealism or Theism, all invoke causal notions that are clearly not covered by physicalist accounts of causal processes. A traditional challenge for these theories concerns causal interaction with the physical domain. Surely this debate is not one of mere definition. The difficulty, say, with Dualist interaction is with how a non-physical

²¹ This is a point of contention in the debates surrounding mental causation. The causal exclusion argument is taken by Kim (2007) to rest on the need for productive causation for proper agency for the mental. Since productive causation, in Kim's understanding, must be physical causation, there is no room for mental causation. Loewer (2007) defends a difference making view that accepts causal closure but rejects the need for exclusion of the mental. If the view I argue for is right about causation, what is required is productive causation. That said, we are leaving open whether productive causation must be accounted for via a physical process theory. What matters is that it would be a mistake to cast the debate about mental causation as resting on a confusion about what causation is, rather than a substantive debate about whether mental states or properties can produce.

being could affect changes in the physical world. The difficulty is of physical possibility, not definitional possibility. The causal closure of the physical domain, for example, is a substantive claim ruling out external causes, not a definitional truth.²²

2.3 Criteria of Identification

Since causation is production, and since we are about to survey the possible list of empirical analyses of production, it would be helpful to have a more precise grasp of the concept of production or at least a list of criteria, by which we can judge an empirical theory and see whether it is in fact productive.

It would be nice to simply define a productive account with a set of necessary and sufficient conditions, but it turns out that this is not as simple as it seems. Productive accounts have a bit of an “I know it when I see it” quality.²³ Hall’s (2004) presentation of production is explicitly vague.²⁴

One thought about production is that it invokes the Aristotelian notion of efficacy. Some take this to mean “powers”.²⁵ On this reading, perhaps production is just the notion of causation that invokes the sort of connection that Hume denied.

But many of the theories that can be classified under the productive heading are explicitly Humean in the desire not to invoke such powers.²⁶

Productive accounts see causation as generative and, obviously, productive, as a relation of the cause bringing about the effect. Is this more informative? Hume himself thought otherwise:

Should any one...pretend to define a cause, by saying it is something productive of another, it is evident he would say nothing. For what does he mean by production? Can he give any definition of it, that will not be the same with that of causation? If he can; I desire it may be

²² Papineau (2009).

²³ As in Justice Potter Stewart’s famous quip about pornography in *Jacobellis v. Ohio*, 378 U.S. 184 (1964).

²⁴ Recall, his language “the second variety is rather more difficult to characterize, but we evoke it when we say of an event *c* that it helps to generate or bring about or produce another event *e*, and for that reason I call it ‘production’” (2004, 225).

²⁵ Psillos (2008).

²⁶ Notably Salmon, Lewis, and Hall.

produced. If he cannot; he here runs in a circle, and gives a synonymous term instead of a definition” (Treatise Part 3 Sec 2).

In fairness, perhaps this is as it should be, since, as we shall see, included among productive-causation theorists are those who claim that causation is an irreducible or primitivist notion. If so, there will be no analysis of what causation, i.e. production is, other than “causing” or “producing”.

Still, it would be helpful to have some criteria with which to identify productive accounts as such. Three methods suggest themselves. The first will be to simply enumerate the very three theses (Intrinsicness, Locality, and Transitivity) that Hall mentions in *Two Concepts* as characteristic of production. Another will identify production with “oomph” relations, insofar as we have a clear sense of what that means. The third will simply identify productive causes as the product of any analysis of causation that precludes omissions.

2.3.1 Hall’s three theses. One manner to identify productive theories is simply to test whether they meet Hall’s three theses. This needn’t involve defining “production” operationally or leaving it ungrounded and uninformative. It does come at the cost of making satisfying these three theses trivial. Still, a helpful question when assessing whether an account of causation is productive is whether it is in fact transitive, intrinsic, and local. This leaves open (at least conceptually) whether it satisfies the two remaining “causal” theses: Omissions and Dependence (i.e. the ones Hall reserves for the second, non-productive concept of causation).

One worry with identifying productive theories this way is that each criterion could conceivably be tweaked. While it is intuitively plausible that an account of causation that has all three is in fact productive, it is by no means obvious that a productive account cannot fail to respect, say Transitivity, or Locality. Perhaps failure to meet all three at once would render an account unproductive.

What do these theses entail?

2.3.1.1 Locality. This means spatio-temporal locality. Causes are proximate to their effects both in space and in time; which rules out action at a distance, as well as causation across temporal gaps. Backwards causation is still a conceptual possibility, so long as there are no gaps in the opposite direction.²⁷

Though intuitive, it is by no means obvious that, conceptually, Locality is necessary for production. Is it sufficient? Locality as a feature of causal relations needn't be productive. We could have a theory of causation that works on counterfactual dependence, but in which effects are always local to their causes. This could be a brute fact, or even a law of nature. As a criterion for causality, however, this would seem strange. Without the productive assumption, what role is locality playing? We could gerrymander a concept such as "counterfactual dependence + locality", but it is difficult to see what justification such a concept would have as a candidate for a natural relation.²⁸

2.3.1.2 Transitivity. Of Hall's three theses, transitivity as a necessary condition for production seems the least obvious. It doesn't seem like failures of transitivity detract from the productivity of a causal account. If causal influence diminishes over space or time or by number of interactions, then one might expect transitivity to fail.

On the other hand, transitivity clearly fails on a simple counterfactual view of causal dependence.²⁹ So perhaps if causation is transitive it is so because of its productive features.³⁰ Also, if production accounts are transitive, the purported counterexamples to transitivity need to be met.

²⁷ For this to work, we need to allow for causal chains. Obviously causes and effects can be separated by spatio-temporal distance. Poisoning the King's food can cause death hours later and miles away. The point would be that a causal chain can be traced across these spatio-temporal gaps

²⁸ Interestingly, Hume's regularity theory takes locality as one of the criteria for causality.

²⁹ Lewis (1973) is not a simple counterfactual account, because he defines causation as the ancestral of counterfactual dependence, this precisely in order to capture transitivity.

³⁰ More interestingly, perhaps failures of transitivity result from the confusion of the explanatory with the causal, especially as relates absence causation and omissions. Once these are seen as non-causal, transitivity is far more tractable. The canonical cases of transitivity failure involve issues of relevance (e.g. dog bite) or quasi-causation (preventions).

2.3.1.3 Intrinsicness. This is the most difficult of the three theses to identify, in part because the meaning of the definition is least obvious.³¹ That said, Intrinsicness has been taken aboard by almost all production theorists.

The intuition is simple enough: if c causes e , that fact (or the truthmaker for that fact) is simply a matter of how c and e relate to one another and doesn't depend on a third relatum. Intrinsicness is said to be a purely local relation between cause and effect.³² If c causes e , this relation (of causality), if it is to be intrinsic, will depend entirely on the intrinsic properties of these events and what goes on between these two events. Consider again *Late Preemption*:³³

Billy and Suzy both throw rocks at a window. Suzy's rock arrives first, hitting the window and shattering it. Billy's rock flies through the now empty space where the window was standing.

On a simple counterfactual account, neither Suzy nor Billy caused the shattering.³⁴ Intuitively, however, Suzy's throw, but not Billy's, caused the shatter.

One solution, is to see how Suzy's throw and the actual shattering are linked by a process. Had this same process transpired in a world in which Billy was absent, we would not hesitate to attribute the shattering to Suzy's throw.³⁵ In other words, in that world, Suzy caused the shatter. If causation is intrinsic to a process, then, the very same process is causal, even in a world in which

³¹ Kistler (2013) (a process theorists) alleges that intrinsicness is uninformative and essentially circular (since we need to know the structure of the causes of e in order to know which structure of events whose intrinsic nature determines whether c causes e), unless it is just taken to mean locality.

³² Menzies (1999). To be clear, "local" in this context just means specific to the relata and their relationship in this instance. Hall's Locality criterion is a different matter, concerning spatio-temporal contiguity. This too is a feature of productive causation, but the two are distinct. Something can be local in the spatio-temporal sense but not intrinsic to the relation.

³³ Lewis (1986b).

³⁴ This is meant to include both a naïve counterfactual account in which causation just is counterfactual dependence as well as Lewis' account of causation as the ancestral of counterfactual dependence. Arguably, it does not include Lewis' (2000) Influence account or accounts of de facto dependence, in which certain events are held fixed at their actual values. See: Yablo (2002) and Hitchcock (2007b).

³⁵ The assumption being that the process (or its counterpart) can be individuated without reference to Billy.

Billy throws as well.

The same cannot be said for Billy: the process initiated by his throw does not culminate in a shattering.³⁶ True, had Suzy not thrown, and Billy thrown, there would have been a process that culminated in a shattering (i.e. Billy would have caused the window to shatter), but that process is an intrinsically different process from the one in the actual world.

2.3.2 Oomph. Oomph (or biff) accounts of causation seek that extra push, force, glue, or tie that connects the cause and the effect. The push could be metaphysical, as in a necessitation relation, or purely physical, involving physical contact or banging, as in the traditional Mechanistic conception of causation in Descartes, Hobbes, and Boyle. Accounts that seek oomph, might favor the colliding billiard balls paradigm, but they needn't be purely mechanistic. They do need a causal tie or mechanism connecting cause and effect.

Oomphy theories can be reductive or primitivist. They can posit a physical connection or just treat the causal relation as brute.

2.3.3 Lack of omissions. Another feature that productive theories tend to share is a lack of comfort with causation by omission. It's easy to see, intuitively, the discomfort with omissive causation. Omissions are not actions, they are not events.³⁷ If causation is production, then the cause must do something to bring about the effect. How can a non-doing *do* anything at all? How can something that does not take place in space or time (as such it cannot be an oomph either) produce something that does?³⁸

As we will see, not all productive causation theorists reject omissive causation. But a lack of

³⁶ There is some concern in how this is formulated. Technically, Billy's throw impacts the world as well, and, presumably makes some physical contact (sound-waves, air pressure, etc.) with the shattering. This raises the question as to how fine-grained the individuation of the effect should be.

³⁷ I'll discuss proposals to construe omission as oblique reference to events in chapter 3.

³⁸ Accounts such as Schaffer (2010) or Lewis (1986b) that locate omissions in space and time will obviously say otherwise.

comfort with omissions is a common feature of these theories. The contrasts with dependence theories is stark: counterfactual, interventionist, regularity, and probabilistic theories of causation standardly handle omissive causation with ease, something frequently taken as a virtue these theories have over productive accounts.³⁹

Regardless, moving forward, I'll treat accounts that meet the criteria above (conforming with Hall's specific theses of Locality, Transitivity, and Intrinsicness; oomphiness; and lack of omissions) as paradigm cases of production. Next, I will explore some more specific theories of causation that can properly be characterized as productive. The accounts I'll discuss come in three general flavors: physical connection theories (including Transference, Process, Conserved Quantity, and Mechanistic accounts), non-reductive and Primitivist accounts, and Nomic Sufficiency accounts, although the last are less obviously productive.

3. Specific Accounts of Production

A fully worked out empirical theory of causation will commit to both a conceptual and empirical account of productive causation. For my purposes, which of these theories is ultimately correct as an account of production is less important than the more basic point that causation is productive. In the interest of completeness, however, I will explore the terrain, examining the plausible contenders, their strengths and their weaknesses. Each of these accounts can be taken as productive and also generally satisfies the criteria above. When it does not, I will mention the discrepancy as well.

The accounts discussed in this section come in three general flavors. These flavors can be

³⁹ That said, careful dependence theorists too struggle with omissions. A simple counterfactual account of "had A not ϕ -ed" when ϕ is an omission, requires taking a nonexistent event as the relatum. Lewis (1986b) suggests a different reading for omissive counterfactuals ("had A ϕ -ed"), but this gets into some complication. See also discussion in Lewis (2004b) where Lewis takes omissive causation to lack relata. Paul and Hall, while insisting that omissions are causal, insist that the treatment of omissions proceed differently from that of garden variety causation. Similarly, Hitchcock (2007b) suggests that omissions need to be dealt with using the "default" / "deviant" distinction.

said to track the core intuition of producing or generating discussed at the outset of this chapter. Producing might be a matter of a physical mechanism between cause and effect (this is the key insight of the physical connection theories) or in a determining relation between cause and effect, focusing on the causes' sufficiency, rather than its necessity for the effect (this is the key insight of nomic sufficiency or determining theories), or the basic producing relation might be seen as primitive and not reducible to any other feature. Depending on how these accounts themselves are construed (as conceptual or empirical) they may disagree on the analysis of causation or they may be mutually compatible. For example, it is open to adopt a Primitivist or sufficiency-based analysis of the *concept* of causation, together with an empirical theory that such relations manifest only via causal mechanisms. It is also possible to adopt a mechanistic notion as essential to production, whilst allowing for more than one form of physical mechanism to manifest this relation, or while claiming that all forms of nomic sufficiency (suitably described, perhaps) manifest via a physical connection. On the other hand, it is not open to claim that causation is both a metaphysical primitive and reducible to sufficient conditions or mechanisms, of course. For this reason, this section was preceded by a section offering useful criteria of identification that to some extent stand apart from the particular analyses discussed here.

3.1 Physical Connection Theories

Physical Connection theories take causation to involve a physical connection between cause and effect. These divide into transference theories, in which causation is a matter of transferring a physical quantity from cause to effect; causal process theories, in which causation involves a physical process, in which the process accounts for the proper connection between cause and effect, such that causality proceeds only between nodes directly linked by such a process; and mechanistic theories, in which cause and effect proceed by way of a physical mechanism. The first two types of theories

(transference and causal process theories) are physicalist in nature, analyzing causation at the level of fundamental physics. Mechanistic theories analyze causation at higher-levels only. While this can be taken as a substantive disagreement as to the correct level of singular-causation, it also opens the possibility of a synthesized theory which takes physical connections to characterize causation at the micro level and mechanisms at the (or at some) macro-levels. This of course depends on taking the specific hypothesis (transfer, causal process, etc.) to be an empirical, rather than conceptual analysis of causation. What about physical-connection itself? Is it an empirical claim, that all causes are connected to their effects, or a conceptual one? The theory could be construed either way. Is the theory a reduction of causation to physical connection or just a claim that causation occurs via connection? Some of the theory's most able exponents (e.g. Salmon) clearly sought a reduction, but nothing in the theory, as far as I can tell, rules out the possibility of a primitivist or sufficiency-based analysis of the concept of causation with a physical-connection empirical account of that concept.

I turn now to the theories themselves.

3.1.1 Physicalist Theories. These come in two general flavors: Transference Theories and Causal Process Theories.

3.1.1.1 Transference Theories. On Transference Theories, causation is physical transference.⁴⁰ For any physically possible causal process, there is an actual transfer of something from cause to effect. Actual transfers are local phenomena, which may or may not be law governed. Three Transference Theories I'll mention are those of Aronson, Fair, and Castañeda.

Aronson takes causation to be energy or momentum transfer, from one object to another, at

⁴⁰ Ehring (1997, 9).

the point of contact between the objects.⁴¹ Fair's account is similar to Aronson's, except it doesn't require conservation of the quantity, only the transfer of *part* of it. On the other hand, Fair is more restrictive than Aronson as to which quantities count.⁴² Castañeda, like Aronson, is less committed, at least conceptually, on the specific quantity transferred between cause and effect. What matters on his account is that "in causation there is a transfer (or metaphysical replication) of something in the setup containing the cause to the setup containing the effect".⁴³ What is transferred is "causity". Empirically, Castañeda claims, causity is energy, but that is a contingent identity (a subject for scientific investigation). But to the philosopher, causity is measurable, divisible, etc. Philosophically, on Castañeda's account, the transference of causity is a necessary condition for causation.

Since, on these accounts, it is transfer that constitutes causation, the question arises whether causation requires change. One might have thought that inertia, persistence, or lack of change is a causal process as well.⁴⁴ An object that persists in time might be thought to display a causal process, for example when an object's inertia is the cause of its motion.⁴⁵ The transference theorist could of

⁴¹ C causes e iff :

- (1) e is a change that cannot be accounted for without reference to other bodies;
- (2) the c-object makes contact with the e-object at the time of e; and
- (3) prior to the time of the occurrence of e, the c-object possesses a quantity (e.g. energy) that it transfers to the e-object (Aronson (1971, 421-2)).

⁴² "A causes B iff there are physical redescrptions of A and B as some manifestation of energy or momentum or refer [sic] to objects manifesting these, that is transferred (flows), at least in part, from the A-objects to the B-objects". Fair (1979, 236).

⁴³ Castañeda (1985, 22).

⁴⁴ Transference theorists do in fact take persistence to be an important feature of causation, in that the object transferred itself persists (or its quantity does). For Ehring, this overlooked insight is crucial.

⁴⁵ Spinoza distinguished between immanens cause and transiens cause in this manner. Leibniz has a similar distinction between intrasubstantial and intersubstantial cause. See Bennett (1984, 113). See also discussion in Dowe (2000, 52) and Ehring (1997), for whom persistence, rather than transfer, is the defining feature of causation.

course deny causation in this case.⁴⁶

A further problem involves identifying the quantities transferred, before and after the event of transfer. The energy transferred from cause to effect is supposed to be numerically identical across the transfer (if A has quantity x of causity, is then annihilated, and afterwards, B emerges with quantity x of that same stuff, there is no identity through time of the causity transferred from A to B). Is the stuff that is transferred a property (in which case, in what sense is the property “transferred”?) or is it an object (in which case, can it go unpossessed by something else)? This doesn’t sound right for momentum or energy. Imagine four hanging balls: two swing towards the other two, which are stationary and touching. The balls collide at the same instant, leaving the first two stationary and touching while the other two move off. Which motion was given to which ball? The conservation laws don’t answer this question.⁴⁷

This problem, in particular the need to capture causation via persistence, has motivated Causal Process Theories, which have superseded Transference Theories to a large extent in the literature. For this reason, I postpone discussing objections to Transference Theories that apply equally to Process Theories until my assessment of the latter at the end of the next section.

3.1.1.2 Causal Process Theories. Causal Process Theories identify causality via the more basic notion of a causal process. Two important theories of causal processes are Salmon’s Mark Transmission Theory and Dowe’s and Salmon’s Conserved Quantity Theory. I’ll present Salmon’s

⁴⁶ Dowe (2000, 53) takes Aronson and Fair to task on this point. The objection is that an explanation involving Newton’s First Law is a “causal explanation”. To make the point more vivid, Dowe contrasts this explanation with the Aristotelian one, according to which force is required for motion. The Aristotelian and the Newtonian disagree about what the cause of the body’s motion is, with the Newtonian, importantly, saying it is the body’s inertia.

I agree that the inertia can explain the motion, but this does not show that inertia is causal. On the Newtonian picture, inertia doesn’t require a causal explanation. This does not mean that such movement is miraculous, just that the default position is constant velocity, rather than mere rest. Even this sells the Newtonian short. For the Newtonian might explain, causally, how the body came to be in an inert state in the first place. Since such an explanation would involve Newtonian forces, that explanation would be causal. But cannot inertia serve as an explanation as to why a body remains at constant velocity? This question conceals an ambiguity. Is inertia better understood as a force keeping the body at rest or as the sum of all forces acting on the body (with “inertia” naming the circumstance in which the sum equals zero)?

⁴⁷ Dowe (2000, 58).

Mark Transmission theory first, since its exposition gives a clearer flavor of how the Causal Process Theory works. Salmon himself, however, came to see the shortcomings of this theory and adopted a version of the Conserved Quantity Theory. The Conserved Quantity Theory is best viewed as an improved version of Salmon's theory.

3.1.1.2.1 Salmon and Mark Transmission. Causal Process theories attempt to include both persistence (via immanent causation), and change (via what Salmon calls "productive causation")⁴⁸ by capturing causal connection via causal lines.⁴⁹ The core idea is that causation can be understood in terms of *causal processes* and *interactions*. For this, we need an account of *processes* and of what distinguishes causal from non-causal processes. Causality only proceeds along these causal-processes. Change, which requires interaction, is accounted for in terms of these very processes.

On Salmon's account, the processes upon which causation is grounded are fundamental; more so than the causal relations between events.⁵⁰

Among processes, an important distinction is made between causal processes and *pseudo-processes*. This distinction traces back to Reichenbach, who, in order to shed light on relativity and the direction of time, developed the idea of a physical process that propagates a mark.⁵¹

A genuine causal process is a process that can transmit a mark.⁵² Otherwise, the process is a pseudo-process. The latter are not causal. Take a spot of light moving along a wall. The trajectory of

⁴⁸ This is source of potential terminological confusion. For Salmon, "production" is one component of his account, responsible for change. In our terminology, the entire account is productive.

⁴⁹ Russell (1948). A process is represented by a world line in a Minkowski diagram.

⁵⁰ Dowe (2009). Salmon cites John Venn: "Substitute for the time honoured 'chain of causation', so often introduced into discussions upon this subject, the phrase a 'rope of causation', and see what a very different aspect the question will wear "(Venn (1866, 320)). Venn inveighs against the tendency in causal reasoning to represent individual events as symbols, asking what connects them, whereas in real causal processes, there are continuous strands connected without break.

⁵¹ Reichenbach (1956, 147-9).

⁵² A common misunderstanding of Salmon's view is that causation consists in the transmission of the mark. This is not so. The importance of the mark criterion for Salmon is that the capacity to transmit a mark is a symptom of a process' being causal (plausibly, it is more than just a symptom: perhaps this capacity is even constitutive of a process' being causal. Even so, the transmission of the mark is not causation itself). Causal influence is propagated along causal lines that proceed along causal processes, i.e. those processes that are capable of transmitting a mark.

the spot is not a genuine causal process. If a particular spot on the wall is altered (for example, if it is painted red), that alteration (that mark) will have no impact on the subsequent color of the light on the wall. On the other hand, a change in the color of the lens through which the light is transmitted will continue to affect the color of the light. The latter is a mark and the interaction between the light and the lens is properly causal. The spot of light moving along a wall can “violate” special relativity’s restriction of travelling faster than the speed of light.⁵³ Special Relativity applies only to causal, not pseudo-processes. A further, illustrative example of a pseudo-processes would be moving shadows. Two shadows can appear to interact with one another, but no causal connection exists between the shadows themselves.

Causal influence has two distinct elements. The *propagation* of causal influence is via causal processes, defined as anything with constancy of structure over time. The second element, which (confusingly for our purposes) Salmon calls “*production*” is explained in terms of causal forks, which can be characterized by statistical forks as follows:

1. **Conjunctive Forks:** we explain the correlations between two events (A and B) that are not directly linked causally by appealing to a third (prior) event (C).⁵⁴
2. **Interactive Forks:** These occur when an intersection between two processes produces modification in both (and an ensuing correlation between the two cannot be screened off by appeal to a common cause). Instead, the interaction is governed by conservation laws. Salmon calls these “*causal interaction*”.

Causal interaction is further analyzed by Salmon in terms of the notion of mutual modification. The principle of causal interaction (CI) states:

⁵³ To be clear, the trajectory from the source to the wall is a causal process. It is the trajectory of the spot that is a pseudo-process.

⁵⁴ Formally: If $P(A\&B) > P(A).P(B)$ holds, look for an event C, such that $P(A\&B|C) = P(A|C)*P(B|C)$.

CI Let P_1 and P_2 be two processes that intersect with one another at the space-time point S , which belongs to the histories of both. Let Q be a characteristic that process P_1 would exhibit throughout an interval (which includes subintervals on both sides of S in the history of P_1) if the intersection with P_2 did not occur; let R be a characteristic that process P_2 would exhibit throughout an interval (which includes subintervals on both sides of S in the history of P_2) if the intersection with P_1 did not occur. Then, the intersection of P_1 and P_2 at S constitutes a causal interaction if

- (1) P_1 exhibits the characteristic Q before S , but it exhibits a modified characteristic Q' throughout an interval immediately following S ; and
- (2) P_2 exhibits R before S but it exhibits a modified characteristic R' throughout an interval immediately following S . (Salmon 1984, 171)

An illustration of this is Hume's example of the two billiard balls colliding. Each ball's movement is a causal process. The two processes interact at contact, altering their trajectories.

Causal interactions produce new causal processes. Production occurs when causal processes interact in a causal interaction.

One concern with Salmon's process theory is that the causal process is defined counterfactually: a process is causal if it is of the sort that *would* transmit a mark in the absence of interference. For this reason, Salmon was unsatisfied with the theory. After Dowe proposed the Conserved Quantity Theory (discussed below) which is free of this problem, Salmon adopted a version of the theory himself. I'll now turn to the Conserved Quantity Theory.

3.1.1.2 Conserved Quantity Theory. The key advantage of the Conserved Quantity Theory (CQ) over Mark Transmission Theory is that on CQ, processes are causal in virtue of actual, rather than counterfactual, features. The theory is best seen as a Causal Process Theory, sharing many of the essential features of the Mark Transmission Theory, but identifying the causal world lines by whatever quantities obey physical conservation laws (in particular, energy and momentum), rather than by the capacity to transmit a mark.

The CQ account identifies the causal processes as those that involve possession and exchange of a conserved quantity. A conserved quantity is any quantity governed by a conservation law

(science tells us what these are).

This analysis is of what it is for a process and an interaction to be causal.⁵⁵ Causality proceeds along world lines that possess a conserved quantity, and causal change (production) emanates from “interactions”, which are intersections of world lines that involve the exchange (Dowe) or transmission (Salmon) of a conserved quantity.⁵⁶

This will not provide all that we need from the theory: still outstanding are the specific nature of cause and effect (is it simply membership in a causal process or is there more to it?) and the question of asymmetry. Some of this will become clearer when we look at the objections.

3.1.2 Assessing Physicalist theories. To see how physical connection theories work, take late preemption: when Suzy’s rock hits the window, it transfers energy and/or momentum to the window. The shattered window absorbs this energy and/or momentum thus establishing the causal connection between Suzy’s throw and the shatter. No such transfer occurs between Billy’s rock and the window.⁵⁷ The same story can be told with world-lines using CQ. Dowe’s account, at least,

⁵⁵ Dowe means this as an empirical analysis, rather than a conceptual one.

⁵⁶ Dowe and Salmon each have their formulation of the theory. Dowe’s formulation:

CQ_D1 A causal interaction is an intersection of world lines that involves exchange of a conserved quantity.

CQ_D2 A causal process is a world line of an object that possesses a conserved quantity.

Salmon’s version:

CQ_S1 A Causal interaction is an intersection of world lines that involves exchange of a conserved quantity (i.e. the same as Dowe)

CQ_S2 A Causal Process is a worldline of an object that transmits a nonzero amount of a conserved quantity at each moment of its history (Each spacetime point).

CQ_S3 A process transmits a conserved quantity between A and B if it possesses a fixed amount of this quantity at A and at B and at every stage of the process between A and B without any interactions in the open interval that involve an exchange of that quantity.

The main difference between these is that for Salmon it is important that the conserved quantity be transmitted (a fixed quantity is transmitted, in the absence of interactions). Dowe objects to the directionality built into “transmitted”, and prefers identity through time of the object in question.

⁵⁷ This might be too quick, since even if Billy’s rock did not impact the window, effects from the rock could presumably have impacted the window: some energy from the rock may have also impacted the window. This feature will emerge again and again in physical connection accounts of late preemption. One possibility is to acknowledge this. Another is to try to distinguish Billy’s throw as not being a difference maker. This would then introduce a two-step process into the causal analysis. A serious worry with this move, apart from its ad hocness, is that once the difference making criterion is reintroduced, it’s not clear that Suzy meets it either (as she too is not a difference maker to the breaking).

should also handle over-determination with ease: the two overdetermining processes converge into a single world line.

Physicalist theories can be understood either conceptually or empirically. Regardless, they will display the identifying features discussed in the previous section: locality (since processes and transfers are spatio-temporally continuous), intrinsicness (as they constitute their own process, independent of events surrounding), and transitivity (casual connection proceeds along the world-lines).⁵⁸ They are “oomphy” if anything is. They also typically rule out omissions (energy cannot be transferred omissively, world lines must actively propagate influence).⁵⁹

This suggests that Physicalist theories get what is needed from a productive theory. What about the desiderata that a Dependence theory has? We’ll talk about omissions in the next chapter. But one concern with production theories that we discussed in Chapter 1 was that not all cases of causation seem transitive. The argument was that production is a transitive relation, but causation itself isn’t (this is one reason we would need a second concept, dependence). Taking the productive theory as the sole causal concept, however, when production is seen as process driven, does a pretty good job eliminating this problem. If we look at the three traditional cases of transitivity failure, I think process theories can handle each.⁶⁰

Dog Bite. There is no connecting process between Sunday’s dog bite and Monday’s detonation with the other hand. So, there is no causation, and hence no failure of transitivity.

Boulder. This case involves an absence (failure of death). As such, on Physicalist theories, it is not a case of causation. If we ask whether the boulder caused the hiker to duck or to be where he

⁵⁸ With transfer this is less straightforward as only part of a quantity is transferred. It matters, then whether the theory requires that some quantity or all of it transfer for causal connection.

