CHAPTER 15

Causes, laws, and reasons in psychiatric aetiology

Chapter contents

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Introduction

The previous three chapters have examined some of the lessons we can learn from the philosophy of science for a deeper understanding of:

1. clinical observation (as of signs and symptoms);
2. classification of symptoms; and
3. diagnosis based on those symptoms.

In each case we have been concerned with issues that, although particularly prominent in psychiatry, are generic to medicine as a whole. In this chapter, by contrast, we will be concerned with a complication to diagnostic assessment that, traditionally at least, has been identified particularly with psychiatry, namely the role that reasons as well as causes may play in how we understand the aetiology of mental disorders.

Why this is a complication

Why is this, as we put it a moment ago, a 'complication'? Essentially because the two ways of attributing aetiology, in terms of reasons and/or in terms of causes, leave psychiatry at one and the same time drawing on two different, and not necessarily compatible, ways of making symptoms intelligible.

Thus, on the one hand, like the 'hard' physical and biological sciences, psychiatry aims to discover the natural laws that govern the structure and interactions of psychiatric phenomena. These include the laws that govern the *causal* relations that may obtain. But on the other hand, psychiatry also aims to fit many of those phenomena into a different pattern of intelligibility, a pattern that is defined by their significance, social functions, and personal meanings. This second pattern, then, is interpretative or hermeneutic. Crucially it is also normative in a sense that will be further explained below.

We can distinguish these two different forms of intelligibility as the *realm of law* and the *space of reasons* (following, as we will see below, the work of the philosophers Wilfrid Sellars and, more recently, John McDowell). The complication, indeed the series of complications, which allegiance to these two forms of intelligibility at least threatens to raise can be simply put. The principles that govern these two different ways of making sense of the world—the world of law-like causal relations and the world of meaningful relations—are, prima facie, different. So how can they be reconciled as part of a unified discipline? Or is it instead that the causal and perhaps more biological elements of psychiatry are distinct from or discontinuous with its more hermeneutic or interpretative elements? If they are distinct, can psychiatry's concern with both reasons and also with causes be reconciled? Or, alternatively, do we have to choose between them? Do we have to choose either to view symptoms *only* as *effects* that carry meanings at most metaphorically. Or should they be viewed as literally having *meaning* in themselves, being perhaps meaningful responses to events in a patient's or client's life but either *not* part of the *causal* order or at least not subject to *laws of nature*?

Reasons and causes in science

We met these complications, in various guises, at several points earlier in this book, notably in Part II, in the tensions, as between meanings and causes, evident in Jaspers's foundational work on psychopathology. Those tensions, as the British philosopher and psychologist, Derek Bolton, has recently pointed out, are still unresolved in psychiatry (Bolton, 1997a). We should not, though, be too surprised by this. For as we saw in Part II, the tensions in Jaspers' work were a direct reflection of a long-running debate in the nineteenth century (the *Methodenstreit*) about method in the human (or social) sciences. And debate about the relationship between reasons and causes in general, as we will see in this chapter, and again in Part V on the philosophy of mind, continues to this day.

As with other topics examined in this part, therefore, although problems about the interrelation between reasons and causes are particularly evident in psychiatry, we should approach these problems as a sign, not that psychiatry is, somehow, unscientific, but rather that it is, in this as in other respects, a peculiarly *difficult* science.

Reasons and causes in the philosophy of mind

One response to the problems about the interrelation between reasons and causes is to argue that it is more apparent than real. This, as we will see in Part V, is one line on these problems that has recently been developed particularly among those working in the philosophy of mind. One idea is that mental states, properly understood, are just the sorts of things that can be, at one and the same time, causes and also reasons. Mental states, that is to say, are states with both physical properties, which can be subsumed under natural causal laws, and also rational and intentional 'properties', which can be fitted into the space of reasons. This, then, is an ontological approach, focusing on the nature of mental states, on the kind of thing that a mind is. Such ontological solutions, in attempting to grant mental states two sets of prima facie incompatible attributes, face severe difficulties that will be discussed in Part V.

Reasons and cause in the philosophy of science

If responses to the problem of reasons and causes from the philosophy of mind have been largely ontological, responses from the philosophy of science have, by contrast, been largely methodological. Approaches from the philosophy of science, that is to say, have been concerned, not with difficulties about what is, but with the issues that arise for those *disciplines* that investigate laws of nature (including causal laws) and those that investigate patterns of meaningful behaviour.

Overview of the storyline of Chapter 15

The storyline of the chapter (set out in more detail below) runs broadly from causes to reasons and back again.

The starting point: Hume

Thus we start (in Session 1) with what is widely regarded as the mainspring of modern philosophical work on the nature of

causation, the eighteenth century British empiricist philosopher, David Hume's, sceptical claim that, in effect, there is no such thing as a causal connection. Hume, as we will see, argued that the idea we have of causation is actually nothing more than a gloss (an epiphenomenal gloss) that we put on our experiences of things occurring together: an approach based on regularity.

Humeans and non-Humeans

Hume's regularity or constant conjunction theory, as it has come to be called, has been developed in various ways by subsequent generations of Humean philosophers. The challenges that 'constant conjunction' theories face is to explain how genuinely *causal* conjunctions differ from more accidental generalizations. Hence there have also been many Humean philosophers, differentiated by their different approaches to analysing the essential feature(s) of a genuinely causal generalization. In *Session 1*, we explore a range of ingenious approaches to analysing causation that draw in different ways on the idea that causal connections are, in one respect or another, nomological, i.e. that they are a species of law. In *Session 2*, we examine two rather different approaches to analysing causation, one in terms of counter-factuals, the other in terms of probability.

From causes to reasons . . . and back again

None of these approaches, as we will see, is wholly successful, although each is in different ways illuminating for medicine and psychiatry. They show, in particular, that attributions of causation, contrary to the traditional model of science, are both context-dependent and normative (the causes we attribute are in part driven by the interests we have). In these respects, then, causes and reasons, notwithstanding their prima facie differences, begin to appear rather similar! *Session 3* thus turns from causes to reasons, looking at recent influential accounts, both of the differences between them, and, at how, prima facie differences or not, they might none the less be reconciled at least in psychiatry.

More detailed structure of Chapter 15

In more detail, the chapter is divided into three main sessions. Sessions 1 and 2 are concerned with different ways of analysing causation, respectively, in terms of regularity, or more precisely, natural laws (Session 1) and of either counter-factual conditionals, or of probability (Session 2). Session 3 is concerned with reasons and with whether and in what way reasons are related to causes.

Session 1

This is concerned with the origin of much of the philosophy of laws and causes in David Hume's famous (and as we will see still not adequately refuted) sceptical account of causation. At least according to one interpretation, Hume argued that a so-called causal connection is nothing more than a psychological gloss that we put on what he called 'constant conjunction'. Causation, according to Hume, is, and is nothing more than, things regularly occurring together.

Hume's sceptical attack will help put in place recent philosophical work on the relation between causes and laws. While not all philosophers agree that causation should be *analysed* in terms of laws (i.e. *mean* linked by laws), most think that where there is a causal relation between individual or particular events, there must also be a general regularity, or law, linking events of those types. Thus the hope is that light can be shed on the nature of individual causation by looking at the higher level of regularities that comprise natural laws. There remain, however, difficulties with the distinction between those observed regularities that correspond to genuine laws of nature and those that are mere accidental generalizations.

Session 2

This considers two further approaches to understanding causation. One attempts to define causation in terms of what are called counter-factual conditionals and the other in terms of probability. Counter-factual conditionals are conditionals (if . . . then statements) that run counter to the facts. Consider the claim: *If* John F. Kennedy had not been assassinated *then* Lyndon B. Johnson would not have become president. This expresses a claim about what would have happened if something else, which did not in fact happen, had happened. One thought is that these can be used to explain causation (Kennedy's assassination was the *cause* of the swearing in of Johnson).

The second, probability based, approach is to define causation as the raising of the chances of effects. This approach is familiar in health-care research in the form of statistical 'tests' of the significance of experimental or survey findings. The assumption guiding such tests, an assumption directly reflecting Hume's 'constant conjunction' account of causality, is that the less likely it is that a result could have been obtained by chance, the more likely it is that the result reflects an underlying causal process.

Neither of these approaches, through counter-factual conditionals or through probability, has yet been fully successful in explaining causality (acting as a rival to a regularity approach). But as the session concludes, even if they were, there would still be reasons for thinking that there is a general connection of the kind explored in Session 1, i.e. a connection between causes and regularities or, more precisely, laws.

Session 3

This examines the 'space of reasons'. By contrast with the idea of subsuming causal events under a structure of natural laws, the human sciences (such as history) have traditionally been thought to embody a different organizational principle. Rather than understanding phenomena by fitting them into a structure of causal laws, the human sciences attempt to understand the meanings of phenomena. Thus the structure they embody is not one of causal laws but a rational structure of reasons.

The session outlines recent work in philosophy picking out the key features of the space of reasons and arguing that these show it to be different in kind from the realm of law, including the realm

of causal laws. However, the session concludes by examining two approaches that seek to respond, in different ways, to reasons and causes at least as they arise in psychiatry. Bolton and Hill argue that reasons are encoded in brain states and thus a principled reconciliation is possible. In other words, they try to show that there is not a gulf between the space of reasons and the realm of law. The former is, properly speaking, part of or a special case of the latter.

Brown and Harris, by contrast, present a model of the social and psychological origins of depression that combines reasons with causes in a way that takes for granted their joint operation. In other words they suggest that, although there is a distinction, both can operate together in an informative way in psychiatry.

Session 1 An introduction to philosophical accounts of causation

Causation in physical disease and mental illness

Causality plays a central role throughout medicine. Physical diseases cause symptoms, disability, and death. Diseases are themselves caused by biological infections, poor diet, underlying social conditions, or inherited susceptibility. Treatment is often thought of as a causal intervention in the patient's health whether through chemical, surgical, or other means. Sometimes the causal pathways or mechanisms involved in these processes are well known and sometimes they are not. But even when they are not, it is a working assumption for many that some such causal mechanism must exist and that it is one role of medical research to find it.