⁵⁹ That said, Fair extends his account to absences by running counterfactuals about processes (1979, 246-7). Even so, the need to do this suggests that it is the processes, rather than the counterfactuals, that are causally basic.

⁶⁰ See discussion in previous chapter.

stands right now, the answer might change, but it no longer seems implausible.⁶¹

Switch. This doesn't strike me as a problem for the Process Theorist to concede causation in.⁶²

On the other hand, there are several objections to Physicalist theories, to which I'll now turn. Two major objections to Physicalist theories (Misconnections and Disconnections) are relevant to some extent to all productive theories. For this reason, I handle them in greater detail in a separate section later this chapter. In each section, I will also reply.

3.1.2.1 Circularity.⁶³CQ (and some Transference theories) relies on conservation laws. But conservation laws maintain that a quantity will be conserved in a *causally* closed system. This circularity doesn't seem vicious, though. The causally closed systems are those in which no further quantities of that sort are introduced. The conserved quantities are the ones that are conserved under that very condition.⁶⁴

3.1.2.2 Pseudo-Processes. Can Pseudo-Processes conserve a quantity? If so, the account is not sufficient for causation. An example, by Hitchcock, concerns a moving shadow cast on a metal plate, which has a uniform charge density on the surface.⁶⁵ The shadow is a paradigmatic pseudo-process, but it will possess charge (a conserved quantity). Dowe's reply is that the plate, but not the shadow, possesses the quantity.⁶⁶

3.1.2.3 Asymmetry. Physicalist theories face a potential difficulty with asymmetry. Physical

⁶¹ More generally, the causal connection is to the concrete event that is Boulder's initial roll and Hiker's final position each fully specified. If we put it this way, there is transitivity. The problem arises from the higher-level description of the case as one of "survival". This latter state is disjunctive. There are many possible states that qualify as a survival. Depending on what specifically we are interested in each disjunct, the boulder may or may not turn out to be relevant. But these are explanatory, rather than causal considerations.

⁶² Again, the point being that there is a causal process from the switch to the arrival. Whether as a matter of speech we would call it a "cause", is a different matter.

⁶³ Hitchcock (1995).

⁶⁴ See Dowe (2000, 95). Cf. McDaniel (2002), Choi (2003).

⁶⁵ Hitchcock (1995).

⁶⁶ Dowe (2000, 99).

connection is a symmetric relation, whereas causation is asymmetric. The problem is even more acute with versions, such as Transference Theories, or Salmon's version of Causal Process Theory, that employ the notion of transfer: either "transfer" is understood causally or it is not. If it is, asymmetry is captured, but the account is potentially circular. If it is not, what facts constitute which entity or body transferred the quantity to which? One possibility is to take the time sequence as determinative, in which case the direction of causation just is the direction of time. But if the option is left open for the order of causation to determine the order of time, the asymmetry will have to come from elsewhere. Physical connection theories could simply treat the exchange of quantities as determining *causal connection* (causal connection being a symmetric relation), leaving it open for the direction of causality to be determined by other factors. Asymmetry, however, introduces a more basic question for any theory that analyzes causation on the fundamental physical level, to which I now turn.

3.1.2.4 Fundamental physics (processes are not fundamental). Physicalist theories are supposed to describe causality from the bedrock of fundamental physics, moving upwards. One concern is whether there is causality at the level of fundamental physics. This could be for several reasons. The first, made famous by Russell, relates to the fundamental symmetry of physical law. The second, is a concern that the Einstein-Podolsky-Rosen (EPR) thought experiment puts pressure on its viability.

Russell famously wrote: "The law of causation ... is a relic of a bygone age, surviving, like the monarchy, only because it is erroneously supposed to do no harm".⁶⁷ The Russell objection is a difficult one, whose meaning and status is somewhat controversial. Russell himself seems to have changed his mind on this.⁶⁸ Russell's objection is often portrayed as having three main points: (1)

⁶⁷ Russell (1913, 1)

⁶⁸ See Russell (1948), Chapter 9.

Causation doesn't appear in differential equations; (2) That there is symmetry in the laws of fundamental physics but causation is time asymmetric; (3) The non-locality of causal influence (everything in the light cone is causally efficacious).⁶⁹

EPR suggests that we must abandon either the principle of common cause, allow backwards causation, or allow action at a distance. The latter involves abandoning the locality principle for productive causation. That leaves open the other two routes. Dowe (2000) recommends allowing for backwards causation. Williamson⁷⁰ recommends abandoning the principle of common cause.

The smart money on this matter is that the jury is still out regarding symmetry on the fundamental physical level. But even if the fundamental level is symmetric, the productive theory might be fine making do with a thinner notion of *causal connection* that is symmetric. This sort of connectivity or causal glue⁷¹ still functions as a physical connection and a determining relation.⁷² If the asymmetry is not fundamental, then a theory of physical causation shouldn't say otherwise. In such a case, it would be causal connection, rather than causation, that is the fundamental relation.

3.1.2.5 Special sciences (processes are too low level). If Physicalist theories take causation to be at the fundamental physical level, what relation does this have with high level causal claims, in particular with claims in the special sciences? How does the conservation of energy explain the effects of an increase in inheritance tax on unemployment? We can describe such causal claims in higher level sciences without reference to, much less knowledge of, the causal processes on the physical level.

⁶⁹ Ney (2009).

⁷⁰ Williamson (2005).

⁷¹ Braddon-Mitchell (2017).

⁷² Ney (2009), Kutach (2014).

The Physicalist could bite the bullet and claim that all causation on the non-physical level is merely heuristic or metaphorical. Alternatively, a story about emergent causation on the higher levels could be allowed.

I think the better answer is that causation on the micro level constrains all causal possibilities on the higher levels. All higher-level causation is in virtue of, supervenes on, and is restricted by physical possibility at the physical level. Any purported process that violates physical law (e.g. one in which causal influence travels faster than light or across spatio-temporal gaps) is a pseudo-causal process. This is not implausible. We don't expect a tax increase to affect the price of an object without knowledge of the increase to spread to various micro-economic agents.

A possible worry is that this divorces the epistemology of causal regularities from the metaphysics. We learn about the impact of economic policies without any need to understand, much less appeal to, physical processes, and we understand that a causal attribution has failed by criteria other than failure of physical processes (say, by seeing that the regularities are not robust).

For what it's worth, that, in itself, is not fatal for a metaphysical account. But even this price is not necessary. The link is just less direct than one might have otherwise thought. We learn about regularities and dependencies. Observing such regularities gives us evidence of underlying causal relationships. If robust, these dependencies are grounded in underlying processes. If we cannot find such a process, or if such a process seems impossible, this undermines the causal claim. The connection between the processes and the regularities is still present.

Physicalist theories don't deny that dependence claims are *symptoms* of causal relationships. They do deny a strict one-to-one correspondence between true regularities and causal relationships, but so do regularity theories themselves.

A further concern is that causal explanations in higher level sciences leave out vital information, if couched entirely in physical process terms. It is *fear* that causes people to panic, not

the concrete physical process that realized fear in this instance. To this the process theorist should be willing to concede that type-causal claims in the special sciences might be composed of properties and generalizations that are multiply realizable.⁷³ The problem is that there is not likely to be a physical type that represents something like inflation or a tax-hike. Laws on this higher level may have a more heuristic or general structure and will likely not be causal in the same strong sense as those on the physical level. Structural patterns on the higher level might render certain high-level regularities more likely, such that special science laws can obtain. This will mean that Physicalist theories have little to say about how these work (absent strong psycho-physical laws and/or reductions). This is disappointing, but it doesn't refute Physicalist theories of causation. If true, it merely suggests that the relation between causation and explanation is not as direct as some (e.g. Salmon) had hoped for.

Frustration with Physicalist theories can motivate a more general notion of mechanism, not tied to a particular science like physics. I will have less to say about mechanisms than I do about Physicalist theories. In part, this is because mechanisms are not defined at the fundamental level. As such, I think it is best to see them as complementing a Physicalist theory, such as CQ, rather than replacing it.

3.1.3 Mechanisms. Salmon viewed his own approach as reviving the mechanistic spirit in philosophy. The process theory of causation was the bedrock of the Causal-Mechanical account of explanation. In recent years, an alternative approach to mechanisms, sometimes dubbed the "New Mechanical Philosophy", has emerged, accounting for causation and explanation via mechanisms

⁷³ I don't think the causal process theorist need concede this on the token level. "This instance of fear caused this instance of panic" might be reducible to a purely physicalist claim. The explanatory power of the property causal relationship between the fear token and the panic token could conceivably be an explanatory one without being properly causal. My point, to be clear, is not to commit the process theory to reductive physicalism. It is just to explore how much room the theory has to maneuver in the face of challenges of this sort.

somewhat differently from Salmon.⁷⁴

On mechanistic theories of causation two events are causally connected if and only if they are connected by an underlying physical mechanism of the appropriate sort:⁷⁵

A mechanism underlying a behavior is a complex system which produces that behavior by of [sic] the interaction of a number of parts according to direct causal laws. (Glennan (1996, 52))

In an influential paper, Machamer, Darden, and Craver characterize mechanisms as:

[E]ntities and activities organized such that they are productive of regular changes from start or set-up to finish or termination conditions. (Machamer et al 2000, 3)

The entity acts as a cause when it engages in a productive activity. Objects are causes only in a derivative sense: “It is not the penicillin that causes the pneumonia to disappear, but what the penicillin does”.⁷⁶

Unlike Causal Process Theory, which identifies causal-mechanical processes at the fundamental, physical level, the mechanist approach is “higher-level” only.⁷⁷ Causation occurs on the level of *complex systems*, which produce phenomena via the interacting of the parts. These mechanisms bottom out at the fundamental level with laws of fundamental physics, which defy further mechanical decomposition, but the vast majority of causal reasoning takes place above this level.

3.1.4 Assessing Mechanisms. Whether mechanistic accounts contain the typical identifying features of productive accounts more generally, depends on the specifics of the mechanistic account. Intrinsicness seems to be a feature, as causation depends simply on the presence of a mechanism.

⁷⁴ Not all Mechanists think that causation itself is mechanistic. See Craver (2007, 86).

⁷⁵ Glennan (1996), Ney (2009), Williamson (2011).

⁷⁶ Machamer et al (2000, 6)

⁷⁷ The New Mechanists and the Salmon-Dowe Conserved Quantity theories are not necessarily incompatible. Reconciliatory programs between the two include Glennan (2017) and Dowe (2011). On Dowe’s (2011) account, mechanistic causation is the transmission of conserved quantities within and by a mechanism, and so an ontic explanation is provided by the elucidation of a causal process mechanism when the propagation of the conserved quantities through the mechanism can be traced.

Mechanisms should be local, but the internal workings of a mechanism might not be. The same goes for transitivity, oomphiness, and the lack of omissions.

A common criticism of this account is that it is uninformative and insufficiently reductive, as the analysis relies on causation.⁷⁸ A further worry is whether the account can make do without use of difference-making counterfactuals. The ability to do this will depend on how robust the account of causal production is.

One possibility is to use the Conserved Quantity Theory for production on the fundamental level, with mechanisms being composites of such causal processes.⁷⁹ In this regard, they will inherit the same properties that CQ theories have in terms of Hall's three theses (Intrinsicness, Locality, and Transitivity), in terms of oomphiness, and in terms of omissions. Pure omissions cannot be mechanisms, but mechanisms can operate in ways that might allow for absences and gaps. This feature will be discussed later in this chapter when discussing Schaffer-cases. As such, there might be omissions and lack of oomph *within* the mechanism, with the mechanism itself providing the active, oomphy causal connection.

3.1.5 Assessing Physical Connection theories generally. As we have seen, Physical Connection theories come in different flavors. They all share some notion of actual connection (cashed out in different terms) between cause and effect in physical reality. They thus flesh out the intuition that causal connection is via mechanism, that it is local, positive, and oomphy. Whether the physical connection is better seen as an analysis of the concept of causation or as an empirical analysis of production is left open. This is enough, however, to make these theories prone to a set of objections (from misconnection and disconnection) to be discussed at the end of this chapter.

⁷⁸ Kistler (2009), "each step of the analysis makes essential use of 'cause'" (599-600).

⁷⁹ Ionanides and Psillos point out an ambiguity in mechanistic theory between "mechanisms of" and "mechanisms for". The mechanists often speak of the latter, referring to a mechanism's output whereas the Salmon-Dowe style mechanism is a mechanism of. The point is that a "mechanism of" needn't be "for" anything. Similarly, a "mechanism for" needn't be composed of causal mechanisms at all.

I turn now to two other types of productive theories that do not place the physical connection at front and center. This doesn't mean that they are incompatible with a view that causation always is by mechanism, but rather that they find the centrality of the productive notion elsewhere.

3.2 Primitivist and Other Non-Reductive Theories

A further view of productive causation treats causation as a singular, non-reductive relation. Such a view would arguably not be mechanistic, since mechanistic views consist of parts or components and their interrelation, whereas a primitive causal relation, treating causation as fundamental, should be simple, or at least will not be composed of further parts. If causation is a simple, primitive relation, there are no parts to interrelate.

Non-Reductionist Singularism holds that even after specifying all events that occur, and all the fundamental laws governing the events, still left out are the facts about what causes what.⁸⁰ In other words, the causal doesn't reduce to (and might even fail to supervene on) the non-causal.

*Primitivism*⁸¹ is the view that some basic causal statements are not further analyzable in non-causal terms.⁸² Sometimes the view relies on the argument that causal states of affairs are observable or are otherwise knowable by acquaintance.⁸³

That these two are not the same is illustrated in Tooley's view. Tooley argues for a non-reductionism that still allows causation to be analyzed. For Tooley, causation is a "theoretical concept", characterized by means of appropriate theories and postulates. In other words, it can be analyzed through Ramsey sentences. As such, singular causation is an irreducible relation between particular states of affairs, but not supervening on causal laws (or, for that matter, even requiring the

⁸⁰ Unless, the laws themselves are irreducibly causal.

⁸¹ This term is found in Ehring (1997, 52).

⁸² See Anscombe (1971).

⁸³ Anscombe claims causality is a matter of "deriving from or arising of" so that no corresponding universal generalization is implied by "*c* causes *e*" on a particular occasion. Tooley (1987) interprets Anscombe as possibly claiming that causation is a relation between concrete individuals.

existence of causal laws at all). Tooley's view, which he dubs "causal realism", is that "the truth-values of causal statements are not, in general, logically determined by non-causal facts".⁸⁴ Here is an example (using probabilities) from Armstrong:

A case that Lewis does not consider, but which brings out the strength of the Singularist position here, is one where there are two possible probabilistic causes of just one effect, and the chance of each possible cause being the actual cause is equal. (Perhaps with a multiplication of the two chances giving the chance of an overdetermination.) Suppose that there are two bombardments of an atom, with the same chance of the atom emitting a particle, which the atom duly does. Does there not seem to be an objective question, which of the two bombardments actually did the job? (2004, 450)

On the other hand, there are also *reductive* Singularist accounts, such as that of Ducasse, for whom causation is a perceivable relation between particular events, without a general component. A cause of a particular change *e*, in a situation, was the preceding change *c*, which alone occurred in that situation immediately preceding *e*.⁸⁵ For example, the striking of a match caused it to light by virtue of the fact that the striking was the only change in the circumstances that preceded the lighting.

The advantage of views of a primitivist or non-reductive bent, is that one gets the desired features of causation for free. On the other hand, it is difficult to do much to provide arguments for or against these Hallian features. Causation's being transitive, local, intrinsic and oomphy is just a basic fact about the causal relation. Omissions are a bit more complicated. Armstrong, as will be recalled, thinks that omissions are clearly secondary additions to the "great causal net".⁸⁶ But since Primitivist and similar accounts get their features for free, there is no obvious reason why an account of this sort couldn't include omissions.

⁸⁴ Tooley (1987, 246).

⁸⁵ The full statement is "Considering two changes, *C* and *K* (which may be either of the same or of different objects), the change *C* is said to have been sufficient to, i.e. to have caused, the change *K*, if:

- (1) The change *C* occurred during a time and through a space terminating at the instant *I* at the surface *S*.
- (2) The change *K* occurred during a time and through a space beginning at the instant *I* at the surface *S*.
- (3) No change other than *C* occurred during the time and through the space of *C*, and no change other than *K* during the time and through the space of *K*." (Ducasse (1993, 127))

⁸⁶ Armstrong (2004, 448). See discussion in Chapter 1.

3.3 Sufficiency or Determining Theories of Causation

I discussed sufficiency accounts briefly in the previous chapter, characterizing them as a type of dependence or difference making view. But, depending on how it is understood, sufficiency can also potentially be seen as productive. Hall, in fact, recommends sufficiency as the best understanding of his “Blueprint” strategy for production. Sufficiency is also invoked by Armstrong as a primitive relation between universals.⁸⁷

Sufficiency is generally understood as a theory of general or type causation: the truth maker of the token causal claim is the truth of the general claim (that type C events are lawfully sufficient for type E events).

Sufficiency itself needs to be cashed out carefully. What sort of sufficiency? Clearly not logical sufficiency. When we speak of regularities, we might just have universal succession. But even here, this will depend on how specifically we describe the scenario: describe it too generally and nothing is sufficient, describe it too specifically and every event is, as universal succession becomes trivial.

Some mid-range level of specificity is required. At this mid-range level, there will always be a possibility of some interfering circumstance that breaks the regularity. Bullets kill, but not if they are removed in time, or if the victim wore a bullet-proof vest. We generally need a *ceteris paribus* modifier or a stipulation along the lines of “in the absence of interfering factors”.

A further complication, which I set aside for now, is what sufficiency looks like for indeterministic causation.

The most common understanding of sufficiency accounts is as a “minimal sufficiency” account, specifically a version of Mackie’s INUS conditions.⁸⁸ Causes need be neither necessary nor

⁸⁷ Armstrong (1983). The relation is defined as nomic-necessity.

⁸⁸ A condition that is Insufficient but a Necessary part of a condition which is itself Unnecessary but Sufficient.

sufficient for their effects, but they must be necessary to the set of circumstances jointly sufficient for the effect. The account will be productive, only if the sufficiency condition is understood productively. A productive notion of sufficiency would need to go beyond mere regularity: the cause is sufficient for the event in the sense that it made the event happen, or made it such that the event had to happen (or determined that the event had to happen). An account like this would likely evoke the laws of nature to account for this making.⁸⁹ It could also evoke physical connections. Interestingly, Hall's formulation is largely silent regarding what the productivity must involve.

3.3.1 Hall's "Blueprint" strategy. Hall's Blueprint is designed primarily as a solution to Late Preemption. Its target, if successful, would be a reductive account of productive causation. The account has some features in common with Lewis' Quasi-Dependence account, but it differs in aiming for an account in terms of sufficiency rather than counterfactual dependence.

For a set of occurring events S , all occurring at time t , to suffice for some later event e , it must be true that "if only the events in S had occurred at t , then e would still have occurred".⁹⁰

This strategy relies on the intrinsicness of production. The idea is that we can locate a possible process, that is a duplicate of the process in question, where causation clearly obtains between c' and e' . The Blueprint strategy says if *that* process is causal, then so is any structurally identical process (i.e. so is the process between c and e).

For Lewis, this was a relation of quasi-dependence. Causation was intrinsic to a process. The process has a duplicate in which causal dependence obtains, therefore it is causal. But if we revert to Lewis' version, the account is parasitic on the counterfactual dependence account: in order for the blueprint to be causal it must contain at least a possible manifestation in which there is dependence.

⁸⁹ This seems to be Maudlin's (2004) ultimate verdict, given that the world is non-Newtonian. Ultimately, it is world-states that are sufficient for others, given the laws that constitute the determining relation. A similar account, in terms of laws appears in Strevens (2013) and Kutach (2014, 92-97). The determining relation as constitutive of causation is defended by Kment (2010).

⁹⁰ Paul and Hall (2013, 51).

If it does, all identical processes are causal too. So, it looks like production cannot be specified without assuming the causal bona fides of dependence.

In order to get a sufficiency account out of this, we need to alter what it is that makes the duplicate process (for example, the one with Suzy alone, without Billy) causal. Rather than taking the counterfactual dependence of the breaking on Suzy's throw as constituting the causal connection, the Sufficiency theorist takes the sufficiency of the throw as constituting it instead. In the case of Suzy alone, her throw was suitably sufficient for the breaking, and therefore clearly caused the breaking. Since the chain of events leading from her throw to the breaking is a duplicate of the chain of events leading from her throw to the breaking in the case where Billy is present (with this throw preempted), the Intrinsicness thesis gets us to the desired verdict. This is what Hall calls the "Blueprint Strategy".

The account is tailor made to get Intrinsicness, Locality, and Transitivity. And it is tailor made to not be committed to omissions. What the account lacks, is a commitment to oomph. This, too, is by design. While it is plausible that any intrinsic, local, and transitive relation in this world will have oomph, Hall follows Lewis in viewing such a feature as insufficiently general or reductive.

One problem with this account is that it lacks a metaphysical story. Causation by production just is the meeting of a blueprint that is causal by other criteria. Intrinsicness is to a process,⁹¹ but what makes a process *productive* is not really clear (other than the meeting of the three truisms). The process is causal intrinsically because it has a blueprint in which causation obtains, either through counterfactual dependence (Lewis) or sufficiency (Hall). Even if sufficiency captures the concept of productivity, no account of how causation in the objects is given thereby. Perhaps this is fine: we can give an empirical biff-like account of what things in the world deliver sufficiency relations.

⁹¹ Or to a "set of occurring events".

3.3.2 Mackie Remixed a la Strevens. Strevens suggests taking Mackie's INUS condition's notion of sufficiency as one of "causal entailment". An INUS condition will be any condition that is a member of a set of obtaining conditions whose joint presence (together with the laws) entails the effect, but the absence of which cancels the entailment. "Absence" in these cases is not negation. This is where the account differs from the standard (Lewis-Stalnaker style) counterfactual account.

On both the INUS and standard counterfactual accounts we begin with the chain of actually occurrent events. To test sufficiency, we subtract the putative cause, but what this means differs from the standard counterfactual account. On a standard counterfactual account, when a condition is subtracted, this means that it is negated. To see what is true, in such a case, we move to the closest possible world in which that condition is false, thereby substituting for the negated condition whatever is true in that world. Not so with *causal entailment*. Rather, what occurs with causal entailment is that we simply remove the assertion of that condition (rather than negating the condition), leaving open the entire range of possibilities concerning the removed factor and ask if the consequent would still follow (given the remaining conditions plus the causal laws). If the answer is negative, then the condition is an INUS condition. Thus, if you want to know if poisoning the king was sufficient for his death, you subtract the poisoning and ask: would the remaining conditions in the world have been sufficient for the king to die? You do not insert in its place that the king was stabbed (even if there was a backup assassin who would have stabbed the king had he not been poisoned).

In other words, in Lewis-Stalnaker semantics for counterfactuals, you negate c and move to the closest non- c world. In Mackie's version, you simply remove the assertion of c and see what's left.

But this account is not intended as a productive one. It relates the difference that conditions

made to a putative effect. It relates states of affairs, not concrete events.⁹² Concrete events are individuated by every intrinsic detail (for example, the exact position of each molecule of the poison), whereas states of affairs have coarser graining (for example, that it was poison). INUS conditions for concrete events are cheap. Redundant causes will be INUS conditions if the effect is individuated too finely. But Mackie's account is a coarse-grained account looking at what difference the conditions made to the coarse-grained state of affairs.

Still, an account like this might take sufficiency to be what grounds causality on the concrete level as well, using INUS conditions to then sort out, from among the actual causes, which causes are the difference making causes. This, then, would involve a *two-step process*: first, at the concrete level, spelling out the causal web of influence; next, at the coarse-grained level selecting relevant causes for an explanation. For either of these levels (or both), sufficiency could do the work required.

A sufficiency account on the concrete level would individuate causal processes. These would be transitive because sufficiency is transitive. They would be local and intrinsic on the concrete level, but not necessarily on the higher level. Oomph, too, would be a concrete level phenomenon, only on the assumption that the fundamental analysis of causal influence is oomphy. Strevens' analysis tends this way, due to its reliance on the notion of causal-sufficiency, rather than mere regular succession.

Nomic sufficiency, if it is productive, should preclude omissions. Sufficiency accounts frequently include omissions. The shooting is sufficient for the death, for example, only if the bodyguard fails to jump. As I've argued before, however, this might not be necessary. Nothing is sufficient for anything at all without holding all potential interferers constant (so for any c that is sufficient for e , it is only sufficient for e assuming that d doesn't interfere). So all negative conditions

⁹² Terminology dating to Hempel (1965).

can be moved to the general “no further conditions” clause. None are more central than the others. As such, I think it a mistake to view these negative conditions as part of the INUS set in the first place. Better to treat the positive conditions only as the INUS conditions, in which it is understood that a set of conditions is sufficient, only on the assumption that nothing interferes. In other words, the set of positive INUS conditions, just is the INUS set, where sufficiency is understood as “sufficient, assuming no interference”. This would kick omission out.

So accounts of purely positive conditions that are nomically sufficient can be productive accounts.

It might be worthwhile distinguishing between two claims the sufficiency theorist might be making:

- i. Causation *consists* in a (suitably qualified) sufficiency condition.
- ii. Causation *involves* sufficient conditions.

The latter won't be a reduction of causation to sufficiency, rather it renders sufficiency as a feature of being caused (sufficiency is a necessary condition of causation): if *c* caused *e* then *c* is/was an INUS condition of *e*.

Finally, it is worth pointing out that Physical Connection and Sufficiency accounts could be complementary as separately answering Mackie's two questions: Sufficiency might capture the *meaning* of causal statements with Physical Connection theories capturing what in the world delivers it. On this version, the way in which A suffices for B is by producing it through a process or mechanism.

If for a Sufficiency account to be sufficient we require the actualization of a complete spatio-temporal process, the accounts are likely to be coextensive. The Physical Connection account will have the advantage of not necessitating the effect (so perhaps it can better handle component causes and chances), whereas the sufficiency account will not be metaphysically committed to particular

realizations of the underlying causal mechanisms.

A particular advantage of sufficiency accounts is that they better handle the misconnection/relevance problem, discussed in the next section. As we shall see, production accounts face difficulty with conditions that affect the process without making a difference to the outcome. For example, chalking a billiard ball before striking it is causally connected to the ball's landing in the hole. But it doesn't seem to be a cause of this. For a sufficiency account, the problem doesn't arise, because the chalking of the ball is not an INUS condition, it is redundant.

4. Two Major Objections to Production Accounts

I now turn to two major objections to production accounts. These objections are especially acute for physical connection theories, and particularly for process theories. They apply, to some extent, to productive nomic sufficiency accounts as well. Presumably, they can be avoided with primitivist accounts, by fiat.

The two problems are often referred to as those of Misconnections and Disconnections.

Misconnections suggest that productive causation is cheap. A process theory rules in too many causes, since anything within the effect's past light cone could have exerted some influence on the effect. Sufficiency accounts have this problem as well, especially if they relate concrete events.

Disconnections suggest that productive causation rules out too much. The traditional concern is omissive and absence causation. Of particular concern are cases that seem paradigmatically causal in the active sense, but involve no direct physical connection between the cause and effect.

4.1 Cheap Causation/Misconnections

On the Causal Process Theory, any event connected to the effect via a causal process is a cause. The problem is that events whose connection seems frivolous to the effect (i.e. events which made no difference) are technically causes. Unless the process theory has means to rule out irrelevant

causes, or at least to assign them a comparative weight, the theory has some extremely unintuitive consequences. Similar objections can be raised for Transference as well as for Sufficiency theories that relate concrete events.

4.1.1. The Chalk mark example. Take a chalk mark placed on a billiard ball just before the strike. Chalking the billiard ball and the ball's going into the hole are connected by a causal process. Does it follow then that chalking the ball before striking it caused it to go into the hole?⁹³ We want to say that striking the ball, but not chalking it, caused the ball to go in, but both are connected to the effect via a physical process. More generally, the concern is that the feature that makes a process causal tells us nothing about which features are causally or explanatorily relevant to the outcome.⁹⁴

4.1.2. Response. Salmon, in response to this case⁹⁵, toyed with a two-part theory of causation, in which a difference-making relation (in Salmon's account it is a probability raising requirement) is amended to the CQ account. He termed the fundamental (productive) notion "aleatory causality" and the secondary (difference making) notion "statistical causality". It is not clear if Salmon's account is meant as an account of causation proper or of causal explanation. For our purposes, this distinction is of utmost importance. Accepting the distinction on the level of causation would reintroduce the very pluralism we are arguing against.

The proper response to this objection comes in three forms. The *first* diverts the problem to the theory of explanation, rather than causation. The *second* denies that misconnections properly

⁹³ Hitchcock (1995) and Woodward (2003).