There is, however, much debate about whether, and if so how far, any such causal medical model can be usefully applied to *mental* illness. One of the issues in the debate about whether one should talk of mental *disease* or mental *illness* is the applicability of causal models of aetiology (see Part I). Are mental illnesses the result of underlying causes or should they instead be identified with deviation from social norms and suchlike? Can they be subsumed under either deterministic or even probabilistic laws or are they instead to be understood as a partially rational response to psychological trauma subject only to interpretation? A satisfactory resolution of that debate requires, as one of its ingredients, a proper understanding of causation itself.

Is causation important for science?

Although this will be one of the subjects of this chapter, it is worth flagging in advance the fact that opposing claims have been made about the connection between causation and natural laws in the natural sciences. Intuitively, causation seems to have a central role in the conceptual tool bag of science. This claim was, however, criticized by the philosopher Bertrand Russell early in the twentieth century. He argued that causality was useful only in the early stages of science after which it is replaced by a concern with laws of nature that make no reference to cause and effect. Providing science can structure phenomena under law-like relations, and chart the relations between physical quantities or properties, there is no need to talk about the individual causal relations between events.

As we have already seen in Chapter 13, this view of the priority of laws over causes has in turn been criticized by Nancy Cartwright. She argues that one should not take a realist attitude to the high-level laws of physics, for example, but should take a realist attitude only to those entities that *cause* observable effects. It is also clear that in the technological *application* of science at least, causality has a central role. If one wants to make something happen, to bring about a desired effect, then one needs to know what will bring it about, or cause it. As medicine is in this respect a practical or applied discipline, causality looks, prima facie, to be an important part of its conceptual structure.

Other philosophical accounts of causation, however, as we will see in this session, have stressed a *connection* between it and laws of nature rather than a priority one way or another. This in turn suggests a key connection between the kind of nomological systematicity found in scientific disciplines and the use in these disciplines of causal concepts. Natural sciences attempt to articulate the structure of natural laws that gives shape to and unifies the diverse phenomena they study. These in turn underwrite the causal interconnectedness of natural phenomena.

Structure of the session

So this session starts by looking at the kind of assumptions naturally made about the concept of causation taking as its example a reading from a medical journal article (Rizzi, 1994). It then looks at Hume's sceptical account of our idea of causation and, in particular, causal necessity or, as we might informally put it, causal glue. Hume argues that when one looks for the source of our idea of a causal glue connecting events together, one cannot find it. And thus he gives three definitions of causation that do not rely on such a notion and that he took to be equivalent, two of which stress the connection between causation and regularity or generalization.

We then look at a recent Humean account that attempts to relate causation to the logical notions of necessity and sufficiency (neither of which quite coincide with Hume's target conception of a causal glue type of necessity). While this serves as a useful model for refining our concept of causation we find that it is, again, dependent on a notion of regularity. But as the final part of the session outlines, whereas some regularities or generalizations correspond to genuine laws of nature that might indeed underpin causal relations, others are merely accidentally true. Thus if a regularity version of Hume's account of causation is to work we need an independent account of the difference between natural laws and mere accidents. We examine two such accounts.

Causal reasoning in medicine

Causation in diagnosis

The first reading in this chapter (linked with Exercise 1 below), which is taken from a recent edition of a medical journal, illustrates the role of causal reasoning in physical medicine. It picks up the theme of the previous chapter (Chapter 14), about the nature of diagnosis, but adds an explicitly causal dimension. What is important about this extract for our purposes is not its main argument but what it takes for granted about the nature of causation.

EXERCISE 1 (20 minutes)

Read the short extract from:

Rizzi, D.A. (1994). Causal reasoning and the diagnostic process. *Theoretical Medicine*, 15: 315–333 (extract: pp. 315–317)

Link with Reading 15.1

- Identify some of the background claims and distinctions that are made concerning the nature of causality.
- List some of the connotations of 'causality' suggested at the start of this paper.

Rizzi (1994) shares a general assumption that was discussed in Chapter 14. Like most forms of *explanation* in the physical sciences, medical *diagnostic* explanation involves a causal element. With symptomatically defined diseases, as we saw in Chapter 14, the causal element is implicit. However, the assumption behind diagnostic explanations of a patient's condition is that a causal agent is present that is waiting to be identified to which suitable treatment can be fitted. A fuller explanation of why that agent was present and what other factors contributed to the disease will take the form of a fuller causal explanation. Thus Rizzi's account of different forms of diagnosis deployed for different purposes resembles Lewis's account of having more or less explanation (see Chapter 14).

Rizzi also suggests, again consistently with the themes of Chapter 14, that the kind of causal explanation offered of the same disease will vary depending on the interests of the clinicians concerned: whether general practitioners or medical researchers. Similarly, he argues that the simple model in which for any disease there is a corresponding causal agent is mistaken. These wider themes in the paper can, however, be put to one side for the moment.

Connotations of causation

Rizzi's (1994) paper—both in the short extract above and later in the paper—takes for granted certain claims about the nature of causation that will be discussed during this chapter. Some of these are that:

1. There is an important distinction but also a relation between singular cases of causation and general causal relations (p. 316). General causation and singular causation are co-dependent (p. 321).
2. Individual causal factors may not be the cause but are still in some sense non-redundant elements of effective causal complexes (p. 317).
3. Causes explain their effects (p. 321).
4. Causes and effects possess a form of 'necessity' (p. 323).
5. Causation relates events (p. 324).
6. It is reasonable to claim that there are no absolute causal facts (p. 331).

Rizzi goes on to argue that the correct causal model for the medical sciences has to be broadened from that which is generally found in the natural sciences. But to understand and assess that claim requires an understanding of the philosophical background.

The history of the modern philosophy of causation: David Hume

The Humean origins of the problem

The modern history of causation began with the eighteenth century British empiricist philosopher, David Hume's discussions in his *Treatise of Human Nature* [1739–40] and his *Enquiries Concerning Human Understanding and Concerning the Principles of Morals* [1748]. These two works contain substantially the same philosophical material. The *Treatise* was not well received by Hume's contemporaries. In his own phrase it fell 'dead-born from the press'. Hume took this to be the result of its presentation rather than the ideas it contained. Thus the *Enquiries* is a later revision that differs more in style than content, although for our purposes it presents a clearer account of causation than the equivalent sections in the *Treatise*.

To understand Hume's account of causation it is necessary first to have some understanding of what would nowadays be described as his philosophy of mind (mentioned already in Chapter 12).

Ideas

Hume populates the mind with two sorts of entity: ideas and impressions. There is some difficulty in ascribing a precise view to Hume's notion of *ideas*. In modern terms *ideas*, or thoughts, are construed to be either the bearers of mental content or the content itself. Ideas are thus either the vehicles of thought or the thought itself. This distinction between the bearer of content and the content itself will be important in the Part V. For now, think of the distinction between a written sentence and the meaning it bears. It is unclear whether Hume thinks of ideas on the model of the sentence or its meaning.

Impressions

Impressions, by contrast with ideas, are directly experiential. It is through our impressions that we have access to the world. Except for the fact that Hume uses this word for both ideas and impressions,

it would now be usual to call impressions 'perceptions'. Hume also calls them feelings and sentiments. Unconvincingly, he suggests that the main difference between impressions and ideas is one of *vivacity*. The key claim, however, is that ideas are derived from impressions. With a couple of exceptions, all complex ideas can be derived, via simple ideas, from impressions (the exceptions are causality, as we will see, and unexperienced shades of colours lying between previously experienced shades).

There are some fundamental difficulties with views, like Hume's, which populate the mind with free standing and independent mental states. Once mental states or ideas are conceived as existing independently of how the world is, this opens up both a sceptical question about how we can know that our ideas represent the world *correctly* but also, more fundamentally, how they come to have any representative powers *at all*. We will return to these issues in Part V. For now, what is relevant is the *use* to which Hume puts the distinction between ideas and impressions, both conceived as free-standing mental entities.

Hume's philosophical methodology

Hume suggests that because ideas are fainter than impressions, they can be confused, leading to errors in reasoning. Impressions having more vivacity, by contrast, cannot. This leads to a central methodological principle: for any problematic idea 'enquire from what impression that supposed idea derived' (p. 22). It is this that guides the subsequent discussion of causation.

The account of causation

Having grasped the picture of mind that underlies Hume's methodology and his suggestion for investigating difficult (philosophical) ideas, we can now turn to Hume's account of causation.

EXERCISE 2 (30 minutes)

Read the extract from

Hume, D. ([1748]1975). *Enquiries Concerning Human Understanding and Concerning the Principles of Morals*. Oxford: Oxford University Press, section VII, pp. 63–64

Insert reading 15.2 here

- How good is Hume's style of argument concerning causation?
- What conclusions does Hume draw about causation?

What is the source of the impression of a necessary connection?

Hume's account takes as its premiss the claim that a key component of the concept of causation is that of the *necessary* connection between cause and effect. Hume suggests, however, that this idea is puzzling and problematic. What does it amount to to say that one event necessitates another? How can we find this out? Following the methodological principle set out above, Hume suggests that in order to clarify our understanding of this 'idea' of necessity, we should look to the corresponding 'impression' from which it is derived. This leads him to consider the different possible sources of our idea of necessity in impressions derived from both outer sense (experience of the outside world) and inner sense (experience of mental phenomena).

Hume does not conduct an exhaustive empirical survey. Instead he considers the sort of experience that may possibly be available. However, this inquiry does not turn out to be of any help. To begin with, our experience of the outer world does not provide the right sort of impression:

> When we look about us towards external objects and consider the operation of causes, we are never able in a single instance, to discover any power or necessary connection; any quality which binds the effect to the cause, and renders the one an infallible consequence of the other. We only find, that one does actually, in fact, follow the other. (p. 63)

As Hume remarks, events in the world appear to be independent of one another. We do not observe in them—at least when considered individually—any further power from which we could derive subsequent effects. 'Solidity, extension, motion; these qualities are complete in themselves, and never point out any other event which may result from them.' (p. 63)

Nor, according to Hume, is any experience provided by our inner sense of help. Hume rejects the idea that a necessary connection or causal power is experienced when we move our limbs or in the action of the will using six different arguments. But the key idea is that no inner experience of the action of the will can provide an impression of a necessary connection. Mental events, like the physical events experienced in outer sense, appear to be independent of one another and of actions. They are conjoined but not connected. It is quite consistent with any mental event that any other event succeed it.