⁹⁴ Woodward (2003, 357). Notice that for dependence accounts, examples like this pose no challenge: the ball's going into the hole is not counterfactually dependent on the chalking; the probability of going into the hole is not higher, conditional on a chalking (at least not on the general level); there is no regularity between chalking and going into the hole; intervening on the chalking wouldn't change the outcome. In each, it can be shown that it is the striking, upon which the result (going into the hole) depends. Sufficiency accounts capture this better: it is the striking, but not the chalking that is an INUS condition for the coarse-grained event of going into the hole (otherwise, we should concede that it's a cause and the counterexample fails to persuade). This is not true, however, for the concrete event, which is impacted by the chalk mark. A Kairetic account of explanation (Strevens, 2008) would either eliminate the chalk mark or not from the explanation, depending on which event we need to explain (the concrete or higher-level). In this, the example is unthreatening.

⁹⁵ Salmon (1997, 476) and (1998, 205).

characterize causal connection. The *third* rejects, or goes beyond, Physicalist theories, seeking a solution in other productive theories. Let us look at each in turn.

4.1.2.1 Relevance is explanatory. On this response, “relevance”, more generally, and causal relevance, in particular, is a feature of explanation. We would not explain the sinking of the black ball by reference to the chalk mark.

Does this mean that the chalk mark caused the sinking? Maybe. But this is not a successful locution. Perhaps we should be happy to concede that (contra Dowe)⁹⁶ the chalk mark and the sinking of the black ball are *causally connected*. It would be misleading to say that the chalk mark “caused” the sinking, but this might be a version of the Millian point.⁹⁷ The striking of the ball and the chalking are both causally connected, and thus are productive of the sinking. On the other hand, the lack of interference on the part of the other player is not. Causality exists between the irrelevant chalking and the sinking. Put this way, the awkwardness diminishes.

Perhaps there is more to say. For example: in cases like this we can quantify the degree of influence that each interaction had on the outcome. This would be explanatorily helpful. Is there a sense of degree of causation too? This is an interesting question, I don’t have an answer for.⁹⁸

The point can be seen if we individuate the event more fine-grainely. Once we do this, it is not nonsensical to imagine the chalk exerting a fair amount of influence on the specifics of the outcome. The concrete event of the ball’s falling into the hole when and where it did is affected by the chalk.

This presents an interesting set of choices: suppose that even the concrete event is not

⁹⁶ See discussion below.

⁹⁷ Strevens (2008) argues that there are two senses of “causation”. More importantly, he argues this whilst denying Hall’s pluralism. On Strevens’ view “is a cause of” is not (usually) a claim of fundamental metaphysics (of which production is the correct account), but, rather, is a claim of causal explanation (captured by the correct account of difference making).

⁹⁸ But see: Moore (2009), Kaiserman (2016) and (2018).

affected,⁹⁹ does that impair the chalk mark's causal (as opposed to explanatory) status? If it does, we're working with an account that takes difference-making as necessary for causation, only that the difference-making is of concrete events.¹⁰⁰ On the other hand, the process theorist should stand his ground here and insist that, at least conceptually, even if no difference is made at all, causality exists so long as there is a continuous causal process to be traced.

When looking at the concrete event, the problematic nature of the example shrinks, especially if it made a difference at that level of resolution. The higher-level, coarse grain event ("going into the hole") is a disjunction of many possible concrete events. The chalking caused one of them. Still, this seems unsatisfying. The chalking in no way contributed to the aspect of the event that is the going into the hole. But perhaps this is really just an explanatory point: the process theory (or any other physical connection theory) lays out the causal structure in terms of physical connections in the world. The secondary question: which aspects of this process are responsible for which aspects of the outcome is no longer a question about the metaphysics of causation, but about explanation itself.¹⁰¹

Yablo's idea of proportionate cause¹⁰² is helpful here as well. The chalk mark is not proportionate to the effect of the ball sinking. It is proportionate to the fine-grained effect we might want to explain, should that be of interest. But this just highlights that proportionate causation is an explanatory notion, not a causal one.

4.1.2.2 Denying that misconceptions are causal connections. Dowe distinguishes between causal connections and causal processes. There is more to causal connection than being connected

⁹⁹ Due to its being cancelled out by some other non-difference making cause. Switching cases might be a case like this. In such a case, each of the two cancelling causes is a difference maker given the other.

¹⁰⁰ Strevens (2008) mentions this as a candidate metaphysics for productive causation (or for "causal influence").

¹⁰¹ This would be reinforced if we accept the Davidsonian point about the relata of causation as events, versus the relata of causal explanation as facts.

¹⁰² Yablo (1992) and (2002).

by a process. In particular, what relates events causally is connection along a process governed by a single law of nature:¹⁰³

Causal Connection: Where a and b are objects and q and q' are conserved quantities possessed by those objects respectively, there is a causal connection (or thread) between a fact $q(a)$ and a fact $q'(b)$ if and only if there is a set of causal processes and interactions between $q(a)$ and $q'(b)$ such that:

1. any change of object from a to b and any change of conserved quantity from q to q' occur at a causal interaction involving the following changes: $Dq(a)$, $Dq(b)$, $Dq'(a)$, and $Dq'(b)$; and
2. for any exchange in (1) involving more than one conserved quantity, the changes in quantities are governed by a single law of nature.¹⁰⁴

The account, if successful, states when two events (or facts) are related causally, eliminating the irrelevant causal factors. It is this that we need to isolate before we call one the “cause” and the other the “effect”.¹⁰⁵

The analysis would need to be expressed in a more general form for cases where there are more than two objects involved along the nexus of causal processes and interactions. The account’s solution to the chalk mark, however, is questionable, since we need to translate “chalking a ball” into a state involving a conserved quantity.¹⁰⁶ On the other hand, the solution does explain, why, e.g. a tennis ball’s heading towards a wall is not the cause of the wall’s being stationary:

[B]ecause although there is a set of casual processes and interactions linking the two events, there is a change of object along the ‘thread’—ball to wall—yet the wall undergoes no change in momentum, which it needs for the set of causal processes and interactions to count as a causal connection on this definition.¹⁰⁷

A solution like this requires the ability to individuate laws of nature. This solution gets more difficult for higher-level causation. It is not clear, however, that this distinction between causal connection where it is proper to deem something a “cause” and otherwise, is best understood as a

¹⁰³ Dowe restricts the relata to facts for this analysis. He does this for purposes of convenience and simplicity.

¹⁰⁴ Dowe (2000), sec 7.4.

¹⁰⁵ As an account of “causal connection” it will not distinguish causes from effects. For that, other considerations are needed.

¹⁰⁶ Dowe (2009, 207).

¹⁰⁷ Dowe (2009, 207-208).

metaphysical matter. Perhaps the solution is to see the issue as one of explanation.

4.1.2.3 Non-Physicalist accounts. Alternatively, a possible response is to move beyond a (purely) Physicalist account of production. Mechanisms, INUS conditions, and Primitivist relations might fare better. The solution for INUS accounts would be to render the chalk redundant to the sinking (even if not redundant to the concrete circumstances of sinking). The Mechanist will argue that there is a causal mechanism isolatable between striking the ball and the sinking, of which the chalk mark forms no part.

4.2 Disconnections

Unlike Misconnections which involve cases of connections that are not causal, the problem of Disconnections involves cases that seem obviously causal but that lack a proper connection. The problem emanates from the elimination of absences and omissions from the causal. I will discuss omissions more extensively in chapter 3, where I analyze omissions more carefully, offering an account, using a counterfactual notion of “quasi-causation” I borrow from Dowe, of what is involved in our attributions of certain outcomes to omissions for the purposes of explanation and responsibility. As said, my claim will indeed be that omissions are not causal. Causation is a natural relation, that properly excludes the omissive. If this account is correct, standard productive causation is all there is to causation, and omissions and preventions and the like are dealt with “quasi-causally”, via counterfactuals about possible causation.

4.2.1. Schaffer cases. Things unfortunately are not so simple. Jonathan Schaffer has argued that many purported cases of standard “garden-variety” causation, paradigmatic actions, are, on closer inspection, cases of double prevention. While some causal connections can be “wired” by physical connection, others consist in disconnecting something blocking the effect. The general strategy is to show that production, and in particular if defined by physical connection theories,

cannot be the right criterion for causation, because this would remove from the causal some of the very paradigmatic cases that are causal, if anything is. I'll give some of Schaffer's examples and offer what I think the best solutions available to production accounts are. In some cases, biting the bullet is acceptable. In some, the production theorist can resort to black-boxing. The move from processes to mechanisms also provides an attractive solution to some of these. In others, I think these cases require rethinking the causal status of double preventions. But first we need to get clearer on the examples and just what challenges they present.

Imagine an explosion device wired such that pressing the button disconnects an electrical current that was inhibiting an independent source from triggering the explosion¹⁰⁸:

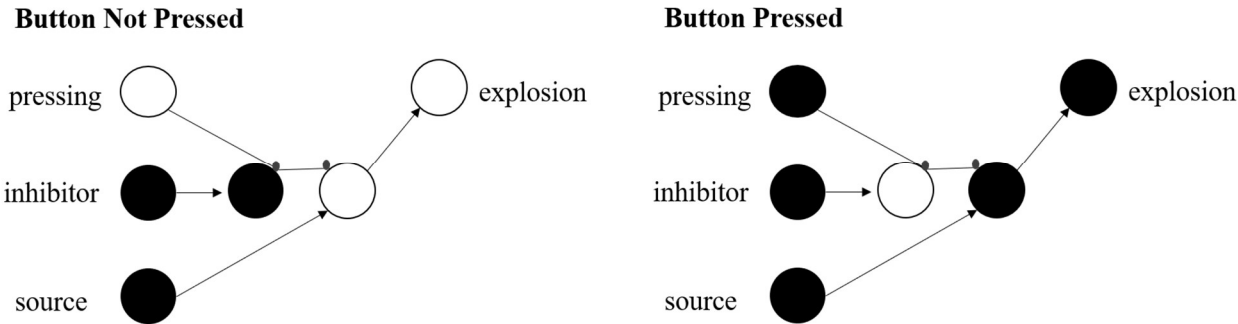


Figure 2: Schaffer's Explosion Device

In this case, there is no physical connection between the pressing of the button and the explosion. What looks like a case of standard productive causation turns out to be a case of double prevention. Pressing the button prevents the inhibitor from preventing the source from triggering the explosion. Yet, surely, we would all admit that pressing the button caused the explosion.

¹⁰⁸ Diagram based on Schaffer (2000a, 286). In this diagram, as in neuron diagrams more generally, read the diagram chronologically from left to right. The colored circles are actual events, the white circles denote that the event didn't materialize. Arrows denote the enabling or firing of the condition following it; lines terminating in a small black circle denote inhibiting conditions. So if two nodes are connected only by an arrow, then a colored circle in the left node will be followed by a colored circle in the right. Two similar nodes connected only by an inhibitor will display a colored left node followed by a white right node (since the first event inhibits the second), and so on. This way, counterfactual dependence of complex cases can be more carefully displayed. When asking what would have happened but for event c, simply change c from a colored to a white node and reconstruct the diagram using the arrows and inhibitors moving forward (i.e. without backtracking).

Cases like this are not as fanciful as they might seem. Many cases are like this. Suppose that A shoots Victim in the heart, leading to his death. This would seem to be paradigmatic physical causation. On closer inspection, however, the bullet which pierces Victim's heart causes death by disconnection. The brain is kept alive by an influx of oxygenated blood, and heart piercings cause death by disconnecting this influx, allowing oxygen starvation to run its course.

Pulling the trigger is a cause of the firing of the bullet through the victim's heart. But this too is by disconnection. The spring is kept coiled by the sear, and trigger-pullings cause bullet firings by disconnecting the sear, allowing the spring to uncoil (propelling the striker onto the powder, compression of which produces the explosion which propels the bullet).

A similar process connects the killer's getting angry and his pulling the trigger (nerve signals cause muscle contractions by disconnection).

Whether Schaffer's description of these cases is right, the point is clear: causal mechanisms can be wired this way. Does their being wired this way affect their causal status? If causal connections require physical connection, must the process theorist deny causation in these cases?

For Schaffer, the lesson is that the process theory is hopeless. Physical processes exist, but they are only one case of causation. In addition to causation by connection there is also causation by disconnection. So physical connection cannot be necessary for causation. The analysis of causation must be elsewhere:

Causation by disconnection is causation full force, involving all the central connotations of causation such as counterfactuals, statistics, explanation, inference, agency, and responsibility, involved in even the most paradigmatic cases of causation including all instances of human action, and involved in the most theoretically salient cases of causation relevant to the analyses of reference, decision, and perception. I cannot see a stronger argument that anything is causal.¹⁰⁹

¹⁰⁹ Schaffer (2000a, 289)

4.2.2 Responses. Several options present themselves.

4.2.2.1 Bite the bullet. One is to bite the bullet and say these cases are not truly causal after all. This is not necessarily a problem: we have an account of quasi-causation available and it is clear why explanation, prediction, and rational planning might accord just fine with these.¹¹⁰ The “connotations” that Schaffer lists are in fact, dependence-based desiderata, rather than purely causal ones. This seems to be Dowe’s favored approach.¹¹¹

For what it’s worth, while the result is deeply unintuitive, I don’t think that, as a matter of pure metaphysics, this approach is completely hopeless. It would still be true, for instance, that all causal dependence supervenes on actual physical processes. The gun might be wired in a quasi-causal manner, but that doesn’t change the fact that the actual goings on in the gun, upon which the mechanism of the gun depends, are all bona-fide physical causes. Since absences and the like can explain,¹¹² this rendering doesn’t leave the firing of the gun as an uncaused miracle. It just means that the mechanism is complicated and consists of several manipulations in the world depending on each other.

The deeper problem I think is with the moral case: as my account in later chapters will show, the distinction between causation and quasi-causation is important because it marks a distinction in terms of moral responsibility. We acquire prima facie responsibility for that which we caused, but only acquire responsibility for that which we quasi-caused if there existed a prior duty. This also suggests that preemption and similar causal redundancies can defeat responsibility for quasi-causation (which requires counterfactual dependence) but not for actual causation. Additionally, we can have stronger duties ex ante not to cause harm than not to quasi-cause harm, at least if the

¹¹⁰ See detailed discussion in Chapter 3.

¹¹¹ Dowe (2001) argues that sometimes there is an “epistemic blur” between causation and quasi-causation and that this doesn’t matter for most cases.

¹¹² Via dependence on actual causes.

Doctrine of Double-Effect is true. If I am right, then it matters a great deal whether these are cases of causation or quasi-causation.

This route is still open for the moral case, if one is willing to bite the bullet whole hog, as it were, claiming that, for the moral case, it matters whether the gun is wired via a mechanism involving double-preventions. This would be quite a concession.

4.2.2.2 Black-boxing. Another option is to concede that the Transference and Causal Process theories fail here, but that this doesn't mean that it's not production. Remember, production as a causal notion is broader than mere processes. Perhaps these cases show that not all production is via connection or process. It is not implausible to say that I produce the result, even though the process is disjointed or complex.

It is tempting to treat these black box cases as closed systems of a certain sort. Perhaps on one level of abstraction, outside the closed system, I can produce result R by invoking the system, independently of how the system itself goes about guaranteeing that result.¹¹³

What justifies treating these systems as closed? Note that in cases like this, the various processes are not independent.¹¹⁴ These cases are different from one in which A left a door open and then something else happened to go through it.

Two ways to approach this suggest themselves.

4.2.2.2.1 Disconnection as production. On the first, *disconnection itself* might be a form of production. At least in cases that are held in some form of equilibrium,¹¹⁵ disturbance to this equilibrium could be a productive step, whether or not conserved quantities are transmitted.¹¹⁶ This

¹¹³ Maudlin (2004) invokes something like this. His point, however, is that we are tracking lawlike regularities, not necessarily causal ones.

¹¹⁴ There are lawlike, probabilistic, and even straightforwardly causal dependencies between the various components.

¹¹⁵ Certainly, if the equilibrium is a physical one.

¹¹⁶ In fact, in some cases of disturbance, a conserved quantity will in fact be transmitted after all. For instance, if a trap door is opened under V there is still a causal process connected by conservation of energy.

approach doesn't require distancing from the mechanism, it just understands disconnecting as a form of production.

4.2.2.2 Mechanism as a whole. A second approach looks beyond the particular components of the mechanism to the *mechanism as a whole*. The gun, or the heart, is a mechanism, which, as a whole, produces the effect.¹¹⁷ This account, if workable, might recommend the Mechanism approach as superior to the Conserved Quantity approach (at least for macroscopic causation). Care is needed in determining whether the mechanism can be specified in a manner that is not interest relative. That the gun as a whole is a mechanism designed for releasing a bullet and is an effective means towards doing so is one thing. But to say that this itself warrants treating the case more like physical causation might be question begging.¹¹⁸ Still, I think that the account is suggestive.

4.2.2.3. Double-Preventions are causally heterogeneous. What both previous solutions (disconnections as productive and turning to mechanisms as a whole) suggest is that we might be too quick in treating all double prevention cases alike. The case in which *c* and *e* are connected by a mechanism (even if the mechanism consists of negative connections) might be importantly different from cases where what connects them is mere counterfactual dependence. The former is more plausibly causal, due to this mechanism, than the latter.

I'd add further that double prevention, and prevention too, are different, in this regard, from mere omission. In cases of prevention and double prevention, there is a causal process about. The disconnection is between the process and the "effect" or state of affairs. The question then arises to

¹¹⁷ This account is explored by Glennan (2017 198-199), arguing that the mechanism as a whole relates events in a manner that is intrinsic. This sounds correct (as a collection of events, if not as a causal process). The worry is that this might be a gerrymandered set of events. If this set can have intrinsic properties, what set of events is not intrinsic? Glennan differentiates this case from the Billy and Suzy double prevention case, because Billy's shooting down of enemy is a "kind of shielding of the mechanism against interference".

¹¹⁸ That S may intend for V to die cannot make it the case that S did in fact cause V's death. The intention is relevant, of course, for mens rea, but this is contingent on a causal connection. Intention is also tricky because of Double Effect. If the connection is merely quasi-causal would pulling a trigger on a gun merely result in death, a side-effect of the sort that can be foreseen without being intended?

what extent the process actually caused, can explain, or ground responsibility for these states of affairs. In omissions proper, not even this occurs. The omission itself is not an event and initiates no process at all. When Billy shoots enemy down, that shooting is a causal process. The state of affairs that obtains is one that Billy caused. Suzy's successful bombing is counterfactually dependent on something that Billy caused. On the other hand, in a pure omission case, say, Enemy's failure to get out of bed, Suzy's success is not counterfactually dependent on something Enemy caused.

Whether the distinction above succeeds in establishing a real metaphysical difference between preventions/double preventions and omissions (or between mechanistic double preventions and mere counterfactual ones), this distinction does suggest a solution for the moral case.

In any case of quasi-causation, what I will be arguing for is that you are accountable for the result, iff you were under a duty which you failed to do, and, had you done your duty, the better result would have obtained. Take pulling the trigger of a gun. Suppose that this merely quasi-causes death by double-prevention. This fact alone (that guns quasi-cause harm) might be enough to warrant a duty not to pull the trigger. No special duty of rescue is required to render pulling the trigger on a gun a dangerous, and thus potentially restricted, action. Furthermore, if you pull the trigger, apart from whatever counterfactually depends on your violation of the duty not to, there are also things in the world which you caused. You set a causal chain in motion, for which you are causally, not merely quasi-causally, responsible. There is a state of affairs that you cause, in these cases, which you can be blameworthy for having caused. Even if what you caused is not the victim's death, in this case, you did cause a state of affairs upon which the death depends. In omissions proper, on the other hand, you have caused no such thing. When you merely fail to rescue, the death is dependent on your *choice*, but not on what you actually caused. While I don't think this solution will suffice to equate such a case with causing harm, it does open the possibility of treating the liability for quasi-causing harm via causing a trigger pulling (on the assumption that the above solutions rendering it actually a

causing, fail) differently from quasi-causing harm via no action at all (via omission).

As a last resort, of course, one can, as said, bite the bullet and admit that these cases are all akin to omission: that is, they are purely quasi-causal. Even then, not all is lost. There are plenty of good reasons to not shoot guns at people and to hold people accountable for resulting harm. Still, the price is not trivial: not only because it is non-intuitive, but because it suggests a different treatment of causation in such a case. Does the magnitude of the severity of shooting someone with a gun depend on how it is wired?

Even so, it is not obvious to me that, when this is the relevant question, the difference doesn't present itself yet again. If we really had the choice between two acts of harm, one directly causing and the other indirectly, is it so implausible that we might, *ceteris paribus* at least, prefer the latter?

5. Conclusion

Having mapped the terrain for productive causation, we are ready to move on. Causation proper is a productive relation. This productive relation is intrinsic, local, and plausibly transitive. It is a relation or process that consists entirely in actual positive events, precluding causation by omission. Most importantly, for our purposes, this notion is distinct from, but plays an important role in grounding, responsibility and explanation. The latter two require a notion of dependence as well, in particular a notion of causal dependence. The following chapters will further develop the role of causation in responsibility and in legal liability. Each will be developed as containing dependence relations that pertain in important ways to causation proper. Causation proper will ground these dependence relations, and, in the case of responsibility, will also distinguish between types of wrongdoing and liability. Throughout, I pay close attention to omissions. Omissions will, at times, be relevant for explanation and attribution of responsibility, but only in virtue of, and downstream from, the actual causal relations. Omissions will be the proper subject of the next chapter.

Chapter 3: Omissions, Causation, and Responsibility

1. Introduction

In this chapter, I discuss omissions and their purported causal status. The argument will be that omissions are not causes, but they can, under certain special circumstances, be cited in causal explanations and in attributions of responsibility. In other words, we can explain events by appealing to omissions, and we can be responsible for outcomes that depend on our omissions. Explaining how this is so, and when, removes a general objection to theories, such as the one I'm defending, that rule out causation by omission. Furthermore, showing that such restrictions on explanation and responsibility are distinctive of omissions (rather than of garden variety causation) supports the claim that the causal status of omission differs from ordinary causes. In fact, I shall argue that omissions are not merely different, but rather, they are not causal at all. Along the way, I'll suggest a general template for the attribution of responsibility for omissions and similar quasi-causal cases, which will also figure prominently in the following chapter, on causation in the law.

1.1 Omissions Are Not Productive, Hence They're Not Causal

A common criticism of process theories of causation, and of production accounts more generally, is that they rule out causation by omission. Hall (2004) when arguing for two distinct concepts of causation (production and dependence) argues for the inadequacy of production as the sole concept of causation on two grounds: its inadequacy for explanation and decision (which seem to require notions of dependence), and its inability to account for omissions. I have dealt with explanation briefly in the previous chapters, arguing that dependence is an explanatory, rather than a causal notion. I deal with omissions here.

I agree with Hall, of course, that productive causation excludes omissions. A key claim in my analysis is to deny that this is a flaw. Matters don't end here. There is intuitive appeal to the idea that omissions can make a difference. Some omissions, in particular, seem especially relevant to cite as causes.¹ This intuitive appeal of causation by omission ought to be accounted for. Furthermore, if omissions are not causal, we must explain why they (sometimes) seem to share many of the essential features of causation, such as their roles in explanation, prediction, rational planning, and moral responsibility.

Previously, I argued that omissions and absences can be explanatory: we can explain the death of the plant by its not having been watered. This is because, had the plant been watered, the plant would not have died. Similarly, watering the plant would have been an effective means to keeping the plant alive. Crucial, however, is the distinction between causation and explanation. From the fact that failure to water the plant can *explain* the death, it doesn't follow that failure to water *caused* or is a cause (in any proper metaphysical sense) of the death. This is not to deny that the explanation of the death of the plant via the watering is a *causal* explanation: an explanation can be causal without the relata (the explanans and explanandum) themselves being causally linked as cause and effect, so long as the explanatory dependence (between the relata) itself depends on a proper productive causal relation. "The plant died because of the failure to water" is true, *because* there is a biochemical process that caused the death of the plant. Had no such process materialized, the plant would not have died, but also, and importantly for our purposes, it would have been false that the death of the plant would, in such a case, have depended on the failure to water it, and, thus, failure to water it would not have explained the death. In other words, the omission to water the plant

¹ Importantly, however, not all of them. Being a difference maker is not sufficient in the case of omissions: every event could have been prevented had any person at all prevented it. Yet we do not ordinarily invoke such omissions as explanations or as causes (much less blame people for them). This asymmetry between actions and omission will feature prominently throughout the chapter.

explains the plant's death, because the action omitted *would have prevented* the death of the plant.² Prevention, like omission, is a quasi-causal concept, which means that, while preventions and omissions do not directly link causes with their effects, they invoke potential causal relations, and, more importantly, depend on causal relations in the world, and can thus explain events causally. This general schema holds, more generally, whenever there is causal dependence without causation.

In this chapter I'll focus more closely on omissions, preventions, and absences more generally. The general line is the same: I insist on a productive account of causation, which excludes these. The apparent price that a productive account needs to pay to exclude omissions will be shown to be more than tolerable. In fact, I will argue for gains for an account of causation that excludes omissions, making the lack of omissive causation a virtue, rather than a defect of the productive account.

The gains will pertain to what I take to be a cleaner solution to the question of responsibility for omissions. Understanding how responsibility works in such cases involves invoking norms. Every harm that we have failed to prevent would be one which we can be said to have caused, were omissions plainly causal. Yet, normally, blame for failure to prevent harm is restricted to people in special circumstances in reference to that harm. The lifeguard who fails to jump into the water is blameworthy for the drowning swimmer, while the other people at the beach (or those who failed to go to the beach) typically are not. Thus, there is an asymmetry in blame between the relation different omitters have to very the same effect, even though each is a difference maker in the same respect. Similarly, if we do in fact prevent harm, we are praised for it. But we are not praised for merely

² Of course, this doesn't distinguish between the gardener's omission and, e.g. the Queen's omission. Had either the gardener or the Queen watered the plant, this would have prevented the plant's death. We do in fact invoke the gardener's omission more readily than the Queen's, whose omission we might not invoke at all in an explanation. We might even deny that the Queen's omission explains anything at all. All of this, however, would merely show that explanation has normative or pragmatic elements. My claim is that causation is a natural relation and that it cannot bear such elements. Explanation is a different story.

omitting to harm. If I save the swimmer on the beach, I am a hero, but I am not a hero for omitting to drown my fellow swimmers. There is thus an asymmetry between responsibility for preventing and for merely omitting, for the very same preventing or omitting agent, even though both are difference makers.³

The responsibility for omissions, therefore, is not straightforward. What explains the differences between the blameworthy omissions and the non-blameworthy ones? The difference seems to be normative rather than natural. If this is so, does this suggest that causation itself is normative? Or, if it is not, does it suggest that we often cause harm blamelessly? Is the bystander who fails to save the drowning swimmer a cause of the swimmer's death? If not, how is the lifeguard a cause?

Rather than treating causation as normative or accepting that we cause many harmful things blamelessly, I propose to remove causation by omission from the causal domain entirely. This dissolves the puzzle in that we no longer have causal connections that seem normative rather than natural. It does raise the stakes on why we sometimes may be responsible for outcomes we don't cause (i.e. how the lifeguard is responsible for the drowning, if he hasn't caused it). My account for omissive responsibility will take care of this.

1.2 Structure of the Chapter

The chapter proceeds as follows: First I argue why omissions and absences are not causal on a productive account (some of this ground has already been covered). Then I argue that, not only is this tolerable, but that it is precisely as it should be. Omissions as causes are rather ill behaved and metaphysically unsavory.

³ In case it seems as if the difference here pertains to praise versus blame, as in the famous Knobe (2003) cases, take a case of blame for prevention: Suppose A prevents the delivery of medication for a sick patient, who dies. B merely omits to deliver the medication to the patient himself. A will be blamed for the death (because he prevented it) whereas B will be a mere ommitter, whose responsibility depends on further factors as elaborated below.

Three primary reasons to reject omissions as causes are offered: *first*, that, strictly speaking, they are non-existent, *secondly* that they are profligate, *third* that there are obvious asymmetries between omissions and acts. These asymmetries pertain to both the metaphysics of causation and to explanation and responsibility.

One reason for the act/omission asymmetry results from the supervenience of the omission's causal "efficacy" on positive causes. In this respect, invoking omissions as "causes" is simply to invoke a causal explanation. But there are further asymmetries, beyond the efficacy issue, between omissions and positive causes in the domain of responsibility (including both morality and the law): we tend to take active causal responsibility more seriously than passive causal responsibility, we tend to think of wrongdoing by action as worse (all else equal) than wrongdoing by omission, we treat negative duties of harm more seriously, and are less reluctant to impose them, than positive duties of beneficence and rescue.⁴ There are also many who contend that Frankfurt cases,⁵ in which we could not have otherwise acted, even had we intended to, and similar overdetermining causes, defeat responsibility for omissions,⁶ but not for standard causation.⁷ These are all complex and highly controversial areas of moral theory, but, I shall argue, a key component in properly understanding them is attained by removing omissions from the domain of the causal.