This result appears to put Hume's general claim that ideas are derived from impressions under threat. If there is no impression from which the idea of a necessary connection is derived, how could one even undertake the search that Hume describes. Hume's own response does not immediately seem to address this point. Instead he suggests that our idea of causality derives not from any single case but from the general connection between events of one sort and events of another sort. If a general relation is observed then:

> we make no longer any scruple of foretelling one upon the appearance of the other . . . We then call the one object, *Cause*; and the other, *Effect* . . . It appears, then, that this idea of a necessary connection among events arises from a number of similar instances which occur of the constant conjunction of these events. (p. 75)

In effect Hume's method works in a negative way. When we go from the (less vital) idea of causal necessity to the (more vital) impressions from which the idea is derived, it becomes clear that all there is, is constant conjunction. Whatever our initial assumption, there is no further sense of causal necessity.

Is there an impression of necessity?

There are two immediately striking features about the suggestions that Hume makes here. One is the naturalistic and descriptive tone of the solution. As a matter of fact we are habituated to moving from the 'cause' event to the 'effect' event by repeated experience. Hume's account of causation is built on a foundation of habits of thought. Secondly, he emphasizes the importance of a *general* relation between types or kinds of events for the definition of *individual* or *single* causal relations between pairs of individual or token events. Singular causal relations depend on general relations. Many recent philosophers have embraced a 'regularity' theory of causality. But, as we will see, it is not clear that this is an accurate view of Hume's account.

One difficulty, which was raised above, can now be put like this. If the idea of a necessary connection between one event and another results from the habitual expectation of events of the second kind on presentation of events of the first sort does this not undermine Hume's claim that every simple idea derives from a corresponding impression? However, Hume preserves the connection between ideas and impressions even in this case, while slackening any connection between impressions and something worldly that corresponds to them. He says: 'This connection, therefore, which we *feel* in the mind, this customary transition of the imagination from one object to its usual attendant, is the sentiment or impression from which we form the idea of power or necessary connection. Nothing farther is in the case.' (p. 75)

It is important to note that, given his sceptical search, 'the feeling of connection' cannot literally be an impression of some connection that is present either in the outer world or in the mind. It is not an impression that is of or responsive to a worldly fact. It is just a feeling—perhaps of inevitability—that is produced in the mind after experience of repeated conjunctions of events. But given this connection between the idea of a necessary connection and this 'impression' it is not clear that Hume himself proposes a true regularity theory analysis of causation. Such an analysis provides a definition of the meaning of causation in terms of regularity (see below). But it seems as plausible that Hume's appeal to regularity is as a precondition for the concept but not part of its meaning. Without regularity there would be no feeling from which the idea of a necessary connection is drawn. But that latter idea is not of regularity. And thus Hume's account is not strictly a regularity analysis of causation. Nevertheless, most Humean accounts of causation take some form of regularity claim for granted.

Hume's three accounts of causation

In fact Hume provides three characterizations of causation in the *Enquiries*:

1. an object, followed by another, and where all the objects similar to the first are followed by objects similar to the second. (p. 76)
2. Or in other words where, if the first object had not been, the second never had existed. (p. 76)
3. an object followed by another, and whose appearance always conveys the thought to that other. (p. 77)

None of these definitions is equivalent. The first is the basis of a regularity theory of causation. The third unpacks Hume's claim that the concept of causation depends on habits of thinking rather than direct experience or the product of reasoning. The first and the third cast light on Hume's account from both objective and subjective perspectives. The second is different, however. Like the first it is a claim about the metaphysical status of causality. But it approaches this from a different perspective. We will explore the relation between this idea and a pure regularity thesis below.

The analysis of causal claims

Two senses of necessity

One of the issues that has so far not been touched upon is what is meant by the claim that a cause and effect stand in a necessary connection. In fact this is a central problem in the philosophical explanation of causation that will be discussed throughout this session (and will not be finally resolved). But it is important first to distinguish between two different distinctions with which it might be confused: necessary versus contingent, and necessary versus sufficient:

1. *Necessity as 'not possibly not'*. A truth is a necessary truth if it could not have been otherwise, if it is not possible that it is not true. This sense contrasts with contingency. This is not the sense of necessity that underpins the necessary connection of cause and effect. As Hume points out, it is *logically possible* that any state of affairs might result from any other. Causal relations are contingent. Smoking might not have been a cause of cancer, for example. If smoking does cause cancer, that is not a necessary truth, by contrast with, for example, the truths mathematics explores, or statements that are true by definition (known as 'analytic truths'). An example of the latter would be 'All bachelors are unmarried men'. (See also Chapter 5.)
2. *Necessity as 'without which not'*. If one event is necessary for another event in this sense, then for the second to occur the first must occur. Without the first event, the second event would not occur. On the other hand if the first is necessary for the second, the second is sufficient for the first. If we know that the first event is a necessary precondition of the second, and if we know that the second occurs, then we can conclude that the first must also have occurred. Necessity and sufficiency are related and complementary notions. As we will see, the 'without which not' sense of necessity, although apparently similar to causal necessity, is not identical with it.

To reiterate, something might be necessary for something else in the second sense while this dependence might not be a necessary fact in the first sense. In order to leave a building it may be necessary to go past the security guard—there may be no other way out; however, this fact is contingent on there being no escape

through a window. Had the architect been less thorough, such an escape might have been possible.

Causation, necessity, and sufficiency

So much then for the two senses of necessity. What has this to do with causation? Even on the assumption, following Hume, that necessity is an ingredient of the concept of causation, what precisely is the connection? Given that causal relations are contingent and thus not necessary in the first sense, then the two most obvious options are that causes are *necessary* conditions for their effects in the *second* sense or that causes are *sufficient* conditions for their effects. Combining these options gives a third position: a cause is a necessary and sufficient condition for its effects.

But there are problems with any of these approaches when set out so baldly and the next reading (linked with Exercise 3), by J.L. Mackie, will help to show this. One problem is that a cause cannot be a necessary condition (in the second sense) for an effect if there is any other way in which the effect could come about. A similar problem is that a cause cannot be a sufficient condition if its effectiveness depends on its being combined with other factors, or the absence of other factors. J.L. Mackie's influential article puts forward a more sophisticated and guarded view of causes that clarifies and avoids these difficulties.

Mackie, a fellow at Oxford from 1967 to his death in 1981, wrote mainly on the British Empiricists, the nature of causation, and on ethics. In this article he explores a broadly Humean model of causation.

EXERCISE 3 (30 minutes)

Read the short extract from:

Mackie, J.L. (1993). Causes and conditions. In *Causation* (ed. E. Sosa and M. Tooley). Oxford: Oxford University Press, pp. 33–50 (extract pp. 33–35)

Link with Reading 15.3

- What does Mackie mean by an INUS condition?
- Could this account capture the use of causation that is made by medical science?

Short circuits cause house fires?

The key idea behind Mackie's INUS condition analysis of causation (defined below) is captured by the following problem. Suppose that experts agree that a house fire was caused by an electrical short circuit. They do not think that the short circuit was either necessary or sufficient for the fire; but necessity and sufficiency do have something to do with it. So what is the 'force' of the claim that it caused the fire? The INUS condition is supposed to reconcile these different elements.

The short circuit was not necessary for the fire because the fire could have come about in a different way: through a short circuit somewhere else or through arson for example. And it was not sufficient because in the absence of oxygen and flammable material or in the presence of an efficient sprinkler system, it would not have come about.

Fig. 15.1 J.L. Mackie

It is worth pausing here to ask whether it would have been the same fire had it had a different origin. This is related to asking what the identity conditions of fires are; do they include their causes? One might say that it is necessary (both 'without which not' and 'not possibly not') for the coming into being of a human that they have some or other biological father. Now consider a particular child. Was it necessary for its coming about that it had the specific father that it did? By analogy with Mackie's comment that a short circuit elsewhere could have caused the same fire, one might say no: it might have had a different biological father. But in fact, most people have the intuition that having your own particular biological parents is a necessary condition for being you. This intuition can be partially unpacked by saying that one would not have the same genetic material unless one did and that genetic material is an essential (although not sufficient) feature of being the person you are. And thus, by analogy, it may be that a short circuit elsewhere would have caused a *different* fire. But we will put this issue aside here and return to the notion of identity in Chapter 23 in Part V.

Electrical faults INUS house fires!

Instead, Mackie suggests that the short circuit was a necessary ingredient of a particular complex condition that was itself sufficient for the fire. Thus, given that there were no other short circuits, the complex condition that brought about the fire had to include just this short circuit. That short circuit had to be combined with the presence of flammable material and the absence of sprinklers

to bring about the fire, but, so combined, the whole complex was sufficient. It was, however, not a necessary condition for the fire on the assumption that entirely different complex conditions could have brought about the fire. Hence the short circuit is an *Insufficient* but *Necessary* part of an *Unnecessary* but *Sufficient* condition for the fire: an *INUS* condition.

The need for a causal field

Mackie goes on to refine the account by adding in reference to a *causal field*. The key difficulty this is designed to remove is this. Unless one goes so far as to build the effect into the complex that is supposed to cause it, no causal complex can be *sufficient* to bring anything about. One way of thinking about this is to consider the (perhaps vanishingly small) temporal gap between the cause and its effect. As long as there is any such gap, then the cause can never be sufficient or *enough by itself* to bring about the effect. If the right thing were to intervene in that instant—such as the hand of God, perhaps—then the effect could be pre-empted. So even if this does not actually happen in a given case, the causal complex normally cited would not, properly speaking, be a sufficient condition.

Mackie suggests that when we say that A caused P, we tacitly imply that this is relative to a further background set of conditions—or 'causal field'—in which intervention by the hand of God, or whatever, is precluded. Thus A might be sufficient in relation to that background. This tacitly presupposed background is important in searching for general causal relations. So, for example, if one is attempting to discover the cause of influenza, one might be interested only in the case of human beings and not rats, or one might be interested in why, given the presence of the virus, some humans caught influenza and others did not: 'In all such cases, the cause is required to differentiate, within a wider field in which the effect sometimes occurs and sometimes does not, the sub-region in which it occurs: this wider region is the causal field.' (p. 39)

Adding in the idea of a causal field rules out a complete *analysis* of causation in independent terms. What it suggests is that Mackie is instead demonstrating the connection between our use of concepts of causation, necessity and sufficiency. It is a matter of charting connections rather than reducing the concept of causation to something supposedly simpler. If the only purpose of philosophy were the reduction of higher level to lower level concepts then this would be a failure. But in fact most philosophical accounts aim more modestly to show the interconnections between concepts. In that context, talk of causal fields remains a refinement to Mackie's general picture.

There is, however, a more fundamental objection to Mackie's position that also motivates the subject matter of a paper by Nancy Cartwright's paper (1983, see Exercise 6) that will be discussed in the next session. The emphasis on even post facto sufficiency has the consequence that indeterministic causation cannot be accommodated within the model. If a state of affairs merely makes another more probable but still less than a probability of 1 then it is not sufficient for it and cannot be a cause of it if Mackie is correct. But typically we *do* think that causes can merely make their effects more probable. According to contemporary accounts of physics, nuclear decay is a matter of probability less than 1. Thus in principle even if the bomb worked as it was designed to in every humanly controllable way dropping the atom bomb on Hiroshima did not raise the chances of an explosion to 1. It remained some small amount less than that. But if so it was not sufficient for the effect. Nevertheless we still generally think that it caused the explosion.

Mackie's use of counter-factuals as telescoped arguments

To return to the main lines of Mackie's account (i.e. putting aside causal fields and the question of whether causes are sufficient for their effects), he suggests that singular causal relations are related to necessity and to sufficiency through two sorts of conditional statements. Thus he suggests that the example 'a short circuit here was a necessary condition of a fire in this house' is closely related to the *counter-factual* conditional 'If a short circuit had not occurred here this house would not have caught fire'. (Recall from Chapter 14: a counter factual conditional is a conditional statement—if . . . then . . . —whose antecedent runs counter to the facts.)

And 'A short circuit here was a sufficient condition of a fire in this house is closely related to the *factual* conditional "Since a short-circuit occurred here, this house caught fire" '. Thus Mackie forges a link between the idea of one event causing another and specific sorts of conditionals holding between them. We will focus on counter-factuals of the sort: had the cause not occurred then neither would the effect. This is a counter-factual conditional because the antecedent runs counter to the facts as, in actual fact, the antecedent did occur.

As we saw above, Hume (1975) used just such a claim to characterize causality in addition to making other comments that look closer to a regularity theory (without apparently realizing that there was any great difference between them). Thus it looks as though Mackie wishes to explain the problematic notion of causation through the idea of counter-factual connections. But this impression is misleading. Mackie goes on to suggest that such conditional claims are in turn 'telescoped' arguments that employ (although often only by implicit implication) universal generalizations or laws. (As we will see not all universal true generalizations are laws but we will set this issue aside for the next few paragraphs.)

In other words, although Mackie's account seems at first sight to be a counter-factual account it really relies on the idea of universal true generalizations or laws of nature. The counter-factuals that are true are true in virtue of underlying natural laws. To return to the context of philosophical analysis, the problematic notion of causation is unpacked in terms of counter-factuals, but these are in turn explained through the more fundamental notion of laws of nature. These are what fix counter-factual

possibility. The very idea of one event causing another depends on there being a law of nature connecting events of the former and latter kind. Necessity at the individual level is analysed by appeal to *nomic* or law-governed necessity.

Counter-factuals or laws of nature?

So one way of thinking about the different possibilities of philosophical analysis here is this. Having spotted the connection between causal relations and specific counter-factual claims one can either:

1. invoke a primitive notion of counter-factual possibility to explain causation directly, or
2. explain counter-factual possibility in terms of a more basic notion of laws of nature.

In fact, in either case, some further philosophical work has to be done. Even in the first case, something more has to be said about which counter-factuals hold true and in virtue of what. In the second, the notion of a law of nature has to be further unpacked, and, as we will see, distinguished from mere accidentally true generalizations.

We will turn (again) to the work of the American philosopher David Lewis a little later to consider an example of the first strategy. But for now we will focus on the second strategy and consider how Hume's problem arises again at the level of laws.

INUS conditions and laws

As we have seen, although INUS conditions look at first sight to define causation by invoking a more primitive notion of counter-factuals, Mackie presents a different account of those to that of Lewis. In the paper discussed above, Mackie suggests that counter-factuals are telescoped arguments based on universal true generalizations or laws. In other words, at its base, Mackie's account is a regularity theory.

But this raises a further question—set to one side above—because a regularity theory depends on an account of what makes the right sort of regularity at the level of laws. What distinguishes a universal true generalization that reflects a genuine law of nature from a universal true generalization whose truth is a matter of accident or coincidence? The one answer that the Humean (relying only on the impression of constant conjunction) cannot invoke is that only in the former case does the generalization reflect the fact that some properties (of forces, perhaps) necessitate others (such as accelerations). Humeans have undermined the idea of causal necessity and replaced it with the weaker notion of conjunction or regularity.

The analysis of laws of nature

Laws and accidents

David Papineau, Professor of Philosophy at Kings College London, has provided a useful summary of the debate in his paper 'Laws and accidents' that is discussed below (Papineau, 1986).

EXERCISE 4 (10 minutes)

Read the short extract from:

Papineau, D. (1986). Laws and accidents. In *Fact, Science and Morality* (ed. G. MacDonald and C. Wright). Oxford: Basil Blackwell, pp. 189–218 (extract pp. 190–191)

Link with Reading 15.4

- What is the problem that Papineau's sets out to solve?
- Why is this a problem for Humeans?

What's the problem?

Papineau focuses on issues that arise at the level of generality rather than individual causal relations. The key question is what distinguishes those generalizations—those universal true generalizations—which are or reflect laws of nature, and those that are merely accidentally true, true by coincidence. But this is closely related to the nature of causality because the necessary connection for which Hume looked between cause and effect might be expected to connect the properties linked in laws of nature. There is a Humean approach to laws that mirrors the Humean approach to causes.

Another way of putting this point is this. Even though Hume suggests that we ascend from particular instances of cause and effect to the general coincidence of types of events, this does not provide any fresh materials *in the world*, with which to analyse the connection between causes and effects. So accounting for natural *laws*, which describe the relation between properties—such that a change in one property will change the other—faces a similar Humean challenge: What *connects* properties in laws given that we can never observe any causal glue? And if the Humean response is that—properly speaking—nothing does, what is the difference between law-like correlations and accidental or coincidental correlations? These are the questions Papineau addresses.

What distinguishes a law of nature from an accidentally true generalization?

What distinguishes a law of nature from an accidentally true generalization? One might say that when there is merely an accidental correlation the antecedent does not *make* the consequent happen. It just happens by coincidence. Papineau gives the following example. Every time he has gone to the football ground at Highbury no goals have been scored. He will thus never go again. Thus there is a universally true generalization: every time Papineau goes to Highbury the score is nil nil.

But the score at Highbury is not nil nil *because* Papineau is in the crowd. It is merely accidentally true. Hume's analysis of causation, however, does not seem to be able to distinguish this case from a genuine causal regularity. Hume's appeal to the level of generality rather than instances to account for causation does not introduce any fresh ingredients at the new level to bind events of

one sort with events of another. They are merely constantly conjoined (and for Hume also contiguous and temporally related). Or so Papineau suggests. So a different response is needed to distinguish laws from accidents.

Laws support counter-factuals

A different response is to point out (echoing this element of both Mackie's and Lewis's (see below) views on causation) that laws support counter-factuals while accidents do not. Laws tell us something about other possible worlds while accidents do not. (This is the same sort of claim that is made about causal relations.) But as Papineau points out, this suggestion leads to a dilemma. If counter-factuals are read at face value then a Humean (who thinks that laws are in some sense *just* constant conjunctions) has to explain why they should hold across other possible worlds. But if counter-factuals are just a figure of speech, then while it may be analytic that laws are classed as 'sustaining counter-factuals', the Humean has to explain why they, but not accidents, are introduced or talked about in this way. In general, Humeans face the task of explaining 'why some constant conjunctions are better than others' (p. 191).

Neither of these points tell *against* saying that laws sustain counter-factuals. In fact, this is a good diagnostic test for whether one thinks of a generalization as a law or as an accident. But it is only a *first* philosophical move. Papineau goes on to discuss two different Humean strategies for explaining what this distinction really amounts to before examining recent non-Humean examples. He summarizes this move succinctly in the *Oxford Companion to Philosophy*:

> At first sight it might seem easy to develop the Humean strategy. Cannot we simply require that laws be truly general, and not restricted to such things as what happened to a particular person in a particular city at particular times? However, this does not get to the heart of the matter. For even if we formulate our example in general terms, not mentioning me or Paris, but specifying a certain kind of person and city, it may still be that the only instances of these kinds in the universe are still, by accident, constantly conjoined with rain. Conversely, there seem to be examples of laws which are restricted in space and time, such as Kepler's law that the planets move in ellipses, which is specific to our solar system.
>
> A better suggestion is that accidents, unlike laws, are no good for predicting the future. This is not because accidental patterns cannot stretch into the future, but rather because, when they do, we cannot know that they are true. J.L. Mackie has argued that laws differ from accidents in that they are inductively supported by their instances, whereas accidents can only be known to be true after all their instances have been exhaustively checked.
>
> However, even if Mackie's criterion is necessary for lawhood, it is not clear whether it is sufficient: couldn't some inductively anticipatable patterns still be accidents? Perhaps a better Humean solution is that proposed by F.P. Ramsey, and later revived by David Lewis: laws are those true generalizations that can be fitted into an ideal systematization of knowledge—or, as Ramsey put it, laws are a 'consequence of those propositions which we should take as axioms if we knew everything and organized it as simply as possible in a deductive system'. Accidents are then those true generalizations which cannot be explained within such an ideal theory.

Two Humean strategies

To unpack that passage, one idea about how to distinguish laws from accidents thus turns on the relation between different generalizations. According to Richard Braithwaite (1900–90), a Cambridge professor of philosophy, a generalization is a law if it fits within an established deductive scientific system. But this makes lawhood depend on what we take (at a particular time) the laws to be and not the other way around. So a better approach is one taken by the philosopher Frank Ramsey (1903–30, a contemporary of Wittgenstein at Cambridge, who died young) and later by David Lewis. A law is a generalization that fits into a deductive system that optimizes the conflicting requirements of simplicity and universality.