⁴ The relationship between these three distinctions: (i) acts v. omissions (ii) doing v. allowing and (iii) negative v. positive duties, both between one another and as to how each relates to causality, is complex and controversial. I address some of it subsequently in this chapter.

⁵ Frankfurt (1969).

⁶ In other words, take the difference between the following two cases: (a) A shoots B. C was waiting in the wings to shoot B, had A failed to do so (preemption case). In this case, it is clear (is it not?) that A killed B and would be appropriately blamed for doing so. (b) A fails to rescue drowning B. Had A jumped in the water, it wouldn't have mattered, because (unbeknownst to A) the water was full of sharks. In the latter case, A's omission seems irrelevant and it would be inappropriate to blame A for B's death.

⁷ Van Inwagen (1983), J.M. Fischer (1985-6), Ginet (2003), Sartorio (2017), Clarke (2014). The asymmetry has been rejected by McIntyre (1994), and Fischer and Ravizza (1998) and Clarke (2011). Sartorio's view is complicated in that she accepts that inability to do otherwise defeats outcome responsibility in omissions (but not actions), but she thinks that an ommitter is responsible for an outcome in a case of omissive overdetermination.

Removing omissions from the causal requires an account of how responsibility for omissions works. I will survey some of the main positions on the ontology of omissions. My purpose is not to break new ground on a metaphysical account of what an omission is, but to understand omissions sufficiently well to see why they cannot be causes, and to offer a way of talking about them and reasoning with them (whatever “they” are) constructively. For this, we need a working semantics of omissions and preventions and an understanding of the causal claims made therein. A rival account, by Schaffer, on the semantics and metaphysics of omissions will be considered.

With this aboard, I discuss the key example in our discussion, relating to the problem of profligate omissions, also known as the Queen of England problem. The rival accounts will be employed in solving this problem. We will see that any adequate solution requires importing normative considerations. While some have taken this lesson to show that causation must be inherently normative, our lesson will be just the opposite: the normativity of omission attributions shows that omissions are *not* causal. What distinguishes the gardener from the Queen is in fact a normative consideration, but this renders neither the gardener nor the Queen a cause of the plant’s death. This, itself, solves the profligacy problem, but it invites a new problem: even if none of the profligate omitters has caused the effect (the plant’s death), in virtue of what do we so readily and intuitively distinguish between the salient omitter (the gardener) and the others? Relatedly, in virtue of what do we hold some, but not all, omitters responsible?

I offer a two-part solution that is the heart of the chapter. To the first question, I respond that we distinguish between them along normative lines. To the second, I offer my own account of what is involved in responsibility for the consequences of an omission. This account will play an important role in the next chapter relating to causation in the law. In short: we are *causally* responsible only for what we cause. But we can also be responsible for negative outcomes we had a duty to prevent. This

latter form of responsibility is not responsibility in virtue of what we caused, but in virtue of what we had a duty to cause.

At this point, I address a further worry, one of normative creep. It has been contended that the normative nature of causation extends beyond omissions. For some, this motivates an aversion to causal theories that make sharp distinctions between positive and negative causes. Additionally, it has motivated a contextual or pragmatic view of causation more generally. I resist this move. The same solution that works for omissions, works for the types of cases that motivate normative creep more generally. The cases adduced in support of these claims are confusing explanatory pragmatics or blame attribution with the metaphysical claims about causation.

With the account worked out, I argue that, not only do I successfully deflect the temptation to grant omissions causal bona fides, but I gain several advantages. In particular, pertaining to the asymmetries of positive and negative causation and the act omission distinction in moral and legal responsibility. Additionally, with a cleaned up productive account of causation in hand, we are in a better position (in the next chapter) to account for the proper role of causation in the law.

2. Why Omissions Can't Produce

We can divide up the arguments pertaining to omissions into three sorts: (1) Arguments about the specific theories of causation and what they say about omissions. (2) General doubts about whether omissions can be causal. (3) General reasons to mistrust causation by omission.

2.1 Specific Productive Theories

The *first* topic has been discussed extensively in the previous chapter. Omissions cannot be productive in process and transference theories. Their role in Nomic Sufficiency theories is somewhat unclear, but they are clearly excluded in Hall's Blueprint strategy.

2.2 General Doubts about the Efficacy of Omissions

The *second* group of claims go on the offensive, arguing that omissions *cannot* be causal and that therefore theories of causation *should not* include omissions. Arguments of this sort point to the exclusion of omissions as a point in favor of productive theories. One standard point in this regard is that omissions are not genuine events, so they cannot figure as relata in causal relations.⁸

But there are additional reasons to think that omissions cannot be causal:

2.2.1 Grounding asymmetry. The causal provenance of omissions is grounded in active causes. No omission is causally explanatory without it being the case that an active process caused the result. Suzy's failure to water the plant (an omission) is only relevant if there is a biochemical process that culminates in the plant's death. Billy the lifeguard's failure to save the drowning swimmer is only relevant if the water enters the swimmer's lungs, etc. In other words, the omission itself is not a part of an active route that causes the result. Its role in the process is to allow it, rather than to produce it.⁹ More importantly, there must always be an active route. Whatever efficacy one is tempted to grant an omission, that efficacy will be absent if there is no active process. The reverse is not true. The process, as long as it culminates, is sufficient for the effect and grounds whatever dependence relations obtain between the omission and the effect.

2.2.2 Explanatory asymmetry. The process explains the "efficacy" of the omission, but the omission does not explain the efficacy of the process. The omission can explain the *event*: we might point to the omission to explain why the plant died. But the explanation presupposes a process that

⁸ Several strategies exist to counter this: the relata could be facts, which, suitably construed, could take omissions (Mellor (1995)); they can be events that stand in for the omission, for example the positive event that occurred instead of the omission (Lewis (1986b); Schaffer (2005)) or possible events (Bernstein (2014)); they can relate a different structured counterfactual (instead of "had C not occurred, E would have occurred", use "had C occurred, E would have occurred") (Lewis (1986b)); they could involve a causal relation without relata (Lewis (2004)); they could involve contrasts (Schaffer (2005)) or default/deviant variables (Hall (2007), Hitchcock (2007b) and (2017)).

⁹ Cf. Lombard (1990).

would have been prevented, had the omission been carried out. An explanation given entirely in terms of the process, however, needs no more filling in in terms of the omission.

2.2.3 One-Many asymmetry. There is similarly a one-many relation here. One process causes the death of the plant, but many omissions allow it. There is a fundamental difference between the one and the many: the one process causes the effect in virtue of producing it. Omissions, on the other hand, are only deemed causal insofar as they support dependence relations. I have argued, contrary to the counterfactual tradition, that counterfactual dependence is not sufficient for causation.

2.2.4 Lack of dependence/production severability for omissions. But the point goes beyond this. For Hall and similar dependence/production dualists, dependence is sufficient (and necessary) for dependence causation, but not for production. *e* can depend on *c* without being produced by *c*. The reverse is true as well: *c* can cause *e* without dependence between them, as in late preemption. Active causes can produce this way, without causal dependence. But omissions cannot. Omissions, whatever their causal credentials, seem to only be relevant when there is causal dependence. There just doesn't seem to be a form of omissive production without dependence. There is no clear analog to late preemption involving an omission. This is intimately related to the profligacy point: for active causal routes, the presence of backups doesn't change the fact that this particular cause (e.g. Suzy's throw) brought about the effect. Perhaps others might have or could have, but this one *did*. In omissions, there are always many potential backup causes and omissions that could have "accomplished" what this omission did. But there seems no analogous notion of an

actually efficacious omission: the one omission that produced the effect.¹⁰ This may be different with preventions and double preventions, as these involve actions.

2.2.5 Profligacy. Profligacy introduces another set of problems, arguably the most famous problem for omissions of them all, known as the problem of profligate omissions,¹¹ or the Queen of England problem.¹² When Suzy fails to water the plant, and the plant dies, did Suzy's failing to water the plant cause it to die? We face a dilemma. If we say "no", we seem to be uttering an absurdity.¹³ If we say "yes", because she could have prevented the death of the plant by watering it, isn't this true of everyone else as well? Does this also mean that the Queen of England caused the death of the plant, by not watering it?

2.3 General Reasons to Mistrust Causation by Omission

Finally, a reason to suspect omissions is that we have, what Dowe calls, an "intuition of difference" between actual positive causing on the one hand and omissive allowing and failing to prevent.¹⁴ This is not merely an intuition, it plays a role in moral theories that distinguish actions and omissions more generally: many of us think that duties not to harm are, at the very least, stronger

¹⁰ Admittedly, there is some temptation to attribute efficacy to omissions in some cases, especially interactive cases involving agents: A, seeing that B, his date, fails to show up, throws out the flowers. Isn't B's omission efficacious? (Foot (1978, 26), on an actor who fails to turn up for a performance "spoiling" it). A production theorist, I think, should say that the proximate cause of the anger or the throwing of the flowers is a mental state produced by a belief that an expectation was failed. The promisor failed to prevent those circumstances, but didn't cause them. Furthermore, in many of these cases, the expectation itself might have been caused by the promisor, thus rendering the contribution causal tout court. Notice that cases like this can be described either as omissions or as double preventions. If a mechanism exists to count (some) double preventions as causal, this might create some interesting distinctions between the cases: those in which the party partakes in actions that prevent the expectation from being met are different from, say, simply forgetting or oversleeping.

Another example sometimes given (e.g. Sartorio (2009)): a kidnapper kills by failing to feed his victim. Here I'd argue that the kidnapper kills by restraining his victim or limiting his movements. Whether this is, strictly speaking, a doing or an enabling (Foot (1978)) is difficult, but it is clearly not just an omission.

¹¹ Menzies (2004).

¹² Beebee (2004).

¹³ Lewis (2004) takes denial of absence causation to be a reductio of a theory. We, obviously, disagree.

¹⁴ Dowe (2000).

than duties to rescue. Even those that deny this,¹⁵ push back against this very intuition. This intuition is common sense in the law as well.

If my account is correct, this asymmetry is vindicated. Standard productive causation is all there is to causation, and omissions and preventions and the like are dealt with quasi-causally.

3. What Exactly are Omissions?

What are omissions? Many accounts have been offered.¹⁶ Bernstein conveniently groups these into four general categories:¹⁷

1. Nothing at all;
2. Positive events that occurred instead of the omitted fact;
3. Negative entities;
4. Possibilia.

On the *first* (nothing at all), my not watering the plant is no-thing in the world. Rather, it is just a truth about the world that there is nothing in it that corresponds to my watering the plant. On the *second* (positive events), if I went to the movies instead of watering the plant, the omission of “not watering my plants” refers to the actual positive event (going to the movies) that took place instead.¹⁸ On the *third* there is a negative event (my not watering the plant) or fact that is the omission. On the *fourth*, the omission is the watering of the plant in a possible world.¹⁹ That possible event, could have been the actual event.

¹⁵ Such as standard Act Utilitarians.

¹⁶ Clarke (2014) lists the following: negative facts or truths (e.g. there is no table in this room); states of affairs; possibilia; uninstantiated act-types; sui generis objects; and features of space-time regions.

¹⁷ Bernstein (2014).

¹⁸ Some account would be needed for what counts as being in its stead: perhaps what I was doing at the same time. This would work for “A omitted to x” but how to account for a general failure for something to be done?

¹⁹ Bernstein’s complete account of the omission is as a tripartite relation between an event at a possible world, an event in the actual world, and a counterpart relation between them. The omission is a de re possibility of an actual event. When the gardener goes to the pub instead of watering the plants, the event in the actual world (going to the pub) has a counterpart relation with an event in a possible world (watering the plants), such that the former is an omission of the latter. See Bernstein (2014).

Other complications arise in terms of distinguishing omissions from refrainings or mere absences. Some authors insist that an “omission” means more than simply *not* doing something.²⁰ For example, in omitting an action (or, in “refraining” from an action) one must willfully not do something that one had, e.g. the power, to do. While I do not necessarily disagree, I don’t think anything here hinges on this point. My concern is the causal relation between an omission and other effects further downstream (rather than the causal relation between a volition and an action). Whether there are relevant distinctions to be made between various forms of inaction is secondary to whether inaction can actually “cause” anything in the first place. Additionally, the relation between the act/omission distinction and the positive/negative cause distinction on the one hand, and the doing/allowing distinction on the other, is somewhat more complicated than might seem. For instance, one can allow a patient to die by removing (doing, acting) the respirator.²¹ On the other hand, one cannot kill by omitting to deliver an antidote, unless there is already an active process in place.²²

Standard counterfactual accounts of omissions run into some trouble with the relata of the omission. Recall the four categories of theories as to what omissions are: (1) nothing at all; (2) positive events differently described; (3) negative entities; (4) possibilia. If the omission is a non-event, as in (1), then how does it relate in a counterfactual conditional? The conditional relates two

²⁰ Kleinig (1986); Weinryb (1980); Brand (1971).

²¹ Foot (1984), McMahan (1993). Moore (2009) treats this case as an omissive allowing, which he analyzes as double prevention.

²² Foot distinguishes allowing (or letting die) cases that are (i) *Enablings*, which involve the removal of an obstacle to a sequence (in which the obstacle would have prevented the sequence from playing out) from cases that are (ii) *Forbearances to prevent*, in which a harmful process is in motion and the agent could have prevented it but did nothing. It is only the latter that are actually cases of omissions. Enablings, on the other hand, invoke mechanisms of double prevention. Moore (2009) refers to Enablings as “non-ommissive allowing”. Forbearances, too, needn’t be purely omissive. I might forbear to prevent, e.g. a fall that I could have broken by catching the falling person, by stuffing my hands into my pockets (an action). See Clarke (2014, 187). The distinction between these types of forbearance is not necessarily of obvious relevance, since, regardless, neither the act nor the omission is causal. Where the relevance will matter is with counterfactual liability for omissions: suppose I lock myself in a room so as not to be available to help you. When you cry for help, I cannot leave the room. But if my inability to help you is a consequence of active forbearing (locking myself up) then my inability to help will not defeat responsibility. Even though my omission was not a difference maker (I couldn’t have made a difference even had I tried to help), my locking myself in my room might be.

relata, presumably events, but the first relatum would be lacking. Take a case of ordinary, positive causation: Suzy poisons the plants and they die. On the counterfactual account, Suzy's poisoning the plants caused them to die, because had Suzy not poisoned the plants, the plants would have lived. We pick out an event (Suzy poisoning the plants) and run the counterfactual conditional on it. Which event do we run this on in an omission? What is the failure to water the plants? If it is nothing, how can we run a counterfactual on it?

On the other hand, if Suzy's failure to water the plants is just what she was doing instead, e.g. her going to the movies (as in account (2)), the counterfactual's antecedent should be "had Suzy not gone to the movies". But perhaps, had she not gone to the movies, she would have gone to the opera instead. In that case, the plant would have died just the same.

The negative event view (3) is ontologically bizarre (what are these negative events?). The possible event view (4) will make more sense in a moment.

The counterfactual that Lewis suggests for omissions is not "had Suzy not failed to water", but "had Suzy watered the plant".²³ This relates us to the closest possible world in which Suzy did the action in question. On the possible event view, this world is given to us by the semantics of the omission. Still, any of these accounts needs to relate an absence in this world to an effect, something that doesn't sit well with many.

A productive account of causation, in particular, will not want to sanction causation among non-events, negative events, or possibilia. This leaves open either getting the second (positive event) account to work or by rejecting the causal efficacy of the omission altogether, which is what I in fact suggest.

²³ This is Lewis (1986b). Lewis (2004b) changes course, arguing that omissions involve no relatum and thus that causation is not a relation at all.

On the productive view of causation that I am endorsing, omissions don't seem to produce anything at all. How can they be actual causes? While, had the gardener watered the plant, it would have survived, his "not-watering" the plant seems like an add-on to what would otherwise be a complete and satisfactory bio-chemical explanation of the plant's death. What caused the death of the plant was a biochemical process. We have a complete story in terms of the actual occurrences in the world of how the death of the plant was produced. Not-watering the plant is not part of that process (we can describe the process in its entirety without mentioning the non-watering). In other words, whatever is true of "absence causation" or "causation by omission" is always true *in virtue of* present and actual events, processes, etc. The positive factors alone are the real driving force of nature.²⁴ As such, the difficulties of the absent relatum (if omissions are non-things) dissipates. If the omission were an abstraction or a possible event, its causal status would be puzzling. There is less obviously a problem with such entities figuring in explanations.

But what are we talking about then, when we invoke omissions? For this, in the next section, I borrow Dowe's semantics of omissions as quasi-causes.

4. Semantics of Omissions: Dowe and Quasi-Causation

Phil Dowe calls causation by omission (as well as preventions, double preventions, etc.) "quasi-causation".²⁵ Quasi-causes are similar to causes in some respects, but are not, strictly speaking, instances of causation. This is because statements attributing quasi-causes are true by reference to other "real" causal statements.

Dowe's account of omissions depends first on his account of preventions. This involves a counterfactual account, but, unlike the counterfactual theory of *causation*, does not reduce causal relations to counterfactual dependence of events, across possible worlds; rather, it keeps causation

²⁴ Armstrong (1999, 177). See also Mill (1843, Book III, Ch. V Section 3).

²⁵ Dowe (2001).

(or causal processes) fixed, across those worlds, and seeks to elucidate quasi-causation in terms of what would have been *caused* in those worlds.²⁶

4.1 Preventions

Take a simple case of prevention. For example, if the gardener waters the plant, he prevents the plant from dying.²⁷ What was prevented, the plant's dying, is not an actual event (after all, the plant survived), so how can watering the plant cause it? For this we get an analysis of prevention:

A prevented B if:²⁸

1. A occurred; (in our case, A: the [gardener's] watering of the plant)
2. B did not occur; (in our case, B: the plant dies)
3. There occurred an x, such that there is a causal interaction between A and the process due to x, such that
4. Had A not occurred, x *would have caused* B. (x being the [lethal, to the plant] biochemical process that was terminated by the watering of the plant)

Notice that this counterfactual ("would have caused") is a counterfactual about causation, rather than an analysis of causation as counterfactual.²⁹ The biochemical process that would have killed the plant would have caused the plant to die. The gardener, by watering the plant, interacts with that process to *prevent* that causing.

On the standard counterfactual account, we would say that in the (closest possible) world where A does not occur, B occurs. It is because B occurs in that world that A is a cause of not-B. Not

²⁶ The account is supposed to be neutral as to the correct semantics of "cause".

²⁷ I'm setting aside, for the purposes of simplicity, whether the watering also caused certain other events or facts, which it presumably did.

²⁸ Dowe's analysis is a sufficient condition, but not a necessary one. Depending on the semantics of the counterfactual, these could be preempted.

²⁹ For Dowe, it's bring your own causal semantics.

so, on Dowe's account: it is what x would have *caused* in that world (B), that makes it true that A prevented B.³⁰

With an analysis of preventions, we can elucidate omissions.

4.2 Omissions

The gardener fails (omits) to water the plant. The plant dies. Did the gardener cause the plant to die (did he kill the plant)?³¹ "Yes", says the counterfactualist; "no", says Dowe. On Dowe's account, the gardener "quasi-causes" the plant to die (by failing to prevent its death), but doesn't cause it. This case differs from prevention: in prevention cases, the action that occurred prevents an outcome that does not; this time, the action that doesn't occur (the omission) quasi-causes an occurring outcome.³² In other words, omissions relate the negation or absence of an event A with an occurring actual event B. Dowe's analysis then is of Not-A quasi-causing B by omission:

Not-A quasi-causes B (by omission), if:

1. A did not occur;
2. B occurred;
3. There exists an x, such that x caused B, and, had A occurred, it *would have prevented* B from interacting with x.

The analysis of *would have prevented* refers to prevention (as defined above). Once again, there is a biochemical process that, had the gardener watered the plant, his watering would have

³⁰ We are assuming that the causal laws are the same in both worlds.

³¹ For purposes of this example, I'm assuming the equivalence of "killing" and "causing to die". This equivalence is not accepted by all. The difference doesn't matter to the example, which concerns "causing to die".

³² Omissions, therefore, can quasi-cause, but cannot cause. Preventions, of course, both cause and quasi-cause: they cause various events in the world and they quasi-cause that which they prevent. For example, if A prevents the fly from entering the room by closing the window, A caused the window to close and quasi-caused (prevented) the fly's entering the room.

prevented the plant from interaction with that process (and the plant would have lived). He omitted to water the plant, and thus failed to prevent that interaction. This is what omission consists in.

With this semantics aboard, we can refer to omissions and their quasi-causal attributes more clearly.

5. The Queen of England Problem (Again)

Let's return to the Queen of England problem to see how the difference between the counterfactual account and Dowe's account proceeds. Take the gardener case. If the gardener's omission to water the plant caused it to die (as in the standard counterfactual account), what about the plant-owner's omission? What about the Queen of England's omission? Did they, too, cause the plant to die? If we're not careful, everybody in the world causes everything to happen, merely by not preventing it.

Production theories, like Dowe's, solve this problem by denying that omissions cause. In other words, not only do they deny that the Queen of England caused the plant to die, they deny that the gardener did as well. This is because omissions are not causes. Still, the gardener quasi-caused the plant to die (had he watered the plant it would have interfered with the process that killed it). What about the Queen of England? Did she quasi-cause it as well? It would seem so. So, they both quasi-caused the plant to die, as did everybody else. What progress have we made?

The standard solution to this problem, for those, like counterfactualists, who admit omissions as causes, is to zero in on norms, or in this case, to focus on who has the duty. Metaphysically, perhaps, the gardener and the Queen are on a par, in terms of *causing* the death of the plant, but *only the gardener* has the *duty* to prevent this from occurring. Still, even if we've solved the Queen of England problem by appeal to duty, we have not explained how the gardener has properly *caused* the death of the plant. We've simply answered the question "why pay attention to the gardener?"

An apparent dilemma presents itself: either the gardener and the Queen are on a causal par (by either both causing or by neither causing), or they are not (because one of them, presumably the gardener, caused by omission, whereas the other did not). If the latter (lack of parity) is correct, it seems that causation itself has a normative component, undesirable for a natural relation. On the other hand, if there is parity, then we either admit that the Queen too caused the plant's death, or we have the puzzling consequence of blaming the gardener for something he didn't cause.

Counterfactualists tend to prefer the first of the parity options, such that all of us cause the many terrible outcomes we fail to prevent. Metaphysically, this option, while extremely unintuitive and unappealing, is perhaps coherent. Morally, however, it creates trouble for a view that argues that we have duties not to cause harm and that causation of harm violates the rights of others. Such a principle against causing harm would include "causing" harm via omissions. If such harms are rights violations, much of the common-sensical distinction between doing and allowing, between misfeasance and malfeasance, between injuring and minding one's own business, is puzzling.

The solution I promote is the opposite: neither the gardener nor the Queen caused the plant to die. Both the gardener and the Queen quasi-caused the plant to die. But the gardener, and not the Queen had a duty to prevent the death of the plant. This explains why we attribute the plant's death to the gardener and not to the Queen, as well as why he can potentially be blamed for the plant's death, even though he did not cause it. Had the gardener caused the death of the plant, he could be blamed, period, for causing the death; for quasi-causation on the other hand, a duty is required to warrant blame, even though there is no causation. In other words, causation connects the actor to the effect, even in the absence of duty; quasi-causation does not (it requires more).

6. Schaffer's Contrastive Theory

A rival account is offered by Jonathan Schaffer, who argues that the causal relation is a contrastive, contextual, four-placed, rather than two-placed relation.³³ That is, the proper understanding of a causal claim is not: C caused E. Rather it is:

Contrast: C, rather than C, causes E, rather than E**

Schaffer's own version is a version of the counterfactual theory, with a twist. In order to make causal judgments, we need to contrast both the cause and the effect with a relevant alternative. Without the relevant contrasts, we cannot determine the truth of causal claims. This contrastive structure is how causal claims are to be evaluated in general, but also, on Schaffer's view, best make sense of causation in the law. While I am about to reject Schaffer's theory as an account of causation, I make use of Schaffer's insight in my application to the law (and to liability in general).

On a contrastive reading, it makes no sense to say that a particular event or process caused an outcome. We first need to answer the question: *as opposed to what?* The contrastive test can also make sense of our treatment of absence causation. Absences can function as perfectly decent contrasts: we compare the presence of water to the absence of water and ask what difference is made between the two. The absence of water, as opposed to its presence, explains, and on Schaffer's view, causes, the death of the plant, rather than the survival.

If we allow contrasts, there is nothing especially strange about absences as causal relata. If we conjoin *Contrast* with the requirement that the relevant contrast be comporting with one's duty, we can also solve the Queen of England problem. In other words, C rather than C* should be read as:

“The wrongful conduct, *rather than* comporting with duty, caused....”

³³ Schaffer (2005) and (2010).

For the gardener, this contrast, between the actual not-watering and the non-actual, but required, watering, correctly describes the gardener’s duties. For the Queen, it does not (as it was not her duty). This is why “the Queen’s failure to water the plant caused it to die” rings false. Contrasting that failure with what she had a duty to do makes no difference to the survival of the plant.

As for the semantics of the omission, Schaffer prefers option (2) above: negative statements, like “he did not water the plant”, are ways to describe the world, they denote some *other* event (his going to the pub) which was *not* a watering of the plants. Thus, the gardener’s going to the pub, *rather than* watering the plants, caused the plants to die *rather than* to flourish.³⁴ In this manner we don’t relate negative events at all. We determine which positive events are related by looking to the contrast class.

On the other hand, should such a contrastive semantics fail, if there were not always an available substitution of the omission with a positive event or action done in its stead, leaving the other available option as causation by no-thing, Schaffer argues it is still better to allow omissions to refer to non-events than to disallow omissive causation entirely, since on his view, denying causation by omissions is a *reductio ad absurdum*.

³⁴ An interesting, technical debate ensues here, between Schaffer (2012) and Moore (2012), regarding the proper semantics of omissions claims. For Moore, “his not watering the plants” denotes no event at all, and hence, cannot properly be a cause of anything. For Schaffer, it denotes some positive event, which can be described as such. Going to the pub can cause the plants to die, because it is contrasted with watering them. If, on the other hand, we contrast “going to the pub” with “going to coffee shop”, we have failed to establish the causal claim. So why is the relevant contrast “watering the plants” and not “going to the coffee shop”? Because watering the plants is his duty.

Moore construes the absence as:

$\sim(\exists e) (\text{Watering}(e))$ (read: It is not the case that there was an event, such that that event was a watering of the plant).

Schaffer construes it as:

$\exists e (\sim\text{Non-Watering}(e))$ (read: There is an event, such that *that* event was a non-watering).

Alternatively, Bernstein (2014) construes it as follows:

$\exists e \diamond(\text{Watering}(e))$ (read: There is an event, such that *that* event, *could have been* a watering).

If Schaffer is right:

1. All causation is contrastive (it's always a question of what we are interested in contrasting it with).
2. There is no special problem with omissions/absences (as long as we are careful in specifying the contrast).

With these two conditions established, we can justify focusing on duty as the contrast. The focus on duty does not change the subject, since all causal claims have a contrast class.

Schaffer's account is attractive in making sense of omissions as causes in the law as well. When the law, for example, treats negligence as a cause of damage, the relevant question is "but-for the negligence, would the effect had happened?" Suppose the negligence consisted in not taking a precaution. For example, suppose the defendant was texting while driving, and thus failed to notice the pedestrian. We can ask whether texting while driving is the cause of the accident by asking what would have happened had the defendant not texted. The relevant counterfactual is not the world in which the defendant would have made a phone call instead: rather it is the normatively required world in which the defendant drove appropriately.

While I take no issue with the above, in terms of counterfactuals for negligence, I deny the importance of contrast for causation. In fact, running a contrast is neither necessary nor sufficient for determining causation.

Contrast is *not necessary* for causation. It seems to do important work in the case of absences, but we don't need it in straightforward cases. For example, A shoots B in the head. B dies. What is added by saying: A's shooting B, *rather than his singing to him*, caused B to die, *rather than to enjoy a song*? Did we need to specify the contrasts to determine that A's shooting caused B to die? ³⁵

³⁵ Admittedly, we could just make the contrast the negation: "A's shooting B rather than A's not shooting B", but this just grants my point that the contrast adds nothing new.

Contrast is *not sufficient* for causation. The gardener's going to the pub, rather than watering the plants, caused the plants to die rather than to flourish. But how? All of the weight is on the watering or failure to water. Going to the pub adds no new information in this regard. If we don't understand why failure to water the plants "kills" them, the information about the pub won't help. Either not watering is sufficient (in which case the contrast adds nothing), or it is not, in which case we are still left wondering how the plants died. The answer, of course, is that they died as a result of biochemical processes, processes which can be understood completely without knowledge of, indeed even given the lack of existence of, pubs.

So the contrastive account is ill-motivated. Its most persuasive applications are precisely in the cases of absences, which Schaffer wants to show are unexceptional in this regard. That said, I will incorporate a key insight in Schaffer's contrastive approach below.

7. Understanding the Relation between Causation and Norms/Duties

The contrastive account leaves causation unexplained. The reason for this is that causation is *within* each contrasted pair, rather than across it.³⁶ The contrastive step is only needed to see what difference the *causation* made.³⁷ It's not the gardener's going to the pub that causes the plant's death; it's not the lifeguard's nap that causes the drowning. The causal process that caused the drowning is the water entering the lungs etc. That *process* is contrasted with the process in which the lifeguard does his duty. If in *that* process,³⁸ the actual (drowning) process is prevented, in other words, if the result of the duty-comporting process is one in which the lifeguard would have caused a better result

³⁶ Between C and E and between C* and E* respectively.

³⁷ In other words, in a proper causal context, we can draw contrasts, which run as follows: C caused E, C* would have caused E*, and the difference between them is X. What C* would have caused makes no difference to what C did cause. It does, however, make a difference to the import of C's causing E. C caused E, but E* could have been the effect, if only C* had happened.

³⁸ The one that comports with duty.

for the victim, the failure to do the duty and to execute the process that results thereof, is grounds for blame or responsibility. The lifeguard had a duty to produce X, his failure to produce X is a difference maker for the result. But the nap (or the pub) itself is causally irrelevant.

Causation doesn't require contrastive judgment, but judgments of responsibility might and judgment of (civil)³⁹ liability certainly does (as does quantification of damages), as we shall see in the next chapter. In short, causation is not contrastive, but assessments of responsibility and liability are.

What about omissions? Strictly speaking, omissions cannot cause anything. The gardener has not, properly speaking, caused the death of the plant. So why should he be liable for it?

My answer is as follows: when you have a duty, there is a normative sense in which you are rightly held to that duty. Understanding what this entails, involves a constructive fiction that your duty was comported with. The target of your duty (she who has a right correlative to it), is entitled to stand in the position she would be in, had you comported with your duty.

Let's return to the gardener case: the gardener had a duty to water the plant. The plant owner had a right to the plant's being watered. Now suppose that the gardener forgot to water the plant and went to the pub. The appropriate question is *not* "what did the gardener's going to the pub *cause*?" Nor is the question "what did the gardener's not watering the plant *cause*?" The answer to either question is: "nothing" (at least nothing relevant to the plant owner). Rather, we ask: in the (closest) possible world in which the gardener *had* comported with this duty (i.e. watered the plants) what would have happened (what *would have been caused*)? The plant owner has a normative expectation, perhaps a right, to be in *that* world (in that position). So the gardener who breached that duty is blameworthy for her not being there. This explains why liability attaches to the gardener and not to

³⁹ This qualification is necessary especially for inchoate crimes.

the Queen. The gardener's liability in this case is not, strictly speaking, causal (it is not for what he caused) but for what he had a duty to bring about.

We are not analyzing the causal consequences of "going to the pub" or "napping". How the duty was not comported with (what the omission actually consisted in) is not the relevant question.⁴⁰ Rather, the question is *whether* it was comported with. The vantage point from which the causal analysis runs is not actual causation in this world (from which no omission could ever cause). Rather it is the normative construction of a "perfect" world in which duty was met. That is the world the person owed that duty is entitled to. Failure to be in that world is the basis for omissive liability.

What goes for duty goes for norms more generally. My point here is to explain omissive attribution, rather than legal liability (which will use a similar account but will track actual legal duty). For this reason, we might find certain omissions more salient, even in the absence of duty: if A normally does an action, his failure to do so is a better explanation of the result than a normal omission by B. There is nothing causally superior about A's omission. The causal story is whatever positive sequence produced the result. But citing an abnormal failure can make good pragmatic sense, even in the absence of duty. Mistaking this for causation itself, however, is unwarranted.

8. Normative Creep

Some have argued that normative considerations infect causation, beyond omissions.⁴¹ If they are right, my account of causation as a natural relation fails. If so, the need to rule out omissions, due to their normativity, is unmotivated. Knobe and Hitchcock discuss the following example:

⁴⁰ This distinction, that acts can be individuated in a manner that omissions and "pure allowings" sometimes cannot, has been cited as significant (Thomson (1996); Clarke (2014)).

⁴¹ McGrath (2005); Knobe & Fraser (2008); Hitchcock & Knobe (2009); Halpern & Hitchcock (2010). This point was discussed in chapter 1. The original point, however, is due to Hart and Honore (1985). Thomson (2003) raises the possibility that, at least sometimes, responsibility grounds causation, rather than the reverse. For criticism on this point, see Sartorio (2007).

Pens. On the receptionist's desk there is a mug with pens. Administrators may take pens if they need them, but faculty are forbidden to. One morning there are two pens in the mug. An administrator takes one while a distracted faculty member takes the other. A little later, the phone rings and the receptionist answers. When she tries to take a message there are no pens. Was the faculty member causally responsible? Was the administrator?⁴²

Most people, apparently, judge the faculty member and not the administrator responsible. On the other hand, when the norms are reversed (e.g. when faculty, but not administrators, are permitted to take the pens), so are the judgments. But the metaphysics are just the same. What is there to say? Hitchcock and Knobe propose that normative facts play a role in determining singular causal relations: among those events on which a putative effect counterfactually depends, those that deviate from the norm are causes; those that conform are not. We attribute causality to the party that would be easiest to intervene upon to solve the problem.⁴³

On Hitchcock and Knobe's view, actual causation is a normative notion, whose role is to pick out which factors can be manipulated in order to alter the course of events. Causal structure encompasses all those factors that could have been manipulated to change things, whereas singular causal relations highlight factors that *should have* been manipulated to change things. It is typically better to intervene on those factors that deviate from the norm than to intervene on those that don't. For this reason, the non-adherent factors are typically seen as causal. So, while either the professor or the administrator could have abstained from taking the pen, having those that shouldn't take the pens abstain from taking them is more effective than having those that should. Therefore, it is the faculty members, rather than the administrators, who "caused" the dearth of pens.

⁴² The details of the example are an adapted version of Strevens (2013).

⁴³ This idea has resonance in Collingwood (1937) and features prominently in Hart and Honoré (1985). For an example of this principle in action in tort law, see also Calabresi (1970).

My response to these cases is the same as in omission cases. While physically, the faculty's and the administrators' contributions are the same, normative considerations fill-in the explanatory details. This normative consideration extends to cases in which we need to hold fixed various background conditions. For example, if two cars collide, because one is in the wrong lane, we could attribute the collision to either driver's being in the other's lane, or to both. It is only when we hold fixed which driver was in the *wrong* lane that we can attribute, relative to that norm, the collision to the stray driver. This, however, is not a metaphysical asymmetry. It is an explanatory asymmetry or one that is necessary for liability. The driver in the correct lane was doing nothing wrong, so blaming him is inapt. He was doing what was normal, so citing his being there is unilluminating as an explanation. Similarly, normative considerations determine that the relevant alternative is the one comporting with duty (watching the pool, staying in the lane, etc.) rather than some other alternative (eating the sandwich), even if that alternative is more likely. But none of this goes to the metaphysical differences between the two drivers. Metaphysically, both drivers jointly caused the collision. We only hold one fixed for the purposes of explanation or blame.

The *Pens* case is hardly a straightforwardly causal one. The question, "who is causally responsible?" contains two elements: a causal question and a normative question. Causally, both the faculty member and the administrator took a pen. They jointly caused a state of affairs in which there are $n-2$ pens available. On the other hand, the faculty member, and not the administrator, was not permitted to take the pen. For this reason (his norm violation), we blame him, and not the administrator, for the outcome. Had the norm been upheld, there would have been another pen.

In fact, even this account might not strictly speaking be correct. The effect "there are no pens" itself is an absence. It is not obviously the sort of thing that can be caused (it is a conjunction of the taking of one pen and the taking of the other, which together with the fact that there were two pens,

entail the state of affairs that there are no pens for the secretary). What is caused is the secretary's reaction. Who caused that? Maybe both pen takers, but it depends on the reaction.

If this is right, we shouldn't be surprised if the verdict shifts when the norm shifts. Furthermore, in the absence of a governing and clear norm (perhaps what is appropriate and what is statistically common diverge), there is no reason to expect a clear answer as to which taking of the pen caused the lack of pens. Strictly speaking there is no fact of the matter: one person took one, the other took the other. What each caused is what they caused. The rest is about responsibility.

9. Payoff

I have suggested that omissions cannot and should not cause. This saves the production account from the charge that it cannot account for omissions as causes. But I think we have done more than that. There are virtues in demoting omissions from the causal that pertain to the role of omissions in moral and legal responsibility. I discuss these in the next chapter. But for now, it is worth pointing this out.

For reasons both of metaphysics and of moral theory, the difference between acts and omissions is a desirable one to track.

The act/omission distinction can be analyzed on two separate levels: one metaphysical (are omissions a form of action?); one moral (do we have obligations to act or to prevent harm and are these obligations as strong as our obligations to refrain from harming?).

This moral concern is complex and seems to involve both the soundness of the doing/allowing distinction as well as a general concern with mandating positive actions. The latter concern is sometimes said to raise concerns about liberty⁴⁴ or perhaps concerns about the onerous nature of

⁴⁴ See e.g. Moore (2009).

duties springing forth unannounced.⁴⁵ Related is the question of negative versus positive duties and rights.⁴⁶ More generally, there is a concern that Mill's *Harm Principle* suggests that one is free to act so long as one causes no harm to others. If we admit causation of harm by omission as a form of "causing harm", the Harm Principle might be rendered vacuous.⁴⁷

This distinction is pervasive. We distinguish between harming and failing to rescue; between active and passive euthanasia; between wrongdoing and beneficence. The law too distinguishes between wrongdoing through action, and potential wrongdoing through omission, which requires a special duty. If I am right, and causation is only through action, never through omission, perhaps more sense can be made of this. The distinction will also make sense of an asymmetry between responsibility for causal consequences and omissive "consequences" in Frankfurt cases and other types of preemption.⁴⁸ Briefly, if A causes B harm, A's wrongdoing (as opposed perhaps to the amount of damages) is not affected by the fact that C was waiting in the wings to harm B. On the other hand, if A fails to rescue B, but it turns out that B could not have been saved anyway, A's "failure" is no longer grounds for liability.⁴⁹ This distinction, between active causing, in the presence of a backup cause, and omissive "causing", is explained if we treat only the former as a cause.

⁴⁵ Fletcher (1994). See also Simester (1995).

⁴⁶ Foot (1978) and Quinn (1989) each think that the doing/allowing distinction, and the stronger obligations we have not to do harm than not to allow harm stem from the difference between negative and positive duties. Another possibility is that negative duties are stronger than positive duties because of what their violation causes: breach of a negative duty causes harm, whereas breach of a positive duty does not. Perhaps, however, this is not fully satisfying, since the very focus on breach (as opposed to performance) as the relevant contrast presupposes the primacy of negative over positive duties. After all, positive duties (when performed) cause beneficial consequences, whereas negative duties, when performed, cause nothing.

⁴⁷ The relationship between this concern and the harm/beneficence distinction is not obvious. Arguably, one could maintain the latter distinction and maintain that we have a negative duty not to cause harm, where "harm" includes harm via omission. The worry is that making sense of what counts as a harm (as opposed to the rendering of a benefit) depends on whether it is the result of an action.

⁴⁸ Sartorio (2017); Clarke (2014).

⁴⁹ B can be blamed for not trying to prevent the harm, but not for the harm itself.

10. Conclusion

I have argued that an account of causation that treats omissions as quasi-causal, rather than causal, is superior to one that treats them as causal. Additionally, I've argued that omissions can do what we need from them (explain, ground responsibility) without their being causal, on the one hand, and without ignoring the centrality of causality to these domains (explanation and responsibility), on the other. Understanding that omissions do not cause helps make sense of omission's secondary status in terms of responsibility.

Omissions themselves are not anything at all. But when there is a norm or a duty to do something in particular, an explanatory dependence framework is in place. We can then ask what would have happened had that norm been comported with. This is what it means to explain via omission. Furthermore, when a norm is in place and is violated, we can blame someone for failure to comport with that very norm. We tend to think of that connection as causal, but what it really is, is quasi-causal. When A failed to do ϕ , which was A's duty, we blame A for the world's not being in the state it would have been had A done ϕ . A had a duty to produce such a state of affairs and did not. This does not mean that A caused the non- ϕ state of affairs. This is the difference between causing and omitting. Prevention and double prevention, as discussed in chapter 2, are somewhat more complex, as they do involve causing something. Still, the quasi-causal account captures adequately what they need for responsibility.

Thus, we have a normative account of omissions without a normative account of causation. Since causation, as a natural relation, should not be normative, this is how it ought to be.

Chapter 4: Causation in the Law

1. Introduction

The law is full of causal doctrines. Both criminal and tort law require causation as an element of liability. In a typical injury case in criminal law or torts, one is liable to a plaintiff or victim for harm wrongfully caused.

This chapter will present an account of causation in the law consistent with the account of causation throughout this thesis. In other words, I will argue that “causation” in the law means causation, in the proper metaphysical sense. This means that the law’s causation requirement is satisfied when the defendant causes, i.e. produces, the harm. Showing this will require an extensive discussion of the various ways the law characterizes its causal tests.

I will be arguing that the law’s treatment of causation and liability is best understood by treating cause-in-fact as actual productive causation. As has been argued above, this cannot mean counterfactual-dependence. Taking the law’s notion of causation to mean production resolves the difficulties arising in preemption cases, points to a general solution framework for overdetermination, and correctly identifies the law’s reluctance to attach liability to cases involving omissions. This view can both explain why causation matters for liability, as well as identify when liability is warranted. Causing harm is *prima facie* wrongful, in a manner that mere counterfactual dependence between one’s acts and harm is not. Responsibility for harm caused is *prima facie* warranted, and grounds liability, unlike responsibility for merely counterfactually dependent harms. Since omissions are not causes (or causings), these reasons to prohibit harm-causing actions or to render them grounds for liability do not transfer to the prohibition of omissions (i.e., the requirement of actions), to duties to prevent, or to liability for wrongful prevention. The latter are not causal, at least not in the straightforward way of causing the harm complained of, the way regular run-of-the-mill causes are. For this reason, a separate account will be developed for liability in quasi-causal

cases. The final picture, therefore, will be far more complicated than one in which production is necessary or sufficient for liability. The point, rather, is that production behaves differently in the law from quasi-causation, which is parasitic upon it. Cases of true causal liability are best understood as cases of production, whereas cases of quasi-causal liability are only understood when they are seen as differing from truly causal ones.

The production view of causation will capture not only what the law does, but what it needs to do better. Supplemented with my account of responsibility for omissions in the prior chapter, which has both counterfactual and contrastive elements, unlike causation itself, the account will make far better sense of the law's practices in assigning liability.

2. The Role of Causation in the Law

Causation functions as an element of liability¹ in both criminal and tort law.² Legal agents, such as individuals or corporations, are under various duties not to cause harm, and are liable, civilly or criminally, for the harm they cause. Various actions are illegal, wrongful, or unlawful, precisely because they (typically) cause harm.

Each element of a crime or tort must be proven by the prosecution or plaintiff; if any element fails to materialize, the defendant cannot be liable for that offense or tort. For example, if Defendant

¹ Liability, in both criminal and tort law, requires the satisfaction of various elements that comprise the crime or the tort. Each element must be proven for liability to ensue. The elements can change depending on the relevant theory of liability (e.g. the elements for negligence differ from the elements for an intentional harm or strict liability). While the elements for each crime or tort may vary, the elements are sufficiently generalizable so as not to be unique to specific crimes or torts. First degree murder, for example, requires, among its elements, intention to kill and an action that causes death. Death is specific to homicide. Fraud, for example, does not require death. But both homicide and fraud contain a harm element that is satisfied when the relevant harm ensues (death being the relevant harm in homicide; injury being the relevant harm in fraud). Similarly, both have a causation requirement, satisfied when the relevant harm is (appropriately) caused by the defendant's wrongful actions (the act element) when done with the requisite intention (the mental element). The various elements must also be appropriately aligned (the concurrence element).

² This is true for all torts (for which damages to plaintiff are prerequisite) and all "result" crimes, i.e. crimes that are defined in part through the obtaining of a harmful result to a victim, e.g. homicide. For "conduct" crimes, in which liability obtains simply in virtue of wrongful behavior on the part of the defendant (e.g. driving while intoxicated, or, inchoate offenses, such as attempts) there is no element of harm (i.e. liability doesn't require anybody getting harmed), and thus there is also no element of causation of that harm.

poisons Victim's chalice and Victim dies shortly thereafter, Defendant will not be liable for homicide if Defendant did not know³ that the substance was poisonous (due to lack of *mens rea*). But even if Defendant did know, to be liable for homicide, it matters greatly whether the poison actually killed Victim. If Victim did not drink, Defendant's poisoning was clearly not relevant. Even if Victim did drink from the chalice, Defendant will only be liable for homicide if Victim died of poisoning.⁴ It matters, in other words, whether Defendant's action *caused* Victim's death.

Causation⁵ is not a sufficient condition for liability, since the other elements (e.g. actus reus, mens rea, concurrence) must be met as well, but for torts and result crimes it is a necessary one.

3. Controversies Over the Meaning of "Cause" and The Two Step Analysis

The legal analysis of causation, however, is vexing. Commentators typically divide the analysis into two distinguishable factors or steps: cause-in-fact and proximate/legal causation. The meaning of each step is disputed, as are the boundaries between them. There is not even broad agreement as to what extent either step concerns causation in any meaningful sense. The rough idea is that the first step (cause-in-fact) pertains to the factual question (did Defendant's action actually cause the harm in question?), whereas the second step (which presupposes an affirmative answer to the first) pertains to whether the causing involved is of the right sort to warrant liability.

³ Or should not have known or realized the likelihood of, for reckless and negligent homicide.

⁴ Obviously, Defendant will still be liable for attempt in such a case.

⁵ In the legal sense. The meaning of this, of course, is the topic of this chapter.

3.1 The Orthodox Analysis

The predominant analysis of factual causation in the legal literature is the counterfactual, but-for test (where causation is a necessary condition or a condition sine qua non).⁶ The general idea is simple and intuitive: Defendant is a factual cause of the harm when, but-for his action,⁷ the harm would not have materialized.

The nature of the second step is more controversial. Once the defendant is deemed a cause-in-fact in step one, the second step investigates whether the imposition of liability is warranted. This second step is sometimes called “legal cause”, “proximate cause”, or “scope of liability”.⁸

This second step is traditionally a filtering mechanism for causes that qualify under the first

⁶ For example, the US *Restatement (Third) of Torts* § 26. Factual Cause: “Conduct is a factual cause of harm when the harm would not have occurred absent the conduct.” See also Model Penal Code §2.03(1)(a): “Conduct is the cause of a result when (a) it is an antecedent but for which the result in question would not have occurred.” But-for was reinforced as the “ordinary meaning” of “results from” in a recent United States Supreme Court case, *Burrage v. United States*, 134 S. Ct. 881 (2014) (concerning a sentence enhancing provision under 21 U.S.C. § 84(b)(1)(C), subjecting heroin dealers to enhanced sentences if “death or serious bodily injury results from the use of such substance”). For English law, see Lord Hoffmann in *Barker v Corus* [2006] 2 AC 572, [2006] 3 All ER 785: “The standard rule is that ...[it] must be proved on a balance of probability that the defendant's conduct did cause the damage in the sense that it would not otherwise have happened.” The principle is ubiquitous in European law as well. See Principles of European Tort Law Article 3:101: “An activity or conduct (hereafter: activity) is a cause of the victim’s damage if, in the absence of the activity, the damage would not have occurred” (Spier, 43). Despite this, historically, in U.S. law, but-for’s status has been contested. The previous two Restatements of Torts had defined factual cause using the “Substantial Factor” test (see Restatement and Restatement (Second) §431). There has been considerable debate, both as to whether the Substantial Factor test was meant to replace or to clarify the but-for standard, as well as, more generally, whether substantial factor is better understood as a criterion of factual cause (step one) or of the scope of liability (step two). For these reasons, the Restatement (Third) has recommended discarding the substantial factor test. In the UK, a similar test, applied sometimes in loss of chance cases, is the “material contribution” criterion. See *McGhee v National Coal Board* [1972] 3 All ER 1008, [1973] 1 WLR 1.

⁷ It is important to emphasize that in order for liability to incur there is an action or conduct requirement. Defendant must have caused the harm by doing something. That something done is the wrongdoing that constitutes the tort or the crime. That said, this “act” requirement can be met passively, i.e. via an omission. See e.g. Restatement (Third) §26 comment h: ““Tortious conduct” as used in this Restatement refers to the act, omission, or activity of an actor that satisfies the conduct requirement for a prima facie action in tort for physical or emotional harm based on intent, negligence, or strict liability”

⁸ Labelling these three terms as more or less synonymous reflects the evolution of these doctrines after a long and protracted history as to their meaning and whether they are to be viewed independently of factual causation. Historically, the distinction between factual and proximate cause was not so clear cut, nor was the current orthodoxy (among scholars, if not among judges), that proximate causation is a purely normative, rather than metaphysical or causal doctrine. The Restatement (Third) attempts to help establish this new orthodoxy by renaming “proximate cause” as “scope of liability” (Restatement (Third), Ch. 6). It should be noted that while academics, generally, are keen on this two-step process for causal analysis, judges have proven less impressed. See Lord Hoffmann’s comments in (2011, 4). Epstein (1973) suggests that the two-step process is unnecessary and is a relic of “but-for” causation, which he rejects, preferring instead a sequential system of pleas and counterpleas (inspired by Roman law), such that A causing damage to B is prima facie grounds for liability, rebuttable if A has justification or excuse, etc.

step. Suppose that the defendant injures the victim, who, on religious grounds, refuses standard medical treatment, and subsequently dies.⁹ Clearly, the *wounds* the victim dies of were caused by the defendant. But what about the death? The question is what status to afford the victim's refusal to receive treatment. Is it fair to hold the defendant responsible for consequences that could so easily have been avoided by a more reasonable or typical victim?¹⁰ Notice, however, that whether the defendant actually caused the victim's death will not hinge on the reasonableness or motives behind the victim's refusal to receive medical care. Liability, on the other hand, very well may.

A standard analysis of the refusal case would see the defendant as a cause-in-fact of the victim's death (step one). The difficulty would involve the proximate cause question (step two): does the defendant's responsibility (causal or otherwise) extend to the unforeseen (or irresponsible) refusal on the part of the victim to receive standard medical care?

Scope of liability usually consists of two general types of tests: foreseeability (including the Harm within the Risk test), limiting liability to the foreseeable effects of an action (i.e. no liability

⁹ *Regina v. Blaue*, [1975] 3 All Eng. Rep. 446 (Ct. App. 1975).

¹⁰ Historically, this question is wound up with a related but distinct question of contributory fault. If a victim or plaintiff has a blameworthy role in bringing about the result, this could lessen, or perhaps entirely negate, the defendant's liability. Similarly, contract law's doctrine of mitigation of damages, requires the party harmed by a wrongful breach to take reasonable steps to contain the damages. Failure to do so could limit what the plaintiff may recover.

for deviant causes, surprises, or unpredictable consequences);¹¹ and directness tests, particularly focused on intervening causes that “break causal chains”.¹²

3.2 Challenges to the Orthodox Analysis

There is considerable dispute both as to what extent this second step of “legal cause” is causal in nature,¹³ rather than the application of legal policy, and whether this division into two steps is necessary.

Whether the appropriate understanding of step two is primarily causal or normative informs what sorts of constraints the second step is concerned with. Historically, the main types of constraints that limit liability are concerns of directness¹⁴ and concerns with foreseeability.¹⁵ While either of these can be seen to relate to the question of proximity (or remoteness), it is the former, directness test, that has stronger claim to track causal facts, whereas foreseeability seems more obviously concerned with matters of fairness.

¹¹ The difference between a regular Foreseeability standard and Harm within the Risk pertains to cases in which foreseeable harms occur that are not of the sort that make the action wrongful in the first place (and are thus not “within the risk”): for example, it is foreseeable that if I drive carelessly I will cause panic in a bystander. Risk of causing such panic is not, however, the sort of thing that makes driving in that manner reckless in the first place. Therefore, even though I caused this panic, and it was foreseeable that I would, it is not a harm “within the risk” that makes reckless driving wrongful. Therefore, I am not liable for this panic, even though I have caused it (in other words, I have factually, but not proximately or legally, caused it). On the other hand, a harm can be unforeseeable but within the risk: suppose a complex chain of events that was not itself foreseeable, but that was clearly of the type the duty of care was meant to prevent. While the particular consequence may not have been foreseeable, it is of the sort the prevention of which justified imposition of the duty in the first place. The Harm within the Risk test is frequently traced to Cardozo’s opinion in *Palsgraf v. Long Island Railroad Co.*, 248 N.Y. 339, 162 N.E. 99 (1928). It is noteworthy, though, that the results of the Harm within the Risk test can be achieved in other ways, for instance by focusing on the duty (e.g. to whom is the duty of care owed in this case?), or by adopting an aspect-cause or fact-based approach to the causal relata (e.g. A, driving without a seatbelt, hits B. That it was an act of *driving without a seatbelt* made no difference to the outcome). This qualification holds to some extent for many of the step-two analyses. The *Restatement (Third) of Torts* § 29 adopts a related Harm Within the Risk standard as favorable.

¹² Typically of two sorts: intervening human actions and atypical natural events. The nebulous intricacies of these doctrines form the heart of Hart and Honoré (1985).

¹³ For example, is the remoteness of an effect a matter of metaphysics or just of limiting responsibility? Similarly, for the breaking of a causal chain, as a result, e.g. of third-party intervention (A accidentally spills gasoline and B throws a match igniting it: do we absolve A of arson because of lack of causal connection or on other, purely normative grounds?). What sorts of criteria render a consequence ‘remote’ or insufficiently connected? Are these metaphysical, pertaining to causation, or are they criteria of fairness?

¹⁴ *Re Polemis & Furness, Withy & Co Ltd* (1921).

¹⁵ *Overseas Tankship (UK) Ltd v Morts Dock and Engineering Co Ltd* (“Wagon Mound No. 1”) [1961] UKPC 2, [1961] AC 388; [1961] 1 All ER 404 (18 January 1961), Privy Council (on appeal from NSW).

Some critics go further, expressing skepticism of the factual (rather than normative) nature of the first step, the law's factual cause analysis, as well, arguing, for example, that to "cause" in the law just means to be appropriately held to be responsible.¹⁶

One way of framing the dispute, is whether the scope of causation equals the scope of liability. On the two-step analysis, obviously they are not equivalent. The two-step analysis is criticized by those who think that the two are equivalent. These criticisms come in two flavors, dubbed by Hart & Honoré as Minimalism and Maximalism.¹⁷ Minimalists believe that actual causation's role is minimal in the assignment of liability,¹⁸ whereas Maximalists believe that causation is sufficient for liability.¹⁹ For Minimalists, the first-step is (all but) unnecessary: "cause" in the legal sense has little to do with factual causation. For Maximalists, the true nature of factual causation determines liability, obviating the need for the second-step.

To be clear, on none of these accounts is but-for sufficient for liability. The dispute concerns the analysis of causation itself.²⁰

Both the but-for paradigm and the two-step analysis have met with resistance and trouble.

¹⁶ This approach is most famously articulated in Malone (1957). Its modern exponents include many in Critical Legal Studies and of the Law and Economics persuasions. While this view is rejected by many scholars, it retains popularity among judges. A common middle ground view sees some paradigm cases of causality as factual, with much of the grey area a matter of legal policy (e.g. Fischer (1992) concerning omissive overdetermination cases). Similarly, on the Philosophy end, Thomson (2003) and McGrath (2005) have argued that, perhaps, facts about responsibility ground facts about causation, e.g. it is the fact that gardener is responsible for the death of the plant (but the Queen is not) that explains why he (but not she) caused the death (by omission). Stapleton's (2009) view is more difficult to characterize. While by no means advocating a non-factual view, she maintains that causal questions in the law are answers to particular questions, framed by the needs of legal analysis. She is, therefore, dismissive of the ability of a metaphysics of causation to sort out questions of this sort.

¹⁷ (1985), Preface to 2nd Edition.

¹⁸ Either by denying factual causation's factual nature entirely, or by restricting it to but-for, thereby including much beyond what would normally be seen as realistically eligible for liability.

¹⁹ Hart and Honoré's own account is somewhat more nuanced. They are lax in their standard for "a cause", namely any Millian condition, but think that the causal selection problem can be solved on causal, rather than policy-driven grounds, picking out "the cause" which is, as such, the appropriate target for liability. Their solution to the causal selection problem, however, is driven by many normative assumptions of questionable causal provenance.