Simplicity and universality are in tension because a simple system would only contain only those generalizations that fitted a single deductive system: perhaps the laws of theoretical physics. But that would miss out on laws from other sciences, such as geology, which resist such assimilation into that deductive system. So the idea is that the optimal balance of these conflicting virtues would yield all but only the laws and exclude all merely accidentally true generalizations. The main problem with this idea is that it is by no means clear that we can make determinate sense of what optimizing simplicity and universality would be. It is not supposed to be merely good general advice ('treat as laws only those generalisations that fit into an optimised science . . . !') but actually to specify what is and what is not a law.

The alternative Humean account, put forward by Mackie, connects the problem of laws and accidents to the problem of induction. The key claim here is that laws, but not accidents, are *inductively supported* by (even a subset) of their instances. As we saw briefly in Chapter 13 in the discussion of scientific realists it is arguable that there is more to the notion of evidence for a theory than the mere *consistency* of the evidence and the theory. Theories are not just consistent (or not) with empirical findings. Those findings *support* some of the theories with which they are consistent better than others.

This idea of inductive support can be further illustrated by mentioning briefly Nelson Goodman's New Riddle of Induction (Goodman, 1983). Goodman invents two new predicates: 'grue' and 'bleen' where 'grue' means green until, say, the year 2020 and blue afterwards and 'bleen' means blue until then and green afterwards. Now the predicate 'grue' could be applied to all the healthy grass so far observed as far as past evidence is concerned as could 'green'. But the grass is either grue or green not both. (It either will or will not turn blue in 2020.) So what is it that supports our projecting its greenness into the future not its grueness? What is it

that makes a predicate projectible? (Note that the quick response that grue and bleen are time dependent while green and blue are not is not decisive. A supporter of grue and bleen will point out that 'green' means grue before 2020 and bleen afterwards and thus is time dependent itself.)

Mackie suggests that whatever the answer to that question is, it can be used also to distinguish laws from accidents. Laws are couched in projectable predicates and are thus supported by their instances while accidents are not.

The epistemology of causation

Having sketched two Humean accounts of the difference between laws and accidents, Papineau goes on to consider a non-Humean account. Roughly, this is an account that, contrary to Hume, postulates that there really is a kind of causal glue, a necessitating link between properties and this is what is reported in statements of laws.

Papineau himself argues that even if that were to make sense (contrary to Hume, again) there would be no warrant to believe in such necessary connections because we could not be in a position to gain knowledge of them. His reason for this claim is that the best interpretation of what a non-Humean adds to the Humean account is that of carrying information about other possible worlds.

Now talk of possible worlds—to which we will return below and in more detail in Chapter 23—is a convenient way to illustrate the distinction between contingent and necessary truths (necessary in this case meaning not possibly not rather than without which not). A contingent truth is one that just happens to be true. The US flag is red, white and blue, but it might not have been. It is true in only some possible worlds. We can say that there are possible worlds where it is a different colour. But the fact that two plus two is four is true in every possible world because it is a necessary truth. It is not possible that it is not true.

But while some philosophers think that such talk of possible worlds is just a convenient way of speaking, others think that they really exist. All these other possible worlds are 'out there' in some sense. Papineau argues that supporters of non-Humean approaches to necessitating relations have to believe in possible worlds in this literal sense if they are to explain what causal necessitation means. But since there can be no (causal) contact between different possible worlds, we can never know the (putative) non-Humean facts about laws or causation that (non-Humeans argue) exceed those given in the Humean account.

Literal versus metaphysical construals of possible worlds

Papineau's argument that non-Humeans have to take talk of possible worlds literally (as existence claims about other non-actual worlds) is this. Non-Humeans do have to account for the meaning of their claim that there is a necessitating relation between properties linked in laws. As Humeans such as Mackie also talk of possible worlds non-Humeans have to distinguish themselves in some way. Papineau suggests they must take possible worlds to be real. (But if so then as we cannot be in causal contact with other possible worlds we should not *believe* in necessitating conditions.)

The moral?

There is something strange about this argument, however. Note the ad hominum point that Lewis famously believes possible worlds are real and yet supports Humeanism. As Papineau reports earlier in his paper, a Ramsey–Lewis model of laws explains why laws hold across possible worlds without implying the existence of any non-Humean ingredient connecting properties. In any case, a possible world reading of the necessitating relation seems wrong because it is supposed to be a relation in *this* world. It seems that non-Humeans cannot appeal to possible worlds to explain this and hence what sense can they give to it. In other words, it is arguable that non-Humeanism is worse off than Papineau suggests.

On the other hand, neither of the two Humean distinctions between laws and accidents is completely satisfactory. The Ramsey–Lewis model depends on optimizing the opposing virtues of simplicity and universality. But what sense can we apply to this advice? How could we decide what the right balance between, for example, extending the system to include more laws at the risk of increasing the total number of free-standing independent deductive systems? Although its opposing virtues have an intuitive appeal, it is not at all clear how they should be applied to real cases.

The Mackie (1993) account, however, writes a cheque on the solution to the New Riddle of Induction. Effectively it reduces two philosophical problems to one. But it does not actually supply an answer to that one problem. The solution to the problem of the distinction between laws and accidents thus remains wide open.

Reflection on the session and self-test questions

Write down your own reflections on the materials in this session drawing out any points that are particularly significant for you. Then, looking back especially at the reading from Hume, write brief notes about the following:

1. What role does causation have in medicine?
2. What is the philosophical puzzle about causation? Does Hume solve it?
3. How does Mackie's analysis of causation as an INUS condition relate to Hume's brief definitions?
4. What general problem about laws does a regularity theory of causation raise?

Session 2 A probabilistic view of causation?

Two strategies for explaining causation again

In this session we look at two more recent attempts to explain the nature of causation. We then return to the connection between causes and laws and thus the structure of 'the realm of law'.

We saw above that there were two obvious strategies inspired by the connection between causation and counter-factual conditionals:

1. invoke a primitive notion of counter-factual possibility to explain causation directly, or
2. explain counter-factual possibility in terms of a more basic notion of laws of nature.

Mackie takes the second line, but this raises questions about how we can characterize those generalizations that are laws from those that are mere accidental true generalizations. David Lewis takes the other view to which we will now turn.

Lewis's work on explanation has already been discussed in Chapter 14. That discussion focused on the idea that an empirical explanation should cite some of the causal history of the event or fact to be explained. In his paper 'Causation', Lewis ([1973] 1993) complements that claim with a sketch of how the concept of causation should itself be analysed. Having looked at some of the advantages and disadvantages of Lewis's strategy, we will return to the prospects of something like Mackie's (1993) account with its underlying regularity or law-based analysis.

Lewis bases his approach on the following thought:

> Hume defined causation twice over. He wrote '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 had existed.' Descendants of Hume's first definition still dominate the philosophy of causation: a causal succession is supposed to be a succession that instantiates a regularity . . . It remains to be seen whether any regularity analysis can succeed . . . I have no proof that regularity analyses are beyond repair, nor any space to review the repairs that have been tried. Suffice it to say that the prospects look dark. I think it is time to give up and try something else.
>
> A promising alternative is not far to seek. Hume's 'other words'—that if the cause had not been, the effect never had existed—are no mere restatement of his first definition. They propose something altogether different: a counter-factual analysis of causation. Lewis (1993 p. 193)

Causation and counter-factuals

The key idea behind the strategy is this. Lewis accepts the characterization of causation given by Hume in counter-factual terms. But rather than attempting to explain the counter-factual in terms of regularity (in line with Hume's other characterizations as well as most post-Humean philosophy on the subject), Lewis bites on the bullet and attempts to explain counter-factuals in other terms. This he does through the idea of different possible worlds.

But to get a feel for the difficulty here, it will be useful to pause and think about what a counter-factual is about and what makes it true or false.

EXERCISE 5 (10 minutes)

Think for a moment about counter-factual conditional claims.

First, what is a conditional claim? Write down a statement with the characteristic if . . . then . . . form. Now think up a conditional whose antecedent (first bit!) runs counter to the facts, i.e. is not true. Write it down. Now think about how the statement works. What is it about? What facts does it answer to? How would you decide whether the counter-factual conditional you have written down was true or false?

When you have read about Lewis's account of counter-factuals below ask yourself whether it is an objective or valid account in the sense discussed thoroughly in Chapter 13. Does it answer to something independent of human judgement?

What is the problem with counter-factuals?

What is the problem with counter-factuals? Why do they need an analysis? Take again the example mentioned at the start of this chapter:

> *If* John F. Kennedy had not been assassinated *then* Lyndon B. Johnson would not have become president.

This expresses a claim about what would have happened if something else, which did not in fact happen, had happened. It may be true or false. (Perhaps there is reason to think that he would have become president in the longer term in any case.) But if it is true, what is it true in virtue of? What makes it true?

Consider the simpler claim:

> John F. Kennedy was assassinated

This is true. We might happily say that the sentence 'John F. Kennedy was assassinated' is true because it is a fact that John F. Kennedy was assassinated. There is a good question about how explanatory this is of the notion of truth because it is unclear that we have any clearer idea of *facts* than *truth*. (Perhaps the best we can say is that facts are what true sentences state. But that requires that we already understand the concept of truth and so this approach to facts could not also be used to explain truth.) But it does seem more plausible to say that it is true because of how the world is than to say that the first claim is true because of how the world is. The reason for that is that in this world Kennedy was assassinated. So with what can the *counter-factual* conditional be compared? Hence the need for an analysis of what makes a counter-factual true.

Lewis agrees with Mackie (and everyone else) that there is a close connection between causal relations and counter-factuals,

but he offers a novel account of the latter. This is spelt out as follows:

> If p were true then q would be true' is itself true iff (if and only if) there is a possible world where both are true which is more similar to this world than any where p is true and q is not. Or: a counter-factual is non-vacuously true iff it takes less of a departure from actuality to make the consequent true along with the antecedent than it does to make the antecedent true without the consequent. (p. 197)

One way of thinking of this general strategy is as follows. (Don't worry if this does not help!) Lewis accepts Hume's claim that we cannot make sense of a this-worldly necessary connection between cause and effect (a kind of causal glue). So instead he attempts to deploy a notion of necessity in terms of relations to other possible worlds. In so doing he moves towards the sense of necessity that means not-possibly-not. (But he does not attempt to define causal relations as holding across *all* possible worlds. Counter-factuals are defined in terms of relations to certain close possible worlds.)