²⁰ Suppose, for example, that Taxi Driver, transferring Passenger to the airport, runs a red light. But-for Taxi Driver's offense, Passenger would have missed his flight. Unfortunately, the flight crashed, killing Passenger. Taxi Driver's wrongdoing was a but-for condition of Passenger's death, but would not incur liability. On the two-step analysis this would be because of the second step. On the Minimalist or Maximalist lines this would show that Taxi Driver cannot be said to have properly "caused" the death either.

The academic distinction between cause-in-fact and proximate causation has never commanded the same consensus among judges.²¹ Jury instructions do not always distinguish between them either.²² Others, whose sympathies are more in-line with productive causation, have argued against the two-step analysis as well.²³

But-for inherits many problems of its own, much of which will be discussed in detail later in this chapter. It is worth dwelling on this, because my point in this chapter is to deny that but-for is an adequate description of what the law is or ought to be after in its analysis of (factual) causation, and that, standard treatises' protestations notwithstanding, a closer look at the law reveals that a productive account of causation-in-fact is superior in accounting for what the law actually does. My account, while rejecting causal minimalism, will remain neutral between a two-step analysis and a maximalist one, leaving open the question whether a second step is required. I will insist, however, on production as the correct understanding of the factual-causation element.

One can, of course, maintain a two-step analysis arguing for a test other than but-for for cause-in-fact. Nevertheless, there are illuminating historical reasons why they tend to go together. Much of this makes more sense when looking at the history of the controversy surrounding the notion of "proximate cause", to which we now turn.

²¹ See Lord Hoffmann's comments in (2011, 4). But compare Justice Scalia in *Burrage v. United States*: "The law has long considered causation a hybrid concept, consisting of two constituent parts: actual cause and legal cause."

²² Florida's jury instructions for negligence (401.12a), for example, are as follows:

Negligence is a legal cause of [loss] [injury] [or] [damage] if it directly and in natural and continuous sequence produces or contributes substantially to producing such [loss] [injury] [or] [damage], so that it can reasonably be said that, but for the negligence, the [loss] [injury] [or] [damage] would not have occurred.

²³ Primarily, Epstein (1973), who argues that the two-step analysis is a relic of but-for. In later writings (e.g. Epstein (2004)) he has argued that the two-step analysis, and but-for in particular, is especially (and, perhaps, uniquely) relevant to negligence. Epstein himself (in conversation) rejects the "Maximalist" term as applied to himself. Moore (2009) is another example of someone suggesting the possibility of a Maximalist solution. Moore proposes a scalar theory of causation, such that causal influence weakens over time and with the number of transpiring events.

3.3 Proximate Causation: Some History

Traditionally, in Anglo-American law, one only is liable for harms that one has wrongfully²⁴ proximately caused. The origins of proximate causation in common law are said to be in the maxims of Francis Bacon: "*In jure non remota causa sed proxima spectatur*" ("In law, look to the proximate, not remote cause").²⁵

While there is considerable disagreement precisely what "proximate causation" means,²⁶ at the very least, it excludes some causal antecedents as insufficiently proximate, and thus acts as a filter on liability. While the doctrines for filtering differ, the guiding thought seems to be that some causal chains are sufficiently long or distal such as to rule out liability.²⁷

In the nineteenth century, skepticism arose about proximate causation as an objective or scientifically respectable notion. A controversy in the academic literature followed as to whether proximate causation is a coherent causal notion, or whether it is really a term to designate (or disguise) moral or policy-based considerations.²⁸ Such normative considerations disguised as factual

²⁴ Wrongfully is different from with fault. In strict-liability the harm is caused wrongfully, albeit faultlessly.

²⁵ Bacon (1630).

²⁶ One historic definition of interest is: "The proximate cause of an injury is that cause which, in natural and continuous sequence, unbroken by any efficient intervening cause, produces the injury, and without which the result would not have occurred". (*Wallace v. Jones*, 168 Va. 38 (1937)). This definition is of interest as it occurs in many US states' jury instructions, such as the Florida instructions mentioned above (note 22). It is also interesting because it seems to incorporate both a process-based production account of causation with an additional counterfactual requirement. As it stands, however, this definition is probably too restrictive, as it would rule out preempting and overdetermining causes which arguably produce without being difference makers.

²⁷ This concern is often dismissed as the "philosophic sense" of causation, which the law in its good sense is said to rightly reject. A famous case of this sort is *Ryan v New York Central R.R.*, 35 N.Y. 210, (1866), which limited liability for a fire to the first house burned, even though the fire spread quite extensively beyond this. In *Ryan*, the concern was one of policy: if liability were not so limited, the risks taken on by each homeowner, of being potentially liable for burning the whole city, would be too great. This sort of thinking, namely a concern with fine tuning liability to reach the desired action-guiding norms, incentives, and deterrence, motivates much of the thinking in these matters, especially in the literature influenced by Law and Economics, and by Utilitarianism more generally.

²⁸ By 1874, Nicholas St. John Green wrote, cynically: "Where a court says the damage is remote, it does not follow naturally, it is not proximate, all they mean and can mean is that they think that in all circumstances the plaintiff should not recover" (1874, 201).

or scientific ones seemed undesirable and engendered skepticism as to the court's causal analyses.²⁹

One approach, favored by those seeking to vindicate causal analysis, was to divide the analysis into two steps: a purely factual step and a normative (policy-driven) one. This two-step causal analysis would first evaluate whether some defendant's actions were objectively a cause. Once this metaphysically objective condition is met, policy considerations would determine whether the defendant should be held liable for what he caused.

Terminological confusion ensued. Some commentators called the second step "proximate cause"; others reserved this term for the result of both steps cumulatively. A similar proposal was to use the term "legal cause" for either of these. This controversy persists today, with lack of agreement as to what precisely "proximate cause" or "legal cause" denote, as well as whether to use this terminology at all.³⁰

Historically, much of this debate makes more sense when seen within the context of Mill's point regarding causes and antecedent conditions. The traditional view, prior to Mill, was that we can refer to *the cause* or *the proximate cause* of the harm. If a building was burned by an arsonist, the cause of the fire was the arsonist's setting fire to the planks. Other conditions were relevant: the oxygen, the lack of rain, etc. Also relevant was the shopkeeper who sold the kerosene to the arsonist. But these were mere enabling conditions, not the cause. Proximate causation was seen as a test to

²⁹ Interpreting the test literally, as proximity in time and/or space has also been criticized. For example, would the poisoning of candy in New Jersey, which was consumed in California, not count as proximate? See, *People v. Botkin*, 132 Cal 231, 64 P 286 (1901).

For what it's worth, I think that this notion of proximity is not the best or most charitable rendition of the principle. The principle of proximity picks out that node in a causal chain that is closer to the effect, along the same path. If A poisons the candy and B, knowing the candy is poisoned, feeds it to C, the principle of proximity would state that C cannot recover from A, unless there are reasons preventing (full) recovery from B. I discuss this in the addendum at the conclusion of this chapter.

³⁰ See Restatement (Third) of Torts §29 Special Note: "Although the term 'proximate cause' has been in widespread use in judicial opinions, treatises, casebooks, and scholarship, the term is not generally employed in this Chapter because it is an especially poor one to describe the idea to which it is connected...Hence this Chapter is entitled, 'Scope of Liability'". As for "Legal Cause": "...[it] contributes to the misleading impression that limitations on liability somehow are about factual cause...despite 75 years of Torts Restatement commitment to legal cause, its acceptance in the vocabulary of tort law is quite limited".

zero in on the real, proximate cause. In this, the test was supposed to track causal criteria.

Mill argued that *the cause* of an effect is the total of antecedent conditions sufficient for it. Thus, the arsonist and the oxygen are both causes, each being necessary for the sufficiency of the total set of conditions; one is no more the cause than the other. The fact that we isolate some of these conditions as “the cause”, is, on Mill’s view, a function of practical interest, not metaphysics.³¹

This conception helps make clear the dominance of the two-step analysis in modern legal systems, and, possibly, the prevalence of the but-for test.³² The general picture was that a factual cause is any Millian antecedent condition. Proximate causation (or legal causation) was the further selection from within this Millian set, of those conditions which were deserving of blame, via the policy considerations governing this choice.³³

Thus, while the two-step analysis is not conceptually committed to but-for as the criterion for the first factual step, or of a non-causal, policy-based understanding of the second, that picture animates much of the history and the rationale behind it. Proximate-causation was seen as scientifically suspect; but factual, but-for causation was respectable. The two-step analysis was therefore “scientific” in step one, and policy-driven in step two.

This history is illustrative because much of the plausibility of but-for, both conceptually and historically, as an explication of the law’s causal requirement, stems from these considerations. As I will argue, but-for is not the only, or even the most, sensible way to render causation factually. Additionally, the Millian concerns regarding the inability to distinguish between “true” causes and mere conditions, while of some merit horizontally, at a particular time-slice, is misapplied when looking vertically back along a causal path. The objection, in other words, that the one who *spilled*

³¹ System of Logic (1843, 399-400). See discussion in Chapter 2.

³² That Mill’s account can be read as supporting either a but-for account or a sufficiency based account, like INUS or NESS, is frequently overlooked.

³³ Binder (2016, 193). See seminal discussion in Nicholas St. John. Green (1870) and Jeremiah Smith (1911, 104).

the kerosene is just as much a cause as the one who lit the match does not similarly work for the one who *sold* the kerosene. I will return to this later.

Despite this, however, it is worth dwelling on the role of but-for in explicating proximate causation, as it is *proximate causation*, therefore, and *not* but-for causation, which the law takes as its analysand, as that which is necessary for liability. Whether but-for is the best analysis (or even a plausible one) of this target remains to be seen.

4. The But-For Test

4.1 How But-For Works

The dominant analysis of factual causation³⁴ in modern times, both in Anglo-American and Continental legal systems, is the *sine qua non*, necessary condition, or “but-for” test, essentially an application of the counterfactual theory of causation.³⁵ The but-for test asks: but for defendant’s (wrongful) conduct,³⁶ would the harm have occurred?

While the but-for test is now touted as the preeminent test of causation-in-fact, it has not

³⁴ Factual causation is taken as synonymous with “cause-in-fact”.

³⁵ See citations *supra* at fn 6.

³⁶ This qualification is important: Analysis in both steps examines the causal connection between the wrongful act (the act element) and the injury. It is only if the defendant, through his wrongful act, actually caused the injury, in a manner that the law deems sufficiently “close” that it would be fair to hold him liable for it, that he may be found liable. If a defendant caused the harm, but not via wrongdoing, he will not be liable.

A further debate pertains to how fine-grained this analysis must be: is it the defendant’s wrongful *action* that must be the cause, or is the *wrongfulness* of the action that must be the cause. Suppose a driver turns into an intersection without looking and hits an out of control vehicle. Suppose further that, even had the driver looked before turning, he would not have been able to avoid the collision. In one sense, the driver’s negligently turning is a but-for cause: had the driver not turned into that intersection the collision would not have occurred. Furthermore, the driver’s turn was a negligent turn, as the driver never looked (he failed to exercise due-care). Therefore, on this reading, the driver’s negligently turning was a but-for cause of the collision. On the other hand, it wasn’t the driver’s *negligently* turning that was a but-for cause. Had the driver not been negligent, for example, even had the driver looked both ways and carefully turned, the collision would not have been avoided.

The decision whether the driver was a cause-in-fact of the collision hinges, therefore, on whether the causal analysis looks at the action (or the event) of the driver’s turn, or on the fact that the turn was a negligent one (or the aspect of the turn that was negligent). Determination of this choice will affect which counterfactual scenario to look to: the one where the driver didn’t turn or where he turned while looking.

Normally, individuation is conducted. not on the level of the conduct as a whole (*Empire Jamaica* (1955) 1 AER 452), but by the aspect of the conduct that is tortious. But the entire conduct view has its proponents as well (See Judge Crane’s dissent in *Brown v Shyne*, 242 NY 176, 151 NE 197 (1926)).

The Restatement (Third) lists both tests as acceptable (see Restatement (Third) §26, comments f and g), seemingly favoring the aspect cause test in cases where the conduct is only tortious because it is marginally riskier than alternative conduct that is not (e.g. speeding).

always been so. In fact, for much of the twentieth century, but-for was held in suspicion, primarily due to its difficulties with overdetermination. The first and second Restatements of Torts abjured but-for in favor of the Substantial Factor Test.³⁷ It was only in the more recent, third Restatement, that but-for was rehabilitated. Still, I maintain, a closer look at how but-for operates suggests that this endorsement is not as deep as it looks.

The but-for test for causation is very intuitive. Its power lies also in the ability to clearly explain it to factfinders (particularly juries). The test asks the simple question: had the defendant not done what he did, would the harmful result have occurred?

Using the but for-test for causal questions requires proper framing. The normal question to ask is: but for the act, would the injury have occurred? Similarly, for omissions: but for the omission, would the injury have occurred? For example:

Shooter: Assassin shoots Victim. Victim dies. We ask, had assassin not shot the victim, would he have died?

Gardener: The gardener fails to water the plant. The plant dies. We ask, had the gardener *not-failed to water the plant*, would the plant have survived?

Lifeguard: The lifeguard fails to watch her beach. The swimmer drowns. We ask, had the lifeguard *not-failed to watch the beach*, would the swimmer have survived?

This raises some difficulties, particularly in omission cases. Suppose Lifeguard is looking at her phone, instead of at the water. We can ask, focusing on what the lifeguard was doing: what would have happened had Lifeguard *not looked at her phone*? Alternatively, we can focus on the thing omitted and ask: what would have happened had Lifeguard *looked at the water*? These questions, of course, might have different answers.

³⁷ See Restatement §431 and Restatement (Second) §431.

Perhaps, had Lifeguard not looked at her phone, she would have had a sandwich. Then too, the drowning would have occurred. Suppose we focus on the omission itself. Had Lifeguard not failed to watch the beach, many things could have happened. Perhaps she would have failed to notice the swimmer. Perhaps she would have failed to jump in. Perhaps she would have jumped in and still failed to save him.

Historically, this problem arose in rescue cases on ships. For example, a ship would fail to maintain a sufficient quantity of life preservers. A passenger would go overboard. The question would arise: what would have happened had the preservers been present? Would they have been used? Would they have saved the drowning passenger?³⁸

The question just raised has both an epistemic component, relating to proof, and a more basic metaphysical or semantic component regarding the truth-conditions of the counterfactual claim. When raising the but-for question, it is important to know which possible world we are looking at to test the counterfactual. If a drunk driver hit a pedestrian while speeding: Do we ask what would have happened had the driver not sped? Not driven? Not had anything to drink? Never been born?

To answer this, the law will normally look to the most similar world in which unlawful action is not done. The relevant contrast is drawn between this (wrongful) world and the closest one without the relevant wrongdoing. This eliminates from consideration the worlds in which the driver hadn't been born or hadn't had anything to drink, as these are not wrongdoings in need of analysis. The question as to which wrongdoing to focus on depends on the specifics of the lawsuit.

4.2 Challenges to But-For

But-for causation faces problems, both with overinclusion and under-inclusion. Many conditions that ought not to be classified as “causes” get so classified, because they are but-for

³⁸ *New York Central R.R v. Grimstad*, 264 F. 334 (2d Cir. 1920).

conditions. This overinclusion problem, however, is generally dealt with via proximate causation (indeed, it is often cited as the reason we need that second step) as well as by the wrongful action requirement.³⁹ The big bang is a but-for for all events, including tortious ones, but since it is not a wrongful action on the part of an agent, it is arguably of no consequence that it counts as a factual cause.

Under-inclusion, on the other hand, creates a more serious difficulty, involving cases in which a condition which *is* a cause would not be so classified under the but-for test. The sorts of problems that generate this difficulty are the already familiar problems of preemption and overdetermination that plague the counterfactual analysis of causation more generally.⁴⁰ A discussion of the viability of the but-for test of causation, therefore, should look closely at preemption and overdetermination. To complete the picture, we will also discuss how but-for causation handles omissions, which create both overinclusive and underinclusive problems of their own, depending on how omissions are dealt with. Finally, combining these two analyses leads to the question of omissive overdetermination.

4.2.1 Multiple Sufficient Causes: Preemption and Overdetermination. The legal literature is familiar with the problems of preemption and overdetermination.⁴¹ Consistent application of the but-for test at the level of cause-in-fact would seem to rule out liability in these cases, whereas it clearly should not. Lawyers often refer to these cases as involving “multiple causes” or “multiple wrongdoers”, or, influenced by the solutions offered by the courts, “multiple sufficient causes”.⁴² The general idea is simple enough: harm occurs, linked to which is more than one party,

³⁹ See fn. 11. See also discussion in Moore (2011).

⁴⁰ See also the extensive discussion of these in Chapters 1 and 2. Discussion of these phenomena in the legal context follows.

⁴¹ See extensive discussion in Chapters 1 and 2.

⁴² Which is how Restatement (Third) §27, which refers to them, is titled.

each of whose wrongdoing was or would have been sufficient (at least for part)⁴³, and neither of which was necessary, for the injury. While most legal commentators espouse some form of the but-for test, as the general test, almost none recommend blocking liability in these cases. In fact, preemption and overdetermination cases are singled out as an exception to but-for. The need for such an exception is puzzling if but-for is in fact the meaning of factual-causation.

4.2.2 Preemption. In preemption cases, C and D each are sufficient for E, but C arrives first, preempting D.⁴⁴ In such cases, our causal intuitions are clear: C caused E, D did not cause E. But the but-for analysis seems not to capture this, since neither C nor D is a but-for condition. This has the double problem of leaving the victim without recourse in an incident clearly caused by wrongdoing (since neither C nor D are ruled a cause) as well as failing to distinguish between C and D in terms of their connection to the harm.

The law, despite the but-for test, adheres to causal intuition in preemption cases. Once harm has occurred, incomplete causal sequences will not count.⁴⁵ Furthermore, the law assumes an “acceleration rule”, according to which causes accelerate their effects.⁴⁶ Thus, if the preempting cause is wrongful or tortious, the preempting party is liable but the preempted party is not. However, if the condition preempted is not tortious (if the harm would have occurred anyway via natural causes), liability, while existent, is limited: since plaintiff was going to be harmed anyway, the wrongdoing only made him worse off by having the damage occur earlier than it would have

⁴³ There are distinctions to draw here between cases in which: (i) both parties are sufficient; (ii) only one party is sufficient for the entire injury, the other is minor in comparison; (iii) in cases of more than two wrongdoers, where no party is either sufficient or necessary, but various subsets of them are sufficient. The latter is a serious challenge in toxic torts.

⁴⁴ This is shorthand for the more precise formulation: Defendant₁'s tortious conduct (C) and Defendant₂'s tortious conduct (D) are each such that, alone they would have been sufficient for Plaintiff's harmful effect (E).

⁴⁵ See Restatement (Third) §26 comment K (“After a person suffers harm, another causal set may exist that, had the initial cause not existed, would have caused the same harm”) and §27 comment H (“This Section [applying sufficiency as grounds for causation in fact – YA] does not apply to tortious conduct that only could have caused harm at some time after the harm actually occurred.”)

⁴⁶ See Restatement §26 comment K. See also *Oxendine v. State* 528 A 2d 870, 872–3 (Del 1987); *People v. Dlugash* 41 NY 2d 725, 363 NE 2d 1155, 395 NYS 2d 419 (1977) (involving two bullets, only the first is cause).

otherwise. In these cases, Plaintiff is compensated by whatever amount he was made worse off by this hastening.⁴⁷

For example, in *Dillon*, a boy fell off a bridge to his inevitable death, but on the way down was electrocuted by Defendant's negligently exposed wires.⁴⁸ The wires preempted the death by falling, and are thus the cause of death, but the amount owed by the defendant was just the value of the moments of life the boy lost on his fall (and perhaps whatever additional pain and suffering electrocution entails).

On the other hand, where both the preempting and the preempted cause are tortious, this limitation is not in order. In these cases, the author of the preempting cause is liable for all the damages, without regard to the inevitability of the preempted condition.

The difference between these two cases (where preempted party is tortious and where it is not) can be explained: in cases like *Dillon*, where the injured party is doomed, there is liability, but it is limited by the actual worsening of plaintiff's fate. On the other hand, where the two causes are *both* blameworthy, the injured party is not doomed, but is made worse off by wrongdoing. This being-made-worse-off is precisely what is being compensated for. Since the preempted wrongdoer has done nothing to worsen the plaintiff's condition, the entirety of damages falls on the preempting party that actually caused the plaintiff's injury.

4.2.3 Overdetermination. When two potential causes overdetermine the effect, neither is a but-for cause. In principle, here, unlike in preemption, biting the bullet and ruling out both as causes is conceptually feasible,⁴⁹ but this is not a route the law takes. The general solution is to hold both

⁴⁷ In criminal cases, this is irrelevant, in that hastening death is still just as much homicide if the death is to a victim who had one day to live as it is to a victim who had one decade to live. One qualification is in order: a case can be made that certain hastenings of harm, including death, are justified or excused in part due to the minimal duration (or quality of life) remaining to victim. This would be the sort of arguments given in defense of active euthanasia or certain acts of duress or self-defense. See Moore (2009) chapter 3 for extensive discussion.

⁴⁸ *Dillon v. Twin State Gas & Electric Co*, 163 A 111 (NH, 1932).

⁴⁹ As Lewis (1986b, 194) famously said about overdetermination: spoils to the victor.

parties liable, jointly and severally.⁵⁰

Overdetermination cases come in several variations.

Concurrent cause overdetermination involves two (or more) forces, each sufficient to cause the harm (and which would have been a but-for, absent the other(s)). A classic example of this is two independently set fires, each of which is sufficient to burn plaintiff's property, which join as one fire (if the fires don't join, each defendant is liable for the proportion of damages his fire caused; this would not be a case of overdetermination).

Unlike in preemption cases, in overdetermination cases where only one of the causes is of wrongdoing and the other is innocent (for instance, two fires, one of which is culpably started by defendant, the other faultlessly), the majority view is to impose full liability on the wrongdoer. Since the wrongdoer has caused the harm, his liability is not lessened by the inevitability of the injury by another. This has been a matter of controversy.⁵¹

Additionally, there are overdetermination cases in which only one of the forces is sufficient, but both contribute. For example, two fires are set and adjoin, but one of the two was small enough that, had it been the only fire, would have been easily handled by the fire department. Here too, there is some dispute as to whether the minor fire is properly seen as a cause-in-fact.

⁵⁰ In torts (see Restatement (Third) §27). In criminal law, each would simply be liable, simpliciter. Interestingly, this is often confused with a related issue pertaining to proof, in which the presence of multiple factors renders determination of the causal question difficult. The traditional solution of cases like this is one in which the law shifts the burden of proof. This solution is not quite the same as pronouncing each of the wrongdoers a cause. The most famous case of the burden shifting strategy doesn't involve causal overdetermination at all. In *Summers v Tice*, 33 Cal.2d 80, 199 P.2d 1 (1948), two hunters each fired in the direction of a third hunter, wounding him with one bullet, not definitively traceable to either gun. This meant that the probability of either shooter's being the cause of the injury was 50%, shy of the standard burden of proof in a civil case. Rather than absolving each shooter, the court ruled that the burden of proof shifts from plaintiff to the defendants, such that it is incumbent upon each to prove that he was not the source of the shot, otherwise liability is joint and several. This burden-shifting strategy has been used in other more complex multiple tortfeasor cases.

⁵¹ The general rule is that both fires are seen as causes, regardless of whether both are the result of wrongdoing. This is the rule set in *Anderson v. Minneapolis, St. P. & S. Ste. M. Ry.*, 179 N.W. 45 (Minn. 1920). There is a rival view (espoused in *Cook v. Minneapolis, St. P. & S. Ste. M. Ry.*, 74 N.W. 561, 566 (Wis. 1898) and which has some authority in English law [Moore (2009, 115)] according to which both forces must be tortious, otherwise defendant escapes liability. See also: *Kingston v. Chicago & N.W. Ry. Co.*, 211 N.W. 913, 914 (Wis. 1927).

For our purposes, however, what is important to see is that none of these solutions follow from a strict but-for analysis.

We should distinguish overdetermination from joint causation (in which several factors are jointly necessary), and each of these from intervening causation (in which an intervening cause renders prior factors obsolete). Joint causation cases pose no special problem for but-for. Intervening causes require special treatment if they are seen as relevant to factual causation.⁵²

The law is never really clear as to whether it finds the wrongdoer liable in cases of overdetermination: (i) despite his *not being a cause* (because he is not a but-for) or (ii) because he is a cause, despite not being a *sine qua non*.⁵³

The former ((i)) preserves the integrity of the *sine qua non* test. The idea would be that as a matter of justice “as between the parties” it is better that the loss fall upon a definite wrongdoer than on a definite victim of wrongdoing. One serious problem with such a view, however, is that the assumption that these parties are parties between whom there is a matter to settle presupposes a causal connection between them: if A and B have not caused C’s injury, what singles out either A or B as potential compensators from among the entire population of wrongdoers? Why not hold liable any wrongdoer, including those who clearly had no connection to the injury?

The second route, that sees the overdetermined wrongdoer as a cause, despite not being a *sine qua non*, would mean that either: (a) for some reason the but-for test doesn’t apply as a criterion for causation in cases of overdetermination or (b) the but-for test never really was the criterion for causation after all. Perhaps but-for is merely a reasonably effective heuristic for detecting genuine

⁵² As a matter of proximate causation, on the other hand, they wouldn’t affect the but-for analysis.

⁵³ The same can be said for preemption.

causation, but genuine causation itself is not a matter of counterfactual dependence.⁵⁴ This of course is the line I am pushing throughout this thesis. As such, overdetermination and preemption are important pieces of the case against but-for causation as the meaning of causation in fact.

4.2.4 Omissions. Additionally, a point not always appreciated as relevant to the law’s causal doctrines, the law treats actions and omissions differently: while, strictly speaking, the law purports to treat both acts and omissions as causal (the law seeks causal connections between wrongful acts or omissions and harm as a precondition for liability), negative duties not to cause harm are far more prevalent than positive duties to act or prevent harm, and duties not to harm via action are more prevalent than duties not to harm via omission.⁵⁵ Omissions (and preventions) require a prior duty to act⁵⁶ (whereas actions are not said to require a duty not to omit).⁵⁷

As we have seen, the ability to deal with omissions as causes is seen by advocates of dependence theories of causation as a mark in their favor. In particular, the relative ease with which the counterfactual test handles omissions is seen as reason to prefer it as an account, both of causation

⁵⁴ See Restatement (Third) §27 comment C (“rationales”), which comes close to suggesting this “...while the but-for standard provided in §26 is a helpful method for identifying causes, it is not the exclusive means for determining a factual cause. Multiple sufficient causes are also factual causes because we recognize them as such in our common understanding of causation, even if the but-for standard does not. Thus, the standard for causation in this Section (allowing recovery in overdetermination cases – YA) comports with deep-seated intuitions about causation and fairness in attributing responsibility.”

⁵⁵ This is true both in Anglo-American common law systems as well as in Continental systems. It is true that Continental systems are famous for being more inclined to impose positive duties (famously in bystander rescue cases), but the general principle that positive duties require special legal sanction, and that they are the exception, rather than the rule, still stands.

⁵⁶ Model Penal Code §2.01(3): “Liability for the commission of an offense may not be based on an omission unaccompanied by action unless: (a) the omission is expressly made sufficient by the law defining the offense; or (b) a duty to perform the omitted act is otherwise imposed by law. Similarly, the German Strafgesetzbuch (StGB) §13.

Famously, in U.S. law there is no duty to save a stranger in peril. See *People v. Beardsley*, 150 Mich. 206, 113 N.W. 1128 (1907). For the parameters of this duty, see *Jones v. United States*, 308 F.2d 307 (D.C. Cir. 1962), the categories include duties based on statute, duties based on contract, duties based on the voluntary assuming of responsibility as for the care of a child, and duties based on legal relationships, such as between parent and child or husband and a wife.

⁵⁷ A further asymmetry between acts and omission concerns the potency of the wrongful act. As we saw, when discussing preemption and overdetermination cases, one is liable for wrongful actions, even when abstaining from this action would have made no difference to the outcome. The same is not true of omissions.

Additionally, omissions rarely function as intervening causes that break a causal chain. If A pollutes the stream and B diverts the stream to the town’s reservoir, B’s actions might negate A’s. But if C, an onlooking security guard, fails to prevent either action, this omission does not sever the connection between B’s actions and the result.

and of causation in the law.⁵⁸ On views suspicious of omissions as causes, this weighs against the counterfactual dependence view. My point, however, is that if omissions can be causes, the law's asymmetry between duties to act and duties not to harm (between misfeasance and malfeasance) seems anomalous.

4.2.5 Omissive Overdetermination. Combining the complications in overdetermination cases with causation by omission, we arrive at the most perplexing set of cases for cause-in-fact: omissive overdetermination cases. If standard overdetermination involves two positive causes, these cases involve one or more negative difference makers. A famous example of this is *Saunders*:⁵⁹ a rental car agency negligently failed to repair the brakes of Defendant's rental car. Defendant (not knowing of the defective brakes) ran Plaintiff over, negligently failing to attempt applying the brakes. Both omissions (the rental car agency's to repair the brakes and Defendant's to apply them) were sufficient for the accident, and neither was necessary (the accident would still have occurred had only one of these omissions occurred). The law has hesitated to follow the logic of other, active overdetermination cases here in finding both omitters liable. In *Saunders*, for example, the rental car agency was absolved of liability.⁶⁰

This problem frequently arises in failure to warn cases. If Manufacturer fails to provide a specific warning in the instruction manual for a dangerous product and Consumer fails to read the

⁵⁸ When A wrongfully omits to perform an action and B is harmed, A is liable for B's harm if, but-for A's omission, B would not have been harmed. Essentially, we can put this way: A is liable to B for harm when A wrongfully omits to Φ , only if, had A Φ -d, Φ -ing would have prevented the harm. A harms B by prevention, if A Φ -s, B is harmed, and A's Φ -ing prevented B from getting something he was entitled to get. Notice that this analysis requires that the omitted action would have been efficacious. I called this case "relative" due to the difficulties with the absent relata, discussed in Lewis (1986b) and (2004b).

⁵⁹ *Saunders System Birmingham Co. v. Adams*, 117 So. 72 (Ala 1928).

⁶⁰ Similar cases include: *Rouleau v. Blotner* 152 A. 917 (N.H. 1931) (a driver's negligent failure to signal before turning was not cause of an accident if the oncoming driver was not looking); *Weeks v. McNulty*, 48 S.W. 809 (Tenn. 1898) (negligent failure to furnish a hotel with a fire escape didn't cause death if the decedent couldn't have used it anyway), as well as *Grimstad* mentioned above (n. 38). On the other hand, there are cases in which courts have found such omissions to be "substantial factors" and hence grounds for liability, e.g. *Kitchen Krafters Inc. v. Eastside Bank*, 780 P.2d 567 (Mont. 1990). See also Fischer (1992) for an extensive discussion.

instructions, and the product causes injury, is the failure to warn a cause? Is Consumer's failure to read a manual that contained no warning a cause?

The above are cases in which one omission succeeds another in time. One difficulty is that it is not clear if the proper way to characterize these is as a case of overdetermination (since each omission suffices for the injury as it occurred) or as preemption (since one omission prevents the other's ability to influence the outcome), and if the latter, which one is the preempting and which the preempted cause? This, by itself, already hints at some of the difficulties in characterizing omissions as causal, as discussed in chapters 2 and 3.

In cases in which the omissions are actually concurrent (for example: each of two individuals has the duty to input her part of a code in order to prevent a rocket launch and each culpably omits to do so) there is considerable authority that neither party is liable (at least in torts), once again highlighting an asymmetry between acts and omissions.⁶¹ A particularly intriguing case involving concurrent forces, one of which was an omission, but which was of far lesser force than the other, active, but non-tortious cause, is *City of Piqua v. Morris*⁶² in which the defendant negligently maintained a dam which was overwhelmed by flood waters during a severe storm. The flood was of such intensity that, even had the dam been maintained properly, it would not have held against the flood. Defendant's negligence is clearly not a but-for cause. On the other hand, it was a sufficient cause for flooding. Should this negligence be seen as causal, like in a twin-fire case, or should its influence be seen as negated, as in the cases of unapplied brakes and unread warnings?

While the law struggles with forming the correct counterfactuals in these cases, the difficulties inherent therein suggest that something is amiss in the setup. It is not at all obvious that there is a relevant distinction between preemption and overdetermination in the case of omissions.

⁶¹ See Moore (2009, 116).

⁶² 120 NE 300 (Ohio 1918).

This would not be surprising if omissions (and preventions) were not causes at all. The analysis for such cases is a quasi-causal one that requires more nuance.

The challenges just listed: preemption, overdetermination, omissions, and omissive overdetermination, are not unique to but-for. Any adequate theory of causation should address them. The lesson I do want to draw here, however, is that there are serious cracks in the counterfactual framework and that the law, rather than biting the bullet in these cases, adjusts its causal doctrines. As I will propose later in the chapter, a productive notion of causation is helpful both in understanding what the law is doing and in what it ought to be doing in these cases.

5. Modifications to But-For

Several solutions to these and related problems have been proposed within the but-for framework, more generally. I discuss them here.

5.1 The Refined-Description But-For Test

One attempt to grapple with the problems to but-for, in particular in relation to overdetermination, is to resort to more fine-grained descriptions of the injury. The law refers to this as giving a more detailed description of the injury or the manner of its occurrence.⁶³ This account is similar to Lewis'⁶⁴ Influence account or Mackie's⁶⁵ concrete event account. In overdetermination cases, each wrongdoer would be necessary to the manner in which the effect is caused (e.g. the time and place of the effect). The account should work similarly well for late-preemption, in which the preempting cause accelerates the effect relative to the preempted condition.⁶⁶ Early-preemption, on

⁶³ “Whenever that would not have happened when and as it did happen, had it not been for this, this is an actual cause of that” (Perkins (1969, 689)). See also Becht & Miller (1961, 17) (cited in Wright (1985, fn 8), where they propose describing the effect of A’s fire as the precise position of the smoke and ashes consequent thereupon. The test also received an endorsement from the Model Penal Code, see §2.03(1) (1985).

⁶⁴ (2000).

⁶⁵ (1974).

⁶⁶ But see also the case Strevens (2007) raises, discussed in Chapter 1.

the other hand, won't always be solved in this manner. Take a case of a back-up assassin, ready to poison the chalice in case the first assassin does not. Assuming the poison is the same, the drink is the same drink. It is not clear how the manner, time, or place differs between them.

For omissions, this test would problematically suggest that even inefficacious omissions should ground liability, at least in cases in which the omitted action would have had some influence on the outcome. Suppose, for example, that defendant nurse failed to feed an elderly patient in her care. That night, the patient was shot dead by an assailant. Even had the nurse done her duty, the plaintiff-patient would still be dead. In this, her omission made no difference. But, had she done her duty, he would not have died on an empty stomach. This circumstance is counterfactually dependent on her omission.

This problem exists in cases of actions as well, and points to a larger problem with this strategy: failure to distinguish which aspects of the effect are in fact relevantly harmful. On the other hand, once we can individuate those relevant aspects, we no longer need this test. If there are reasons why the patient's being shot with an empty stomach is relevant (suppose he would have been strong enough to survive the shot or to run away, or suppose that death is more painful under the circumstances), then that very harm becomes the basis for the lawsuit, and standard counterfactual dependence will do. It is only when the circumstances are irrelevant that this test is needed, in which case it seems ill-motivated.

5.2 The Substantial Factor Test

But-for's dominance as the formula for factual causation was not always a given. During the twentieth century, many courts and commentators favored the Substantial Factor test. This test arose, in large part, as a solution to overdetermination problems, and was thought superior for these reasons.

The first and second Restatements favored this test as well⁶⁷, and it still appears in the jury instructions in many American jurisdictions.

The idea is that a factual cause is only one whose contribution is substantial. In the famous twin fires case,⁶⁸ two fires, each of sufficient magnitude to burn plaintiff's property, merged. Neither fire was a but-for, but the Minnesota court ruled that each fire could be deemed a cause, so long as it was "a material factor in the destruction of the property".

Substantial factor, long the dominant formulation in American tort law, is now disfavored.⁶⁹ The test has been controversial from the outset, both for its vagueness, as well as for the confusion created as to whether substantial factor is meant as a replacement for but-for,⁷⁰ a clarification of the meaning of but-for⁷¹, as a special exception for overdetermination cases, or as an additional limit on factual causation.⁷²

Given this lack of agreement on the meaning of the substantial-factor test, it is difficult to spell out precisely how the test would handle cases of preemption, overdetermination, and the like. It is tempting to read "substantial factor" as picking out a productive relation of causation,⁷³ but as there is no unequivocal reading of this test, little is gained philosophically by doing so.

5.3 The NESS Test

Given the trouble that the sine qua non test gets into with multiple redundant wrongdoers,

⁶⁷ See Restatement §431 and Restatement (Second) §431.

⁶⁸ *Anderson v. Minneapolis St. P & S.S.M. Ry. Co.*, 179 N.W. 45 (Minn. 1920).

⁶⁹ See Restatement (Third) §26 comment J. See also *Ford Motor Co. v. Boomer*, 736 S.E. 2d 724 (Va. 2013), abrogating substantial factor language under Virginia law, and *Wannall v. Honeywell International Inc.* 292 F.R.D. 26 (D.D.C. 2013), aff'd 75 F. 3d 425 (D.C. Cir. 2014).

⁷⁰ As arguably happened in *Anderson*. This seems to be the approach in *Hamil v. Bashiline*, 392 A. 2d 1280 (Pa. 1978). See also *Herskovits v. GroupHealth Coop.*, 664P.2d 474 (Wash. 1983) (opinion of Dore. J., joined by Rosellini, J.); *Van Vleet v. Pfeife*, 289 N.W.2d 781 (N.D. 1980); and *Ehlinger v. Sipes*, 454 N.W.2d 754 (Wis. 1990).

⁷¹ *Abrams v. City of Chicago*, 811 N.E. 2d 670, 675 (Ill. 2004).

⁷² *Mitchell v. Gonzalez* (816 P.2d 872) (Cal. 1991) treats substantial factor as refinement of but for (in essence, but-for is still required, but some but-fors that are insubstantial get thrown out).

⁷³ Moore (2009, 105) suggests that, in its original formulation, the substantial factor test for causation can be seen as invoking a singular, primitivist, scalar causal relation.

courts have thought to look to sufficiency rather than necessity to establish causal connection.⁷⁴ On a sufficiency test, if each wrongdoer's contribution was not a but-for cause, only because of the presence of an additional independent wrongdoer,⁷⁵ the overdetermination does not defeat the causal connection. Courts have sometimes justified this along the lines that the wrongdoer cannot evade liability merely because of the presence of an additional wrongdoer.⁷⁶ This restores intuition, but it seems ad hoc. Normally, sufficiency is not required to establish causation in fact, so why is it so only in cases with multiple wrongdoers? Furthermore, sufficiency itself is impossible to satisfy. No action by itself is sufficient for its effects. Pulling the trigger on the gun still requires the cooperation of nature for its lethal effect: the gun must be loaded, the barrel must be straight, the victim must not move out of the way, or be wearing a protective suit. This is the familiar Millian point about causes.

An account of sufficiency as causation will normally take a *set* of causes as sufficient. Properly speaking, a factual cause of the harm is a set of circumstances which, together, jointly suffice for this effect. But we can single out any actions as a cause if it is a non-redundant member of such a set. Each such member itself is not sufficient but is part of a set that is.

An influential theory of this sort for causation-in-fact is advocated by Richard Wright,⁷⁷ and is deemed NESS causation: a cause is a Necessary Element of a Sufficient Set of conditions for the

⁷⁴ Again, the *Restatement (Third) of Torts* §27: "When an actor's tortious conduct is not a factual cause of physical harm under the standard in §26 only because another causal set exists that is also sufficient to cause the physical harm at the same time, the actor's tortious conduct is a factual cause of the harm". Some authors, notably Richard Wright, interpret the Restatement (Third) as essentially adopting the NESS criterion, since, in the simple case NESS and but-for agree (Wright [2001], 1103), see also: Sebok (2017). This seems too quick, however, since the Restatement (Third) is reluctant to adopt Wright's NESS solution to: overdetermination cases involving de minimis causal contribution (e.g. throwing a match into an existing forest fire); cases in which one condition is sufficient, whereas the other is not; cases in which one condition overwhelms the other in terms of magnitude (even though both are sufficient); and cases of concurring omissions. See Restatement (Third) §27 Reporter's Notes to comment i ("Special Cases Involving Multiple Sufficient Causal Sets and Preempted Conditions").

⁷⁵ If the wrongdoers are not acting independently, they may be seen as a corporate body for the purposes of liability.

⁷⁶ Restatement (Third) §27, comment c: "A number of justifications exist for [moving to sufficiency – YA]... A defendant whose tortious act was fully capable of causing the plaintiff's harm should not escape liability merely because of the fortuity of another sufficient cause."

⁷⁷ Wright (1985). The account is inspired by Hart & Honoré (1959) and (1985) and by Mackie's (1974) INUS conditions.

outcome.⁷⁸ NESS and but-for agree in most run-of-the-mill cases, but NESS is said to improve upon but-for, precisely in the sorts of cases in which the but-for gets into trouble: pre-emption and overdetermination.⁷⁹ In those cases, neither party is a but-for cause, whereas either or each may be a NESS. Just as there can be more than one sufficient condition, there can be multiple NESS conditions. In twin fires, each fire (given the world, but absent the other fire) is sufficient for the outcome, and is therefore a NESS. The idea is that a concrete existent circumstance, of which the fire is an essential part, existed, and which sufficed for the burning. Even though in the actual world, in which there were two fires, neither fire itself was necessary, the actual world contained severable parts (that can be described independently of one another), each of which on its own was sufficient for the result.

In a case in which only one fire is sufficient, the smaller fire is still a NESS, because the smaller fire is part of a larger set that includes *part of* the larger fire, which, combined, form a set sufficient for the outcome.

Here is an illustrative example from the Third Restatement: suppose three people lean against a car parked at the edge of a precipice.⁸⁰ The weight of the three pushes the car over the edge. Suppose further that no one individual is of sufficient weight to push the car himself, but any two are. In this scenario, none of the three individuals is a but-for cause of the car's falling over; the contribution of no one of them was necessary for this consequence. Similarly, no individual's effort is sufficient,

⁷⁸ NESS operates on Mill's idea that complete causes are sets of conditions. The idea is that a cause needn't be, strictly speaking, either necessary or sufficient for the effect; rather causes are necessary to the sufficiency of the set (i.e. necessary elements of a minimally sufficient set of conditions). NESS first appeared in Hart and Honoré (1959, 106): "A condition may be necessary just in the sense that it is one of a set of conditions jointly sufficient for the production of the consequence: it is necessary because it is required to complete this set". This "weak" sense of necessity is contrasted with the "strong" sense of necessity: necessary for every set of sufficient conditions. Much of the exposition of this idea in the law drew on Mackie's INUS conditions.

⁷⁹ If a condition is a necessary condition (i.e. a but-for) it is also a NESS, but the reverse is not true. Technically, if a condition is a sufficient condition it is a NESS condition as well, but, the whole point of Millian analyses, like NESS, is that no single condition ever is a sufficient condition. It is only a complete set of antecedent conditions that suffices for the effect.

⁸⁰ §27, comment f.

since each required the contribution of at least one other.⁸¹ The NESS test will treat each of them as a NESS: any subset of the three containing the efforts of two of the members of this group is a sufficient condition for the outcome. Take any of these subsets. In each, both members of this subset are necessary for the sufficiency of that set towards the outcome. Therefore, both are necessary members of that sufficient set.

NESS's focus on sufficiency allows it to ignore the difference between acts and omissions. The gardener's failure to water the plant is a necessary element of a sufficient set of conditions: had the gardener watered the plant, the sequence of events would not be sufficient for the plant to die.⁸²

In preemption cases, the preempting cause is, given the conditions present at its operative time, sufficient for the outcome, whereas the preempted cause lacks a condition necessary for its operation (e.g. the second fire is only sufficient if there is a house to burn down when it arrives). Overdetermination, on the other hand, will involve both conditions as NESS. Each fire is a member of a set of antecedent conditions that is sufficient for the burning of the house.

Omissive overdetermination creates trouble. Wright's treatment of omissive

⁸¹ For the purposes of this example, I am ignoring the possibility of treating the three as a corporate body. Suppose each of the three acts alone, unaware of the actions of the others.

⁸² This move is questionable. A sequence of events that made no mention of the gardener, but merely mentioned the biochemical process that began before the gardener "failed" to water the plants would, itself, be sufficient for the plant to die. Thus, the gardener's omission was not necessary for the sufficiency of *that* set. In other words, if the set consisting of the biochemical process and omitting any mention of the gardener at all is sufficient, then the gardener's omission is redundant. If it is not sufficient, because we need to specify what the gardener did, then this would be true of each "actual" omission, not just the gardener's, but the Queen's, etc. If this is so, if we need to specify of every potential interferer that it was not interfering, it is not clear how we can take a subset of any sort short of a complete state description of the universe (including the movements of each individual or object in it, stating at the very least that it did not water the plant). If this is so, the ability to isolate multiple sufficient subsets of this world state is not possible. This would destroy NESS's solution to standard overdetermination cases. Take a case of two fires. Fire one is sufficient to burning the house, but is not necessary if fire two is on its way. Can we omit mention of fire two? Don't we need to be specifying what it is up to to ensure that its presence doesn't defeat either the sufficiency or necessity of fire one? Furthermore, it is not clear to me how the gardener's not watering the plant is part of any actual sequence at all. Wright might answer that the sequence involving the omission is simply a different causal set, and thus the gardener's failure is necessary to that set (since removing that omission defeats the sufficiency of that set). This would require a special reading of "removal". To remove the omission from that set means to replace it with a non-omission, namely a commission, rather than just leaving it out and running the entailment. This runs contrary to the type of causal entailment (rather than a most-similar possible world type counterfactual) involved in causal sufficiency found in, e.g. Strevens (2007), and advocated by Wright himself. The idea is supposed to be that the subset which is sufficient entails the result via causal law.

overdetermination has been to view such cases as preemption cases. The trouble is with identifying which preempts which.⁸³

Take the rental car example above: the agency negligently fails (an omission) to repair the brakes (the “first omission”); the driver negligently fails to apply to brakes (the “second omission”), thereby crashing into the pedestrian. Is the first omission a NESS? There is an actual sequence of circumstances in the world, including the first omission and the driver in motion, headed towards the pedestrian, sufficient for the crash. The first omission is necessary for the sufficiency of that set. On the other hand, there is an actual sequence of circumstances consisting of the driver driving the car and failing to press the brakes, also sufficient for the crash. The second omission is necessary for the sufficiency of *that* set. So the second omission is a NESS.

One option is to take each omission as a NESS, turning this example into one of ordinary overdetermination. This reading is odd. Imagine the driver, just before pressing the brakes, discovers the brakes are broken. Knowing this, he doesn’t bother to press on the brakes. Is his failure still a causal contribution in such a case? Surely not. But it is hard to see how this sort of knowledge could affect the causal contribution of the omission. This suggests that the first omission preempts the second. Interestingly this is not Wright’s move.

Wright argues that the second omission preempts the first: if we look at the sequence as it progresses in time, the driver’s failure to step on the brakes preempts the efficacy of the agency’s failure to repair them.

As far as readings of preemptive causal structure go, either reading (the first preempting the

⁸³ See Fischer (1992) and Moore (2011). Wright (1985) argued that the failure to press the brakes preempts the failure to repair.

A similar issue arises in the metaphysics literature, see Collins (2004) (also discussing McDermott (1995)). Compare two cases: 1. A catches a ball, preventing the ball from shattering the window. Had A not caught the ball, B would have; 2. A catches a ball. Had A not caught the ball, it would have hit a brick wall. Had the wall not been there it would have shattered the window. In either case, did A prevent the shatter?

second or the second preempting the first) seems plausible. But that is precisely the problem. We don't have this sort of puzzle in a standard case of preemption with active causes. The power of the preemption examples lies in the fact that we can unquestionably identify which cause preempts which in such cases.⁸⁴

Similarly, we can construct an argument in each case that *neither* is a NESS.

Take the first omission. When the agency fails to repair the brakes, is this sufficient for the crash? No, only if an entire sequence of events plays out involving the driver driving the car at the victim. At any moment if the car is stopped or if driver veers off path, the result will not occur. But in that case, the sufficient sequence also includes the driver's failure to press the brakes, rendering the first omission superfluous (and thus not a NESS).

Take the second omission: it is part of a sequence of events sufficient for the crash. But that actual sequence contains a car with no brakes. In other words, the removal of the second omission from the set changes nothing in the sufficiency of the set, rendering it not a NESS.

6. Productive Causation: A Sensible Way Out

6.1 The Appeal of a Productive Account

As I've argued throughout this thesis, analyses of causation that look simply to necessary and sufficient conditions, or to dependence relations more generally, miss their target: causation itself. The law is no different. A better account of causation is productive. This requires some finessing, as we shall show, in particular, with proximate causation and with omissions. As an opening suggestion, I propose that, at least for "cause-in-fact", "causation" just means *causation*. For Defendant to be a cause-in-fact of Plaintiff's harm, Defendant must have actually caused that harm. (We will get to

⁸⁴ This needs a bit of care, in cases of preemptive prevention we have potential active causes: catching the ball or the impact of the brick wall. In such cases, we still deal with negative causation (prevention): what is being "caused" is an absence (the absence of the shattering). My point stands in cases like this: when causation proper is involved, we are not confused by preemption cases. When quasi-causation is involved we might be. The diagnosis suggested is that these are not cases of genuine causation at all.

proximate causation in due course.)

6.2 Historical Background

While this analysis may seem revisionist, it makes good sense of the case law and has historical resonance. Despite its Latin nomenclature, *sine qua non* is a relatively recent test of causation and was not the standard test in Roman law. In common law, liability for physical injuries historically requires trespass against the person *vi et armis* (by force and arms), which required direct physical contact.⁸⁵ Such trespasses were seen as intrinsically violent acts.⁸⁶ The causal impact of such directly caused injuries was taken as basic, without requiring further causal analysis. Such a conception resonates with a process-based or similar test for cause-in-fact and with a directness test implied therein. The temptation to interpret causation more broadly arose later.

As early as the 16th century, issues of indirect causation arose. In *R. v. Saunders*, Defendant gave a poisoned apple to his wife, who, not knowing its being poisoned, gave it to her daughter, who ate it and died.⁸⁷ Another famous trespass case, the “Squib case”, involved a firecracker tossed around a crowded market.⁸⁸ The ultimate victim in these cases was neither the intended victim nor the party directly struck by the defendant. Nevertheless, liability was extended to the “natural and probable consequence of the act done...mediate or immediate”.⁸⁹

As common law expanded liability beyond basic trespass, the wrongdoing inherent in acts of

⁸⁵ Blackstone (1769, Vol. 3, 153) requires that the act be “immediately injurious...and therefore necessarily accompanied by some degree of force”. This as opposed to *trespass on the case* “where the act is in itself indifferent and the injury only consequential, and therefore arising without any breach of the peace”.

⁸⁶ Binder (2016) argues interestingly that, historically, the causal element was extraneous, even to what we now take as paradigmatic result crimes, such as homicide. “Killing” meant striking dead with a weapon. There was no room for a separate causal question: did the strike cause the death? Similarly, most torts cases were trespass. It was in the modern period (especially in the 19th century) when more remote harms became prevalent, and, when, under the influence of Utilitarians, deterrence became more central to criminal law, that negligence and causal responsibility were developed as doctrines. Unlike a strike of an axe, negligence’s relation to the result is far more abstract.

⁸⁷ *R v. Saunders*, 75 Eng. Rep. 706 (Q.B. 1576).

⁸⁸ *Scott v. Shepherd*, 96 Eng. Rep. 525 (K.B. 1773).

⁸⁹ *Id.*

liability was recharacterized as causation of harm, rather than as engaging in unauthorized violence.⁹⁰ It was in negligence cases, in particular, where causal sequences could be long and remote, that theorizing remote causation mattered. This is where proximate causation, limiting liability to consequences “natural and proximate”⁹¹ became standard analysis. The important difference in law was between immediate and direct causation, taken to be self-evident, and indirect or remote causation, which diminished causal responsibility.

As discussed above, this distinction came under criticism from Millians, arguing that no antecedent condition has a stronger claim of directness or causation than any other. Thus, no single event was “the” cause. While the Millian point is well-taken, it is easy to take it too far. Proximate causation does require some care if it is to be analyzed properly, but causation-in-fact needn’t be analyzed as a necessary or sufficient condition. The historic conception of a physical or direct cause has merit, in at least two respects: in requiring a physical connection or similar productive relationship between cause and effect; secondly in requiring that the causal connection not be mediated by a third factor. When such mediation occurs, it is the mediating condition that is proximate, rather than the mediated (at least relative to one another). Mill’s insight may be apt for the inability to distinguish causally between various contributing contemporaneous conditions. But it doesn’t follow from this that we cannot screen off and rule out more distal causes due to other,

⁹⁰ Binder (2016, 159 and 172).

⁹¹ *Ward v. Weekees*, 7 Bing. 211, 212 (1830)

more proximate ones, downstream from them⁹².

As argued above (in the discussion of the two-step analysis), it is proximate causation that the law requires, not but-for. But-for is mistakenly taken as the only sensible approach to the factual first step of a two-step analysis. Once this error is identified, restoring an explicitly productive

⁹²What the law means by “proximate causation” is unclear and is very much up for grabs. As we have seen, this notion has been dismissed in the legal literature as a misnomer, on the assumption that nothing factual or causal is picked out by the “proximate” modifier. I disagree. There is a perfectly defensible notion of proximate causation that tracks the metaphysics of causation and which delivers some, if not all, of the key verdicts desired from “proximate causation” as a necessary condition for liability or responsibility.

The key insight that distinguishes my analysis of this metaphysical notion is that proximate causation is a relative, rather than absolute term. Proximity in this context is a three-part relation. Furthermore, the proximity in proximate causation is not a measure of distance or any other magnitude, rather it relates to ordering along a structured path.

There is no fact of the matter whether C is a proximate cause of E. There is, therefore, no distance, in time or space, that is sought after to determine whether, for example, poisoned candy in California is sufficiently near its victim in New Jersey (cf. *People v. Botkin*, 132 Cal 231, 64 P 286 (1901)). Rather, proximity in proximate causation holds between individual nodes on a causal chain or path. When C causes E via D, D is proximate to E relative to C.

Suppose C leaves a knife on a desk, which D uses to stab his victim, E. C contributes to E’s death on most plausible theories of causation. Still, because C’s contribution to the stabbing runs through D’s action, D’s action is proximate to E’s death relative to C. No tracing of causation between C and E can avoid running through D.

Much, of course, rides, on the cashing out of “via” or “running through”. This can be done using causal graphs (Direct Acyclic Graphs, or DAG), of the sort used in causal modeling. It can also be shown using causal diagrams (Lewis (1986b)). A similar test, tracing back to Reichenbach (1956), can be used via the screening off principle. When D completely mediates the causal connection between C and E, D is, properly, an intervening cause. On the other hand, when the connection between C and E runs either independently of, or only partly through, D, D is not an intervener, and therefore in no sense is D more proximate to E relative to C, even if D is later in time and closer in space, because proximity off a causal path is not defined.

Thus, the correct way to understand proximate causation is not as breaking off a causal chain from C to the effect (as it is often expressed in the literature, causing much confusion how such breaks are possible), but rather of tracing backwards from the effect: the plaintiff argues that various actions contributed to his loss, tracing back to the causes of his loss in time. Each node in this chain is proximate relative to the one (causally) prior to it. When arriving at a fully culpable cause along a particular causal path, the Baconian proximity principle says “stop”.

The insight gained from this is that proximate causation itself is an entirely non-normative notion of independent interest in causal modelling. Suitably constrained it can be used in causal explanation. That proximate causation is also relevant to liability, of course, is another matter. But this is not a difficult claim to substantiate: when D is proximate to the effect compared to C, this means that D’s action itself is independently a sufficient liability warranting action. D’s action was sufficiently blameworthy to justify complete liability for the effect, independently of the existence of C. In this sense, the plaintiff can trace back his action to a fully justified stopping point. D’s responsibility is not affected by the presence of earlier causes in the chain (the arsonist’s fault is not mitigated by the fact that the shopkeeper sold him the kerosene). On the other hand, in cases where D is not culpable, or where C and D are complicit, this is not true. In such cases, there are reasons to continue tracing back, such that the causal chain between C and E is not “broken” (if the shopkeeper sold the kerosene to a man of unsound mind, fault for the damage would continue tracing back, through the arsonist, back to the shopkeeper). Similarly, where the chains between C and D are independent of one another, there is no reason not to trace back to C. This is what distinguishes cases of joint causation from intervening causation.

The point here generalizes. There is a respectable notion of proximity in causal analysis, that is not, itself, subject to normative or policy-based considerations. If the law employs such analysis, this does not render the law’s proximate cause analysis policy-driven in the sense alleged. I don’t claim that this notion of proximity covers everything that is needed in the second step of causal analysis in the law. It does capture what might have been essential in the historic directness tests as well as the intervening cause doctrine, so central to the analysis of Hart and Honoré.

approach to proximate causation (at least for the factual cause component) makes better sense of the implicit rationale in the law, metaphysically, morally, but also positively and historically.