One cost of a possible world analysis of counter-factuals

There are, however, serious 'costs' attached to this solution. One is spelling out the idea of relative similarity of possible worlds. Van Fraassen (1980) points out that Lewis's analysis requires a prior understanding of *relative similarity to actual world history*. Thus it requires assessment of what is more similar. But, Van Fraassen suggests, this is an essentially context dependent issue.

> If the plant had not been sprayed
> (and all else had been the same)
> then it would not have died . . .
>
> It is true in a given situation exactly if the 'all else' that is kept 'fixed' is such as to rule out death of the plant for other reasons. But who keeps what fixed? The speaker, in his mind. There is therefore a contextual variable—determining the content of that tacit *ceteris paribus* clause—which is crucial to the truth-value of the conditional statement. Let us suppose that I say to myself, *sotto voce*, that a certain fuse leads into a barrel of gunpowder, and then say out loud, 'If Tom lit that fuse there would be an explosion.' Suppose that before I came in, you had observed to yourself that Tom is very cautious, and would not light any fuse before disconnecting it, and said out loud, 'If Tom lit that fuse there would be no explosion.' Have we contradicted each other? Is there an objective right or wrong about keeping one thing rather than another firmly in mind when uttering the antecedent 'If Tom lit that fuse . . . '? It seems rather that the proposition expressed by the sentence depends on a context, in which 'everything else being equal' takes on a definite content. (p.116)

In Van Fraassen's example, is it the case that if Tom had lit the fuse then the bomb would have exploded, or is it the case that if Tom had lit the fuse he would have already disconnected it from the bomb? If we know that Tom is cautious then the latter may seem the most important factor in assessing relative similarity. But what hope is there of settling questions of relative similarity objectively?

A second cost of a possible world analysis of counter-factuals

Of course, examples like this trade on intuitions. But as Lewis (1993) intends to analyse the very idea of one thing depending causally on another—which one would ordinarily think of as an objective matter—on ranking of relative similarity, some account of how this is to be calibrated is required. But it is not forthcoming. There is another price to pay for a possible world analysis of counter-factuals: a belief in possible worlds. This point can be put by asking what is the foundation of our understanding here? Do we understand counter-factual claims because we have an antecedent understanding of possible worlds and their relative similarity relations? Or do we instead only understand the *facon de parler* of possible worlds because we already have an understanding of counter-factual claims? Lewis wants to claim the former, but to make a distinction he has to claim that he takes talk of possible worlds literally. They really exist, it is just that they are not actual. Actuality is itself an indexical term. (*We* say of *this* world that it is actual. Our counter-parts on other worlds may use the same words to say a different but parallel thing.) But how convincing is the claim that we can 'unpack' the supposedly more problematic conception of causation in terms of the supposedly less problematic idea of other equally real but non-actual possible worlds?

In a sense similar to one that will be explored in Chapter 16, Lewis's counter-factual and possible world account of causal relations and hence of causation is more a 'research programme' than a single instance of philosophical analysis. Thus objections of Van Fraassen's type serve more to show the work that would have to be carried out rather than to refute Lewis claim in one blow. Nevertheless, the prospects look equally bleak for the prospects of formalizing the primitive notion of relative similarity of possible worlds as Lewis claims they do for a regularity analysis of causation.

Causation and probability

We touched on an important criticism of Mackie (1993) earlier. This is that Mackie's model is a limited form of sufficient condition while we now acknowledge the role of causal relations that are not sufficient, in a logical sense, for their effects.

Recall that on the INUS account, a cause involves a condition that is unnecessary but, given an assumed causal field, is sufficient for its effects. It is sufficient in the circumstances. But many sciences invoke notions of causation that are weaker than this. They construe causation as a relation that can occur even if the cause only makes the effect *probable*. The next approach to analysing causation discussed in this chapter considers just such a proposal and argues against it to the effect that causation cannot be definitionally reduced to a probabilistic or statistical notion.

EXERCISE 6 (20 minutes)

Read the short extract from:

Cartwright, N. (1983). Causal laws and effective strategies. In *How the Laws of Physics Lie*. Oxford: Oxford University Press, pp. 21–42 (extract: pp. 23–25)

Link with Reading 15.5

- What are Cartwright's arguments against a probabilistic account of causation?
- If correct, why would they imply that causal laws could not be derived from 'laws of association'?

If a cause need only raise the chances of its effects (by some amount yet to be specified) might it be possible to *define* causes this way: as conditions that raise the chances of other events or facts. Of course *this* possibility is not a consequence of indeterminacy: causation may resist any such definition. But it is an attractive suggestion for a philosophical account of causation.

This is one of the projects that Nancy Cartwright considers and rejects. She claims that it is impossible to extract causal relations from statistical correlations without building in some prior assumptions about what causes what. A consequence of this (if it is true) is that causation cannot be defined from statistical 'laws of association'. Cartwright's conclusion, to which we will return shortly, is that causation resists definition and is *sui generis*.

One of the reasons for Cartwright's claim is illustrated by the example of a letter from an insurance policy: 'It simply wouldn't be true to say, "Nancy L D Cartwright . . . you own a TIAA life insurance policy you'll live longer." But it is a fact, none the less, that persons insured by TIAA do enjoy longer lifetimes, on the average, than persons insured by commercial insurance companies that serve the general public.' (p. 22)

Cartwright claims that one needs the notion of causation to ground that of an 'effective strategy' in order to distinguish between the fact that there is an association between having a life insurance policy and living longer and the further fact that taking out a policy is an effective strategy for living longer.

The argument against reduction

Cartwright's (1983) key argument against the reduction of causation to a probabilistic relation is this. Suppose that two factors are connected as indeterministic cause and effect. It may seem therefore that a cause ought to increase the probability and thus observed frequency of its effect. But this may not happen in fact if there are other causal factors at work. 'Background correlations between the purported cause and other causal factors may conceal the increase in probability which would otherwise appear.' (p. 23)

In her example, if smoking is correlated with a sufficiently strong preventative factor, the expected increase in the probability of heart disease among smokers will not show up. But how is this to be ruled out without specification that other *causal* factors are absent? Cartwright suggests that the best that can be done by way of a probabilistic analysis of causation is: ' "C causes E" if and only if C increases the probability of E in every situation which is otherwise causally homogenous with respect to E.' (p. 25)

However, this cannot serve to *define* causation because it presupposes the idea of causal homogeneity. There is clearly a connection between probability and causation. We use statistical tests of probability of non-random association as 'probes' for causal relations: e.g. the association between smoking and lung cancer identified by Sir Richard Doll as an epidemiologist led to subsequent research on the underlying causal mechanisms. Cartwright is not undermining that connection. But she does claim that we cannot define causation in terms of probability. It is worth recalling from Chapter 13 that Cartwright argues that there is a close connection between explanation and the citing of causal factors. Having renounced the aim to reduce the concept of causation to whatever raises the chances of its effects, Cartwright still stresses the claim that a causal explanatory factor must increase the chances of is effects (relative to a background that holds constant all other *causal* factors).

Laws of association and effective strategies

In the second part of her paper, Cartwright (1983) goes on to argue that a parallel difficulty faces any attempt to define effective strategies for achieving ends simply in terms of probabilities. Causal laws are needed in characterizing effectiveness because they pick out the right properties on which to base one's conditional probabilities. Otherwise, a strategy can appear to be an effective strategy—to reduce heart disease—because of a statistical connection that is in fact the result of a different but correlated causal factor.

Cartwright's conclusion is that there is a connection between causation, strategies for attaining one's ends, and raising probabilities. But she argues that this does not allow the definition of either of the first two in terms of the third. The objectivity of causal laws is what the effectiveness of means-end strategies depends on and also what their accurate statistical measurement depends on. But this leaves causality undefined: a primitive concept in our description of the world.

Epistemology again

The fact that causation could not be defined in terms of probabilistic relations would not imply that statistical findings could play no role in the *epistemological* matter of finding out about what causal relations hold in the world. But it would imply that this inference—like many in science—involved an element of holism or bootstrapping. The interpretation of statistical correlations is only a reliable guide either to causal relations or to effective strategies if one already knows what is the right way to partition the facts or conditions that are statistically correlated. 'Only partitions by causally relevant variables count in evaluating causal laws' (Cartwright, 1983, p. 38). On the other hand,

statistical correlations are still a valuable source of evidence for causal relations, but only if one already knows some other causal information.

It is worth stressing again, that the philosophy of causation has by no means reached a settled stage. There are competing research programmes, one of which aims to characterize causality in probabilistic terms. But if Cartwright is right then not only does the reduction of causation to probabilistic relations fail, but so does any reduction. Causation is a primitive notion that defies analysis in other terms. It is connected to the raising of probability but not in such a way that allows its elimination (i.e. by translating causality into probability). As we will see shortly, this does not sever the connection between causes and laws.

Hume's challenge again

Think again about what the arguments have so far shown. Hume's argument attempted to show that there was something wrong with the way we think of causation as part of the world. The notion of necessary connection could not be traced back to any experiences of the world or of the interaction of the mind and body. Given this negative result he then at least seemed to offer positive definitions of causation that replaced any such worldly component with an alternative picture of both how the concept of causation originates and what it amounts to, i.e. a relation of 'constant conjunction' of events. The problem with these characterizations, however, is that they seem to give us less than we want from the notion of causation and, by extension, from laws of nature.

There is, however, a different response available to Hume's critical inquiry into the impressions that supposedly ground the concept of causation. One need not accept that the failure of Hume's reduction of the concept to anything more primitive undermines its reality or our pre-philosophical understanding of its nature. One might instead accept that the reduction of causation is impossible while taking this simply to reaffirm its *primitive* status in our ontology. We understand the world to contain both causal relations and laws of nature over and above the coincidences and statistical relations we observe. These are connected to the notion of making something happen, bringing it about, sustaining counter-factual claims about what would have happened and so on. But none of these related notions allows a conceptually unproblematic independent definition of causation.

The connection between causes and laws remains

A further connection between causes and laws

Even if such a non-reductionist realism about causality is the right moral to draw from the debate, however, it does not undermine the close if not definitional connection between causes and laws. The American philosopher of mind and language Donald Davidson (1917–2003) whose work will be discussed throughout Part V argues for just such a connection in 'Laws and cause' in *Dialectica* 49 (1995, pp. 263–279).