6.3 Modern Calls for Productive Causality

In the modern literature, similar proposals to either eliminate the two-step analysis or to restore a productive or direct causal test for cause-in-fact, have been made.

Richard Epstein argues that, fundamentally, liability is for harm caused, which stems from “force, fright, compulsion, and dangerous conditions”, each of which begin with movement and action.⁹³ Epstein argues for strict liability (rather than negligence) as the basic paradigm case that should define the relationship between injurer and injured. The basic presumption is “*as between* the person who did nothing and the person who acted, the only way to correct the injustice is to have the second compensate the first.”⁹⁴

The prima facie case in torts is that A applies force against B, injuring him. Epstein’s account, therefore, assumes a difference between “active” and “passive” parties. Suppose that P’s vehicle is standing still at an intersection when the light turns green, and D, coming from behind, crashes into P’s rear. Who caused the accident? For the counterfactual causation theorist, both P and D did: had D stopped his car, the crash could have been avoided. But so too for P: had P not stood still (or had P gotten out of the way), the collision could have been avoided just the same. This symmetry gets broken, of course, once we focus on duties: if P had a duty to move (because the light was green), and D acted faultlessly, then it is P’s conduct, and not D’s, that would be blameworthy.⁹⁵ Similarly, had the light been red and P was supposed to stand still, then P’s standing still would be a background

⁹³ Epstein (1973).

⁹⁴ Epstein (2010), citing *Rylands v. Fletcher*, L.R. 3 H.L. 330 (1868) (Cransworth, L.): “When one person, in managing his own affairs, causes, however innocently, damage to another, it is obviously only just that he should be the party to suffer” and Holmes (1881, 84) “[T]he defendant...has chosen to act. As between the two, the party whose voluntary conduct has caused the damage should suffer, rather than the one who has had no share in producing it”.

⁹⁵ A similar solution can be reached using the default/deviant distinction favored by causal modelling.

condition, and D's action would be seen as "causal" and grounding liability.

Epstein's point, however, is that regardless of how duty gets apportioned, causation comes first. Causally, there is an asymmetry in this case (as opposed to a case in which the two, in motion, collide into each other). D clearly *crashed* into P, thereby causing the collision. D is the active party, in motion, transmitting force. P is passive. The causal analysis is available without recourse to duty.⁹⁶ From this it doesn't follow that D is liable: normative considerations still matter for the determination of liability, but the basic structure of the case begins with the causal analysis (and where fault is not at issue, because the matter is governed by strict liability, it ends there⁹⁷). Since it is D who crashed into P, D will be liable unless he has justification or excuse for so doing.

Thus, we get a basic cashing out of the harm principle: all else equal, when one party harms another, it is incumbent upon that party to make the harmed party whole.⁹⁸ It is essential, for a principle like this to work, for there to be a real distinction between harm caused and harm merely

⁹⁶ While the "fright", "compulsion", and "dangerous conditions" paradigms are not as cleanly reduced to physical forces as the first, "force" paradigm, they all share with that paradigm the asymmetry between active and passive parties. Regardless, for our purposes, they are each a form of productive cause and disallow omissive causation.

The fourth paradigm "dangerous conditions" is trickiest. On the one hand, it is clearly a matter of productive causation if I dig a ditch. But what makes the condition dangerous seems to be a disposition for others to fall in, which suggests a counterfactual analysis. The advantage, for Epstein's analysis, of having this paradigm, is that it can explain the duty to warn or rescue that is incumbent on the party that creates this condition (but not on third parties): when I dig a ditch and you fall in, I've caused you to fall in (assuming this paradigm) simpliciter, by creating the dangerous condition which impacted you. The duty to warn you of my ditch is none other than my general duty not to cause you harm via the dangerous condition. A third party, on the other hand, that had not created this condition, has no such duty.

⁹⁷ With the caveat that strict liability will not attach if the "act" is entirely not voluntary, cf. *Weaver v. Ward*, 80 Eng. Rep. 284 (K.B. 1616): the harm "may be judged utterly without his fault...As if a man by force take my hand and strike you or if here the defendant had said, that the plaintiff ran cross his piece when it was discharging, or had set forth the case with the circumstances..."

⁹⁸ Epstein (1973, note 48) cites Leon Green (1961, 1412): "a deep sense of common law morality [is that] one who hurts another should compensate him".

allowed or not-prevented.⁹⁹ In other words, the principle itself suggests an essential role for productive causation.

Another, more recent production-friendly account is offered by Moore.¹⁰⁰ Moore's extensive account of causation and responsibility insists on holding the line that absences, and hence, omissions, cannot cause. Moore takes a position similar to mine that quasi-causal liability needs to be understood differently from proper causal liability. On the metaphysics, Moore's account is neutral as to whether the ultimate account of causation is a process-type physicalist account or whether causation is a primitive Singularist relation.¹⁰¹ Regardless, the account is clearly productive and rejects any sort of counterfactual dependence as the definition of causation.¹⁰² I will return to Moore's suggestion later in this chapter when discussing omissions.

7. General Prospects and Prognosis of a Productive Account

7.1 Multiple Sufficient Causes on a Productive Account

A productive account of causation (whether process-based or primitivist), would handle ordinary causal cases similarly to but-for: in typical cases, effects will be counterfactually dependent

⁹⁹ This account would reject the more radical reading of the lessons of Coase (1960). Coase pointed out that in cases of causing injury there is a sense in which there is reciprocity between the injurer and injured, since both aim to make inconsistent uses of a resource: "To avoid harm to B would inflict harm on A". For example, if a confectioner is next door to a doctor's office, the confectioner's noise disturbs the doctor at work, but avoiding this noise (by prohibiting it) would harm the confectioner. The economic question is how much of one we should trade off for the other. Metaphysically, however, there is still a fact of the matter which way the causation goes with or without the legal restriction: when the confectioner makes noise that causes the disturbance to the doctor. It is only if we consider a counterfactual of restricting the confectioner's activity that any harm to the confectioner ensues. Coase made no claims about the metaphysics of causation, but his argument, that where liability initially lies makes no difference to the ultimate results of bargaining (absent transaction costs), is often seen as showing that actual causation is at best irrelevant. Coase assumes that, absent transaction costs, the party's bargain will mirror the result that would be attained by applying the Hand Formula, such that the harm will be avoided only if the costs of avoiding it are lower than the benefits of the activity.

¹⁰⁰ Moore (2009).

¹⁰¹ See discussion of these options in Chapter 2.

¹⁰² Moore, like Epstein, is skeptical of the two-step analysis. While Epstein aims to handle scope of liability issues by looking at the prima facie sequence of defenses one party could offer (e.g., who had a duty to prevent the accident?), Moore is particularly drawn to an analysis that treats causation as scalar, in which causal relations weaken over the course of events. The scalar relation would render causality non-transitive in the sense that degree of causation is not transitive, and that, ultimately, a node in a causal chain might no longer qualify as causally connected, once the level of causality is below a threshold. This would be an example of how transitivity might not be necessary for production (see discussion in Chapter 2).

on their causes. It would improve upon but-for in preemption cases, correctly identifying the preempting cause as the cause-in-fact. Overdetermination cases would seem to be handled by identifying both contributing causes to a joint process as causal (but this is less straightforward, perhaps as it should be). As with NESS, but unlike with but-for, the ability to handle these is principled, rather than ad hoc.¹⁰³ In these respects, productive causation fares better than the counterfactual account and its kin in describing the law. The alleged weakness is omissions, to which we now turn.

7.2 Omissions on a Productive Account

On a productive account of causation, omissions cannot cause¹⁰⁴. Yet the law is rife with instances of liability for omissions and preventions.

When A is liable for harm for an omission, this means that A failed to prevent the harm. Let us return to the gardener example. A fails to water the plants and the plants die. A is liable for the death of the plants.

On the but-for account, we can point to A's failure as a but-for condition for the plant's death. The problem is that it is not only A who "caused" the death of the plant this way. Everybody else in the world failed to water the plant, and thus "caused" the death in the same manner. Perhaps only A was wrongful, but this raises once again the question: in what did A's wrongful behavior consist? Surely it was not "not watering" the plant itself that is wrongful, since this behavior is true of all

¹⁰³ This doesn't mean that but-for is useless as a test. It remains a decent heuristic for identifying a causal connection.

More importantly, because the law doesn't merely identify causes, but apportions damages to liability, the but-for test has particular importance in understanding what sort of recompense the defendant owes to the plaintiff. In other words, whether Defendant is liable to Plaintiff depends on whether Defendant caused Plaintiff harm (where "caused" means caused), but what sort of undoing of this harm is owed by Defendant to Plaintiff might be mitigated by but-for considerations. Richard Wright (2003) calls this the "no worse off limitation" on liability. The idea being that when a plaintiff is made no worse off by the tort, recovery is limited. For example, what happened in *Dillon*, or when I cause you to miss your flight and that plane crashes.

¹⁰⁴ See discussion in prior chapter.

others.¹⁰⁵

The standard solution, for those who admit omissions as causes, is to zero in on who has the duty to prevent the harm. The relevant difference between the gardener and everybody else is that *only the gardener* has the *duty* to water the plant. It is for this reason that the gardener, but not the Queen, can be said to have caused the death of the plant (and can be held responsible for it).

Requiring this filtering mechanism of prior duty for omissions suggests that the law takes the “intuition of difference”¹⁰⁶ between actions and omissions seriously. If I actively kill the plant by uprooting it, there is no need to ask, “Did I have the duty not to uproot the plant?” either in order to determine that I have killed it or to understand why I am blamed for its death. By requiring duty as a filter for omissions, the law recognizes both the problematic metaphysics of causation by omission, as well as the moral problem: that there is something inappropriate in requiring positive actions (in holding you responsible for your omissions) without special circumstances (contractual, fiduciary, etc.) that we have no (or fewer) qualms about in regard to actions.

Still, without an account of how duty can affect the *metaphysics* of causation, we have not explained how the gardener has properly *caused* the death of the plant. We’ve simply answered the question “why pay attention to the gardener?”

7.2.1 Moore on omissions. Moore argues that omissions, preventions, and other cases of quasi-causation are not properly causal.¹⁰⁷ He correctly points out that both the law and commonsense morality treat causation differently from quasi-causation: for example, I may omit to save one person in order to save someone else, but I may not throw one person off the lifeboat in

¹⁰⁵ Compare this to a case of action: if A uprooted the plant, we can point to the uprooting as A’s wrongful action. This action would not be true of all others. Uprooting is wrongful in a way that “not watering” (by itself) is not. “Not watering” accompanied with a duty to water is wrongful, but this shows that omissions are only wrongful accompanied by a duty; not so with actions.

¹⁰⁶ Dowe (2000).

¹⁰⁷ Moore (2009).

order to make room for the person I wish to save.

On Moore's account, we are all simultaneously under two parallel norms of duties: (stronger, deontic) duties not to cause harm and (weaker, consequentialist) duties regarding the consequences of choices. The latter set of duties can ground responsibility for outcomes counterfactually dependent on our choices, even when they are not caused by them. The causal duties, however, are generally stronger. Thus, when the law holds the defendant liable for a consequence he did not cause, but which was counterfactually dependent on his wrongful conduct, the defendant is liable on that second ground of liability. This is what occurs in omissions. When the defendant is liable for his omission, Moore argues, he is being blamed (and held responsible) for a bad outcome that is counterfactually dependent on his wrongful choice. Still, this is different from being blamed or held responsible for a bad outcome he caused.

Returning to the gardener, this would suggest that the gardener and the Queen both have counterfactual-based liability for the death of the plant. In that case, however, we are no closer to understanding what is different about the gardener. It is true that the gardener, and not the Queen, engaged in wrongful conduct, but, again, why? Moore's account might prove too much, because it suggests that all conduct, counterfactual upon which there is ensuing harm, can potentially ground liability.¹⁰⁸

7.2.2 Schaffer on omissions. Schaffer, too, focuses on duty in cases like this.¹⁰⁹ For Schaffer, all causation is contrastive.¹¹⁰ The role of the duty is to specify the relevant contrast. Omissive causation requires a contrast (i.e. duty) because every putative cause and effect does. Omissions

¹⁰⁸ Presumably there are utilitarian considerations why we should only make those who, e.g. promised to water the plants, responsible for them, which would strongly favor blaming the gardener and not the Queen. But the law's duty requirement is categorical, it does not get bent in the presence of deep pockets.

¹⁰⁹ Schaffer (2010).

¹¹⁰ See the discussion in the previous chapter.

needn't be ontologically suspect, since they denote positive events, by contrast.¹¹¹ Schaffer, in fact, takes cases like this to demonstrate the need for his four-place contrastive account.

As a reminder, Schaffer would say that by not watering the plant, rather than watering it (which was his duty), Gardener caused the plant to die rather than to live. We can run a similar counterfactual with the Queen, except that, since she was under no such duty, the contrast is not a relevant one.

Schaffer's account allows us to say that Gardener is liable because he (and not the Queen) caused it, and that he (and not the Queen) caused it because the relevant contrast holds.

While I reject the contrastive account of causation as well as the causal efficacy of omissions, I agree with Schaffer that contrast plays an important role in the law's understanding of the conditions of liability. Take a case of negligence. Suppose I'm a delivery driver, running late for my delivery. I deliberate, in order to avoid being late, between (a) speeding and (b) taking a short cut through rough terrain. Suppose I settle on (a), get into an accident, and destroy the merchandise. Imagine the following defense: I was running late (assume through no fault of my own). Had I not sped, I would have chosen option (b) (grant this). Had I driven through the rough terrain, I (probably) would have driven into a ditch, and the merchandise would have been destroyed just the same. Is this a good defense?

Schaffer's answer, and the law's answer, is sensible: When assessing what would have happened "but-for" the negligent action (in this case, speeding) we don't contrast your negligent action with just any alternative, or even with the most likely alternative, we contrast the violation of your duty with action that comports with your duty. Only then, can we properly assess whether your negligence caused the damage. So in this sense, Schaffer is correct: to know whether you are liable

¹¹¹ Cf. Hart and Honoré (1959, 38) "The corrective is to realize that statements like 'he did not pull the signal' are ways of describing the world...they describe it by contrast not by comparison as affirmative statements do".

for what you caused in negligence,¹¹² attention must be paid to what you would have caused had you done what you had a duty to do (in this case, both alternatives the driver did contemplate would have violated his duty of careful driving) Notice, however, that we still have work to do in figuring out what you would have caused.

As argued in the previous chapter, I think Schaffer is mistaken, however, about the importance of contrast for causation. In fact, running a contrast is neither necessary nor sufficient for determining causation.

The contrastive account leaves causation unexplained. The reason for this is that causation is *within* each contrasted pair, rather than across them.¹¹³ The contrastive step is only needed to see what difference the causation made. It's not the gardener's going to the pub that causes the plant's death; it's not lifeguard's nap that causes the drowning. The causal process that caused the drowning is the water entering the lungs etc.¹¹⁴ That *process* can be contrasted with the process that would have obtained in which the lifeguard does his duty. If in *that* process,¹¹⁵ the actual (drowning) process would have been prevented, in other words, if the result of the duty-comporting process is one in which the lifeguard caused a better result for the plaintiff, the plaintiff has a case that the omission, namely, the failure to do the duty and to execute the process that results thereof, is grounds for liability. In other words, the law tracks dependence via production. The defendant had a duty to produce X, his failure to produce X is a difference maker for the result. But the nap (or the pub) itself is causally irrelevant.

¹¹² Strict liability is a little trickier, which is why this example was framed in terms of negligence.

¹¹³ Between C and E and between C* and E* respectively.

¹¹⁴ As discussed in Chapter 2, there are multiple processes that cause the concrete event (in this sense the Millians have a point), importantly, however, the omission is not one of them.

¹¹⁵ The one that comports with duty.

7.2.3 The correct use of contrastive judgment to establish liability for omissions. As I argued in the previous chapter, causation itself does not require a contrastive judgment, but (civil)¹¹⁶ liability does (as does quantification of damages). When the law determines that you caused injury, we only hold you liable if the injury was a result of your breach of duty (trivially satisfied, perhaps, in cases of Strict Liability). You are only responsible to compensate for such breach to the extent that your breach left plaintiff worse off than he would have been but for the breach. So, in short, causation is not contrastive, but liability judgments are.

What about omissions? With the proper role of causation restored, the act/omission distinction returns. Strictly speaking, omissions cannot cause anything. The gardener has not, properly, caused the death of the plant. So why should he be liable for it?

My answer relates to duty: when you have a legal duty, the law holds you to your duty. This involves a normative/legal constructive fiction that your duty was comported with. When you have a duty, as a matter of corrective justice, the target of that duty (she who has a right correlative to it), is entitled to stand in the position she would be in, had you comported with your duty.

Gardener had a duty to water the plant. The plant owner had a right to the plant's being watered. The appropriate question is *not* "what did the gardener's going to the pub *cause*?" Nor is the question "what did the gardener's not watering the plant *cause*?" The answer to either question is: *nothing* (at least nothing relevant to plaintiff). Rather, we ask: in the (closest) possible world in which the gardener had comported with this duty (i.e., watered the plants) what would have happened (what would *have been caused*)? The plaintiff has a right to be in *that* world (in that position). When she sues the gardener, she is vindicating a right to be where, had he fulfilled his duty, she (causally) would be. The law determines, normatively, what world Plaintiff has a right to be in, and determines

¹¹⁶ This qualification is necessary especially for inchoate crimes.

that had Defendant not breached, he would have brought about (caused her to be in) *that* world. This explains why liability attaches to the gardener and not to the Queen. The gardener's liability in this case is not, strictly speaking causal (it is not for what he caused) but for what he had a duty to bring about. In this sense, liability for omission is similar to Expectation Damages in Contracts¹¹⁷.

The vantage point from which the causal analysis runs in omissions cases is not actual causation in this world (from which no omission could ever cause). Rather it is the normative construction of a "perfect" world in which duty was met. That is the world plaintiff is entitled to. Failure to be in that world is the basis for omissive liability.

With this distinction in mind we can make more sense of the confusing cases of omissive overdetermination. Recall, that the law is less clear in these cases: who caused the accident, the rental agency that failed to repair the brakes or the driver who never stepped on them? Is this a case of overdetermination or preemption? The answer is "neither", as failures are not causal (the driver of course caused the accident by driving¹¹⁸). The interesting question is making sense of how counterfactual liability works in these cases.

In a case of a defendant who breaches a duty to a plaintiff, and, but-for the breach, the plaintiff would have been better off, the answer is clear. But in these cases, there are two defendants, each of whom breach, but, taken individually, but-for each breach, the plaintiff would be injured just the same. The question as to whether a defendant should be liable is a normative one as follows: is the relevant duty upon me to restore plaintiff to the possible world she would be in but for *my* breach (in

¹¹⁷ Damages that are intended to put the injured party in as good a position as if the contract had been fulfilled.

¹¹⁸ In this case, there is a simple analysis that we have skipped by focusing on the omission: D hit P with the car; that is the cause of injury in the simple sense of actual causation. If we apply a Strict Liability account, perhaps that's all we need. But even if we wish to hold D to a negligence standard (and to absolve D if D exercised due care), we can handle this case. D hit P, this makes D prima facie liable to P. D could deflect that liability by either (1) claiming that he drove carefully (which he did not, since he didn't apply the brakes) or by (2) joining C as a co-defendant claiming that they are liable to him for failing to fix the brakes. (1) is not available to D since he never even applied the brakes (thus the lack of brakes never enters the causal chain). (2) is arguably defeated in this case, because, now, when we ask what would have happened had C comported with their duty, we get the same result. On the other hand, in the case where D actually does apply the brakes, but they don't work, his claim is good, and C would be liable.

which case there is no liability) or is the duty a “Kantian” one in which plaintiff is entitled to be in the world she would be in if all parties comported with their duties (and liability is joint and several among those who breached towards plaintiff). A case can be made for either position. This is an interesting question that raises some of the issues that divided the court in *Palsgraf* regarding the directionality of the duty of care.¹¹⁹ But, importantly, it is no longer an issue of the metaphysics of causation. More important, for our purposes, is that when the causal link is actual, rather than omissive, such redundancies do not defeat liability or wrongdoing.

This distinction between liability and causation is an important one in understanding the difference between accounts that treat the act/omission distinction seriously and accounts that capture behavior using default/deviant states. Suppose you are witnessing an event of wrongdoing. This could be a violent event, like a lynching, or a vote of a corporate body you belong to going the wrong way. Clearly, if you can make a difference, there is a reason to think you have a duty to do so. But what if the outcome will happen regardless of your intervention? It seems that failure to unsuccessfully interfere with an inevitable lynching (even controlling for harm to yourself), or failure to show up or passionately plea with your colleagues when futile, are not blameworthy. In these cases, it is true, your omission is not a difference maker. But now suppose that instead of failing to interfere, you joined in. You, too, partook in the lynching, or you added your vote to a cause you oppose, on the grounds that it made no difference. Wouldn't this participation be judged rather differently? Isn't it prohibited and blameworthy to pile on, even though the result is foreordained?

The point here is that *redundancy defeats dependence* but it does not defeat production. As such, redundancy defeats whatever liability attaches for quasi-causation (which is dependence driven and thus requires difference making for liability) but not for causation itself. This phenomenon is

¹¹⁹ Compare the positions of Justices Cardozo and Andrews in, *Palsgraf v. Long Island Railroad*, 162 N.E. 99 (N.Y.1928)

missed when causation is seen as counterfactual dependence and the act/omission distinction is ignored.

8. Conclusion

I've argued for a theory of causation that treats productive causation (via a process or something similar) as the basic metaphysical notion and argued that it not only best makes sense of the link between causation and responsibility, but that it can successfully handle the concerns that arise for causation via omission (better, in fact, than its competitors). On this account, causation by omission is not causation at all. This leaves the causal notion intact as actual causation in the world, which grounds responsibility (rather than the other way around), and which is not contingent on moral judgment (which would jeopardize its status as a metaphysical theory). Keeping this intact respects the "intuition of difference" between acts and omissions and between doings and allowings, and, arguably, is better positioned to defend Mill's Harm Principle.

The account also explains what is occurring in those cases in which the law does impose liability for omissions. In these cases, liability proceeds, not by causation, but by "quasi-causation". The reason that such liability is legitimately imposed is because plaintiff had a right to an action's being performed. The law asks what the performance of that action would have caused and states that, as a matter of corrective justice, defendant must restore plaintiff to that position. In other words, the plaintiff has a right to be in the circumstance that would have ensued had defendant comported with his duty. It is from the vantage point of *that* circumstance that the judgment that plaintiff is harmed is made.

Rather than being a weakness of productive accounts, the non-causal nature of omissions is a strength. The understanding that blame for omissions functions differently from straightforward causal blame vindicates the law's own distinction between these two forms of wrongdoing. To cause

in the legal sense is thus fundamentally, to cause in the proper sense. It makes a difference metaphysically, morally, and also legally, whether the result is caused or merely counterfactually dependent upon defendant's actions.

CONCLUSION

I've argued that the nature of causation is unified and productive. Causal pluralists, who argue that production and dependence are mutually irreducible, are not mistaken about this irreducibility; their error is in seeing dependence as the explication of causation in the first place. This error is understandable, since many of the central roles that causation plays in practice: in explanation, prediction, rationality, practical reasoning, praise, and blame, involve the interaction of the causal with dependence-based criteria. Causal inference is therefore intimately connected to counterfactual dependence and to probabilities. It doesn't follow from this, however, that causation itself is grounded in or is identical to these dependences. In fact, as I argue, causation grounds and underlies these dependences and makes sense of our practices involving them: we explain the dependence of one event on another by invoking proper (productive) causal relations that connect them; we expect such dependences to obtain, precisely because we take the relationship to be a causal one.

Those who point to the centrality of counterfactual and probabilistic dependence, or to features of manipulability, for causal *inference* are not mistaken. If causal production grounds causal dependence, then we should expect to find dependence relations when there is causality. Such dependences, therefore, are good evidence of a proper causal relation. My account has shown both why that is so, but also why it is important, nonetheless, to keep causality and dependence apart. Not only because conflating them is erroneous metaphysics, but because causation proper, rather than mere dependence, does important work in distinguishing between various cases: keeping causation and dependence apart helps make sense, both of cases (such as preemption) where we have causation without dependence, as well as in explaining why cases of dependence without production (such as omissions) are not properly causal, at least not in the same sense as those that do directly involve production. The pluralist can at best explain the former, but not the latter.

The pluralist bifurcates a concept that seems unified. This is clearly undesirable. Furthermore, the pluralist ignores the conceptual connection between causal dependence and production. Analyzing causation as mere dependence misses the distinction between mere dependence and causal dependence. Causal dependence is just one type of dependence relation. Mere dependence has no obvious relation to production, but causal dependence does: when *a* causally depends on *b*, there is always a production relation, in virtue of which, this is so. The reverse is not true. Once we see this, the temptation to posit two distinct causal relations disappears.

The remaining objection involves omissions, which, indeed, are non-productive. But, the correct thing to say about omissions is that they are not causal either. With the distinction between causation and causal dependence, it is easy to see that omissions can comfortably sit with the latter without sitting with the former.

A unified, productive, positive notion of causation, therefore, is a better account of causal metaphysics. It also makes better sense of the role causation plays in explanation, responsibility, and in the law.

The view, therefore, is that causation proper is production. Since only positive causes can be productive, omissions cannot cause. Explanation, on the other hand, is distinct from causation. Causal explanation is a form of explanation in which production plays an important role. This role, however, need not be the direct one in which explanans causes explanandum. Instead, the dependence of the explanandum on explanans, itself, depends on a productive relationship between cause and effect. In this manner, omissions can explain without being causes.

The correct account of omissions proceeds by way of quasi-causes. When omissions are judged as explaining an outcome, the relationship is one of failed potential prevention: had A done that which he omitted to do, this would have prevented cause C from causing effect E. Of course, A is not the only ommitter who quasi-caused E this way. We need, therefore to say more about what

makes some omissions (and some omitters) salient. Notice that this is not the case with causing. This requirement makes sense when dealing with notions of explanation and responsibility, as opposed to natural relations such as causation. The salience which picks out the correct omitter is of a normative nature: A can be a salient omitter, to whom we attribute the “consequence” of the omission, when there are normative reasons (duties, expectations, regularities, or otherwise) which render A’s omission special (A’s omission is thus not part of the causal field). When we blame A for the consequences of the omission, we are blaming A for failing to cause what A was supposed to cause. The responsibility A has is judged from the vantage point of the possible world that would have obtained had A done what A was supposed to do. This judgment, which is essential to judgments of responsibility and liability, is both contrastive and counterfactual: in comparing what actually happened to what should have happened (had A done what was expected) we must judge a counterfactual scenario and compare it with the actual one.

The same account for responsibility can shed important light on the role of causation in the law. Since causation plays an important role in responsibility, it makes sense that it should appear in that same role in the law. The standard orthodox understanding of causation’s role in tort and criminal law is that causation proper is a factor in the first of two cumulative steps required for liability. The first step (cause-in-fact) involves a test of whether the defendant caused the damage, the second step (known under various names) may or may not involve causal factors as well, but is typically seen as being fairness driven. Controversy about the causal status of either step exists, as well as whether two separate steps are actually needed. My contribution to this debate is to show the viability of taking the productive notion of causation as standing in for the first (factual) step. Productive causation as cause in fact sits well with both the rationale and the doctrines pertaining to causality. Defendant is a cause in fact when he has caused the damage, or, when in violating a duty he has quasi-caused it. This bifurcated definition of cause in fact sits well with the law’s distinction between

acts and omissions, a distinction left unexplained if causation is counterfactual dependence.

My analysis does not settle what must occur in step two. My account is consistent with an approach that continues to take step two as a purely fairness driven non-causal analysis or with an account that tries to eliminate step two by either (1) treating the causal relation as scalar (Moore) (2) paying closer attention to the relata themselves (i.e. Palsgraf like solutions pertaining to the relationality of duty, or looking to aspect-causation rather than event causation). I also claim that the heart of the directness test and the doctrine of *novus actus interveniens*, in which a superseding action or event “breaks the causal chain”, can be vindicated along strictly causal, rather than mere policy lines, and contributes a great deal to solving many of the tasks involved in step-two.

If this is correct, then it is precisely by distinguishing the (productive) metaphysics of causation from its functional role that allows us to present a unified theory, both of causation itself, but also of causation’s import in the domains in which we care about it.

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Statutes (and Quasi-Statutory Materials)

- 21 U.S.C. § 84(b)(1)(C)
- Model Penal Code §2.01(3)
- Model Penal Code §2.03(1)(a)
- Principles of European Tort Law, Article 3:101
- Restatement (Second) of Torts §431
- Restatement of the Law (Third) of Torts: Liability for Physical Harm § 26
- Restatement of the Law (Third) of Torts: Liability for Physical Harm § 27
- Restatement of the Law (Third) of Torts: Liability for Physical Harm § 29
- Restatement of Torts §431
- Strafgesetzbuch (StGB) §13.

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