Singular causal relations and epistemology

Davidson (1995) argues that the thesis that there is a connection between causes and general laws need not turn on a denial of the phenomenological claims that we can directly perceive that one event has caused another without evidence from similar cases. In other words he turns his back on arguments inspired by Hume's examination of the source of an impression of necessity. This is an important point. Davidson does not subscribe to an *epistemological* argument that turns on this claim and concludes instead that causation must mean something else. Epistemology is not important in Davidson's argument so he can afford to say that we can directly perceive singular causation.

This point is worth taking a little slowly. Davidson reports the philosopher John McDowell as saying that, without a particular picture of the relation of language to the world with which language deals, there is no reason to deny—as Hume denies—that singular causal relations are 'given in experience'. Now the details of that philosophical picture—it is called 'scheme-content dualism'—do not matter here. But McDowell draws the conclusion that it is only with some such philosophical theory in place that one will want to deny that one can observe singular causal relations. If this is so, then Hume's sceptical inquiry into the grounding of our concept of cause presupposes doubtful philosophy and its outcome might just as well be the denial of that philosophy as the denial that we can experience individual causes.

Davidson's response is to concede that point but maintain that it does not undermine Hume's basic claim that where there are causes there must also be laws and that this is consistent with an epistemology in which direct detection of singular causes is possible. He goes on to discuss informal experiments by the philosopher C.J. Ducasse in which audiences do report epistemologically one-off causal relations.

Changes and laws

Davidson (1995) suggests these experiments lead to a definition of causation that is something like this. 'If c is the only change in situation S which precedes the only subsequent change e in S, then c is the cause of e.' (p. 271). At first sight this looks very different from Hume's characterization of causation in terms of regularity. But Davidson argues that the difference is more apparent than real once one also realizes that the recognition of something as a change requires some background assumptions about what counts as no change:

> It is not surprising, then, that singular causal statements imply the existence of covering laws: events are changes that explain and require such explanations. This is not an empirical fact: nature doesn't care what we call a change, so we decide what counts as change on the basis of what we want to explain, and what we think available as an explanation. In deciding what counts as a change we also decide what generalizations to count as law-like. (p. 273)

This is a Wittgensteinian point. The key idea is that there is no 'theory neutral' perspective from which to judge that two events or actions are relevantly similar or that there has been no relevant change in nature that calls for explanation. The notion of sameness and difference is always relative to a rule. Judging that objects are the same in respect of colour turns on the rules of colour ascription. For example, one would not complain to a car manufacturer that there was something wrong with its paint if it seemed to change colour under sodium light. Judging that two objects are moving in the same way turns on the rules of kinematics. Thus if a body continues to move in a straight line at uniform speed, we no longer think that anything needs explanation. It is changes that need explanation. But our post-Newtonian view differs from that of the Greeks who did think that an explanation was needed for why, e.g., arrows continued to move. Davidson suggests that these points also imply that to understand the kinds of changes that stand in causal relations presupposes a background that gives sense to these through an idea of contrast.

Causation and explanation

The conclusion Davidson (1995) draws is that whatever our awareness of individual or singular causal relations in the world, there is still a fundamental relation between causal relations and laws. In drawing this conclusion Davidson provides support to a claim that has been implicit in the last two sessions. There is a close connection between the concept of *causation* and causal *explanation*. Davidson highlights this connection through the idea that causes have to be picked out as changes against an unchanging background. It is the changes that stand in need of particular explanation and thus have to be charted as effects of antecedent causes. Our concept of cause is thus informed by what we take to need explanation and what can be used as part of that explanation.

Conclusions? Four responses to Hume

We can now take stock. The material of this session and the last has concerned the recent philosophical discussion of causation and, to a lesser extent, its relations to laws of nature. Hume's discussion has been crucial in the history of the subject but the correct response to the problems Hume highlighted remains unclear.

1. One approach seeks to offer a regularity theory of causation following one of Hume's own characterizations. Such analysis faces a related problem at a higher level of generality: what distinguishes laws from mere accidental correlations, given that one cannot say without some further explanation that the antecedent conditions in laws make subsequent effects happen. However, even if the problem of separating laws and accidents could be solved—both conceptually and epistemologically—there remains a further problem according to Cartwright (1983). One cannot milk the concept of causation from laws of association.
2. Another strategy is to take Hume's suggestion that causes are connected to counter-factual conditionals. Now this connection is also exploited in broadly Humean regularity theories. Such theories attempt to explain counter-factual conditionals as truncated arguments using general laws. But Lewis (1973), as we saw above, attempts to characterize them independently of general laws and thus dodge the problems just summarized. He faces different and grave difficulties, however, in spelling out just how the relative similarity of different possible worlds is to be 'measured' if his solution is to provide any genuine insight.
3. A third option is to define causation in probabilistic terms. We have not examined this in any detail because it faces Cartwright's (1983) objection: How is the relation between causality and probability to be spelt out in terms which do not involve partitioning according to causal factors? (In addition it is worth noting that if probability is taken to be underwritten by probabilistic laws, the problem of laws and accidents will recur in this third case.)
4. A fourth possibility is to accept the current failures of analysis of causation as indicative of something deeper. Perhaps causation cannot be given a reductionist analysis and is simply a primitive concept in our ontology. This does not mean that it cannot be given any further characterization. It is connected to counter-factual reasoning, to the idea of making things happen and, as we have just seen, to explanations of a certain sort.

The connection of causes and laws in psychiatric diagnosis

Causation has played a part in the two previous chapters: in the very idea of a fruitful classification that can help reveal aetiology, and in the nature of diagnosis. This chapter has examined the concept of causality in more detail. Whatever final analysis might be arrived at, there does seem to be an important connection between causes and laws. At the very least, laws play a central role in the epistemology of causation and thus the development of psychiatric aetiology will turn on the development of body of

Reflection on the session and self-test questions

Write down your own reflections on the materials in this session drawing out any points that are particularly significant for you. Then write brief notes about the following:

1. What was Hume's second definition of causation and how does it suggest an alternative to a Regularity Theory of causation?
2. How successful is Lewis' account of a counter-factual?
3. How else might causation be defined?
4. What connections might remain between causation and general natural laws?

psychiatric laws. We also saw that one of the virtues of a classificatory system emphasized by Hempel and discussed in Chapter 13 was that it should fit existing laws and suggest new laws (in effect, construct validity). Thus the discovery of laws seems to be an essential feature of a conception of psychiatry as a successful science. But is that all there is to psychiatric understanding?

Session 3 The realm of law and the space of reasons

So far this chapter has been concerned with the nature of causes and their connection with laws of nature. Causation is an important ingredient in medical and psychiatric aetiology. Finding the causes of psychiatric symptoms is an important aim of medical research and promises to be a step towards a psychiatric classification based on deeper underlying similarities and differences rather than merely what can be observed on the surface, as the extract from Hempel suggested in Chapter 13.

Causes and explanation

Furthermore, whatever its precise nature, there are plausible arguments to suppose that some relation exists between causation and lawhood. Thus one strand of psychiatric research promises to aim at the subsumption of psychiatric phenomena under laws. This is (or should be) part of the aim of a scientific psychiatry. We have also seen from Chapter 14 that on one prominent model, there is also a relation between such subsumption under laws and scientific explanation. Whether or not the formal Deductive-Nomological model is really adequate to accommodate all scientific explanations (and to preclude non-explanations), what seems right about it is that subsumption under laws is at least one way of explaining things. It is one way of revealing an underlying pattern in otherwise diverse phenomena.

This session, however, picking up on the themes of Part II of the book, will focus on a different pattern, which, following Wilfrid Sellars and John McDowell, we can call fitting events into the normative 'space of reasons'. The key question is whether the pattern provided by the 'space of reasons' is fundamentally different from and discontinuous with the 'realm of law'. We will explore this question by charting four different views of the relation between the space of reasons and realm of law.

Plan of the session

The first two views discussed embody a shared response to this question. The first, expressed in McDowell's *Mind and World* (1994), emphasizes the difference between causes and reasons as different modes of intelligibility while in no way denigrating the realm of law.

The second emphasizes the consequences of the distinction between reasons and causes or laws for the social sciences. Peter Winch's influential *The Idea of a Social Science and its Relation to Philosophy* (1958) argues that meaningful behaviour resists incorporation in a causal law-like social science and requires a different model.

An opposing view argues that the two kinds of approach can be reconciled. The contemporary UK psychologist and philosopher, Derek Bolton, argues that reasons and causes can be assimilated in information-rich causal sciences on the assumption that the brain encodes meanings. If so then what McDowell (1994) calls the space of reasons is really just a part of the realm of law.

The fourth view that will be discussed is from Brown and Harris's (1978) now classic empirical study of the *Social Origins of Depression*. It provides a less ambitious assimilation. Brown and Harris argue that meaningful events can cause depression, although they make no attempt to unite the structure that imparts meaning to the events with the structure of causal laws that connects those events to subsequent depression.

McDowell's (1994) account of the distinction between the space of reasons and the realm of law

The background to *Mind and World*

The first view, then, is drawn from John McDowell's collection of lectures *Mind and World* (1994). The first lecture of this collection was discussed in Chapter 12 on the theory dependence of data. It introduced the idea that perception involves the ineliminable interplay of two ingredients that are not separable. Drawing on Kantian philosophy, McDowell characterizes these as the 'faculty of receptivity' and the 'faculty of spontaneity'. Talk of receptivity is meant to capture the idea that perceptual experience is passive in that we open our eyes to how things are in the world. But McDowell follows Kant in claiming that even here, our *conceptual* abilities are also—albeit passively—drawn into play. Experience is always already conceptualized. These conceptual abilities are the very ones used in active judgements—the domain of the faculty of spontaneity.

The reason for this last claim—that concepts are passively drawn into play in experience—is that only so is it plausible that perception can have *rational* consequences for the beliefs that we form about the world. The only model we have of rational relations between mental states is that which holds between conceptualized beliefs. Thus if these are to be in rational contact with how the world is, then they will have to be grounded ultimately in conceptualized experience, in which the state of the world is taken in through experience.

In the short extract below (linked with Exercise 7) McDowell (1994) further characterizes the conceptual order, its characteristic form of intelligibility and its relation to that form of intelligibility that rose to prominence in the seventeenth century in the West: the realm of law. The idea is that in what is often called the 'Scientific Revolution' of the seventeenth century, the rapid development and rise of influence of the natural sciences, also promoted a particular way of understanding or rather explaining the natural world: charting laws of nature. This kind of

understanding is different from that involved in the interpretation of texts that was central to the discussion of the Methodenstreit and Jaspers in Part II of this book. Furthermore, the rise of natural science defeated the previous view of even the natural world as a kind of text with built in meaning. But while McDowell applauds the technological achievement of natural science he argues that we should not take it for granted that that is the only way of discovering what is real. That, however, leaves the problem of relating understanding and explanation.

EXERCISE 7 (60 minutes)

Read the extract from:

McDowell, J. (1994). *Mind and World*. Cambridge, MA: Harvard University Press, (extract pp. 70–72)

Link with Reading 15.6

- Try to extract the broader distinction between the space of reasons and realm of law.
- What is McDowell's attitude towards the naturalness or otherwise of the former?

McDowell's concern is with the connection between nature and what is natural on the one hand, and with meaning and what is meaningful, on the other. As he points out, it was a hard-won achievement to separate the kind of intelligibility found in the natural sciences from those deployed in the interpretation of texts. We no longer believe, as the mediaevals did, that nature is a book of quasi-moral or mystical lessons for us. Instead the kind of intelligibility that characterizes the natural sciences is distinguished as answering to different organizational principles which are, in part, the subject matter of the philosophy of science.

A central tension

McDowell argues that the structure that governs our use of concepts is distinct from, is *sui generis* by comparison with, the realm of law. This presents a tension, however, because we also tend to think that nature can be completely described in scientific terms. We think that the realm of law exhausts nature. The tension arises from the fact that our use of (meaningful) concepts cannot be fitted into that structure (i.e. the structure of the realm of law) and thus can seem to be unnatural (outwith nature).

As we saw in Chapter 12 on observation, McDowell argues that perception involves concepts. Perceptual experiences are always conceptually structured. Thus on the one hand, perceptions seem to lie outside nature because concepts cannot be fitted into the realm of law. But on the other hand, perceptions seem to be part of the ordinary course of nature, a natural feature of human life. And thus there is a tension.

To repeat, the problem is that if concepts are an essential part of perception or sensibility, and if concepts cannot be explained from the perspective of the realm of law implicit in the natural sciences, then perception cannot be fully explained using the natural sciences. This may suggest that perception of the world is not itself a *natural* phenomenon. McDowell is centrally concerned with perceptual experiences but the same general point applies to all concept use in, for example, reasoning. Because the space of reasons appears, at first sight at least, to be different from the realm of law, if we assume that nature can be fully described using the latter, then reasoning seems to be unnatural.

McDowell goes on to suggest that there are three different responses to this tension that are typically made in philosophy.

First response to the tension: bald naturalism

Bald naturalism, according to McDowell, is the attempt to show how the conceptual structure of the space of reasons—'relations of justification and the like'—can be framed in the terms appropriate to the realm of law. In other words, it attempts to provide a translation of meaning-laden terms into a purely law-like idiom. Although McDowell does not say this, a baldly naturalistic view would be one which like the work of the US philosopher Jerry Fodor in the philosophy of thought and language, attempted to 'naturalise' intentional concepts by showing precisely how meaning is the result of 'natural' causal or law-like relations (see Part V, Chapter 24). (In fact things are more complicated than this. Fodor does not so much attempt to explain the structure of rational or reason relations in terms of causal processes as the more modest aim of showing, in purely causal law-like terms, how it is possible for our thought processes to track rational relations. This is not quite the same thing as explicating that rational structure in causal terms.)

Surprisingly, McDowell does not offer much in the way of explicit argument against bald naturalism in *Mind and World*. His aim in these lectures is instead to explore the challenges to a philosophical perspective that already accepts that the space of reasons is genuinely distinct from that of laws. But there is an argument that he gives elsewhere that the two structures cannot be mapped onto one another. This is that such a mapping would require that the rational structure of reasons could be codified: it could be organized into a prescriptive, deductive structure of general principles that is independent of context. But while certain areas of rationality have been given a codification—Frege's predicate logic being the best example—this is not plausible in general. Rationality must include, as well as deductive relations, both inductive support and perceptual evidence. In neither case is there much prospect for a context-neutral characterization of reasons for belief.

Second response to the tension: anomalous monism

The remaining two responses considered by McDowell disagree with bald naturalism in that they take the different structures of the space of reasons and the realm of law as genuinely distinct. The first, however, which McDowell ascribes to Davidson, takes it that although the two conceptual structures are genuinely

distinct, they can both hold of the same subject matter at the level of particulars. This is the purpose of Davidson's answer to the mind–body problem: anomalous monism, which will be described more fully in Chapter 23. The very same states are both mental—governed by rational principles—and also physical—occupants of the realm of law.

McDowell's objection to this picture turns on the naturalness that the picture ascribes to experience. If being a natural phenomenon turns on being explicable within the realm of law and if the faculty responsible for conceptual abilities—the faculty of spontaneity—'functions in the space of reasons' then 'spontaneity cannot permeate the operations of sensibility as such' (p. 75), and 'So if we go equating something's place in nature with its location in the realm of law, we are debarred from holding that an experience has its conceptual content precisely as whatever natural phenomenon it is.' (p. 76).

It is quite difficult to interpret these passages so as to determine what the precise objection to Davidson's reconciliation of reasons and causes (or laws) is. But as we will see in Part V, it turns on the following concern. If mental states are identified with free-standing internal states of the body, then their intentional or meaningful properties, their 'aboutness', becomes mysterious.

McDowell argues that there is a common strand from Descartes, through Locke, to modern functionalist accounts of mind and other forms of representationalism. In each case, mental states, including experiential states, are construed as 'self-standing configurations in an inner realm' (McDowell, 1986, p. 151). The motivation for this, he suggests, is that it allows for a science of man that can appeal to 'states of the organisms whose intrinsic nature can be described independently of the environment' (p. 152):

> Now this intellectual impulse is gratified also in a modern way of purportedly bringing the mind within the scope of theory, in which the interiority of the inner realm is literally spatial: the autonomous explanatory states are in ultimate fact states of the nervous system, although, in order to protect the claim that the explanations they figure in are psychological, they are envisaged as conceptualized by theories of mind in something like functionalist terms. This conception of mind shares what I have suggested we should regard as the fundamental motivation of the classically Cartesian conception; and I think this is much more significant than the difference between them.
>
> McDowell (1986, p. 153)

But, he argues, so construed the mind goes 'blank or blind' because it is impossible to see how such free standing internal states can be about anything. They can be caused by and cause changes in the outside world, but that is not to say that they stand in rational meaningful relations as well as causal relations to states of the world.

Third response to the tension: resonating to reason is in our nature

The third position is the one that McDowell wishes to advocate. It accepts that there is a genuine contrast between the structure that governs reasons and that operative in the realm of law and does not help itself to the quick ontological fix of postulating a neutral subject matter. Instead, McDowell argues that we have to broaden our conception of what is natural so as to include the fact that we as natural animals can 'resonate' to the demands of reason. This is part of our 'second nature': 'To see exercises of spontaneity as natural, we do not need to integrate spontaneity related concepts into the structure of the realm of law; we need to stress their role in capturing patterns in a way of living.' (1994, p. 78).

McDowell goes on to deploy an analogy with moral judgements to try to underpin this picture.

A parallel with moral judgement

McDowell suggests that the best way to think about moral judgements—a way he attributes to Aristotle—is to regard as the purpose of a moral upbringing the opening up of recipients, through the development of practical wisdom, to the moral demands of situations that are 'there anyway'.

> The ethical is a domain of rational requirements, which are there in any case, whether or not we are responsive to them. We are alerted to these demands by acquiring appropriate conceptual capacities. When a decent upbringing initiates us into the relevant way of thinking, our eyes are opened to the very existence of this tract of the space of reasons. (1994, p. 82)

McDowell goes on to criticize one of the motivations for rejecting the underlying moral realism that he advocates. This is the thought that reality can be conceived as though from a position external to our language, concepts, and practices. So conceived, we would be able to think (and philosophize) about the relationship between the conceptual structure of our language and the world. What is more, we might try to ground such theorizing by thinking of nature from the perspective of scientific thinking (the realm of law, or perhaps Williams's Absolute Conception as discussed in Chapter 13). If so we might try to characterize the nature that is there independently of us as comprising only what is revealed by the natural sciences, and thus not the sort of nature that can make rational or moral demands on us. From this perspective, ascribing the source of moral demands to the world (and thus in that sense objective) rather than to us (and thus fully subjective) seems to be simply mistaken.

But McDowell rejects the idea that it makes sense to think about the world from any such extra-conceptual perspective. The problem is that once such a perspective is entertained in which the world is construed as lying outside the edges of the thinkable, it becomes impossible to see how our thought can be rationally constrained by states of affairs in the world. What is more, the fact that thought is rationally constrained by the world is necessary even for the kind of thinking that finds its expression in the realm of law. Subsuming events under laws is a distinct form of intelligibility to placing them in rational relations; however, it nevertheless presupposes that the relation between thinking and the world is rational, is the sort of thinking characterized by the space of reasons and not the realm of law.

This is why McDowell sometimes says in *Mind and World* that there are no limits to the conceptual sphere. This follows from the claim that experience is the direct presence of the world to us and the claim that only if experience is always already conceptualized can it make rational demands on our thinking.

McDowell: the space of reasons is part of the natural order

We are now in a position to take stock of McDowell's (1994) claims about the space of reasons. McDowell (1998) argues that the space of reasons comprises a way of thinking about aspects of the world, which is fundamentally distinct from the causal way of thinking that has (justifiably) risen to prominence in the West since the Scientific Revolution of the seventeenth century.

> Disenchanting that part of the natural world described by the realm of causal law was an intellectual achievement. But we should not limit what is natural to that which can be fitted into the framework of causation. Thus our own responsiveness to reasons (including moral reasons) is a natural part of our being even though it cannot be described in terms ultimately reducible to causal or other natural laws.
>
> But it is one thing to recognize that the impersonal stance of scientific investigation is a methodological necessity for the achievement of a valuable mode of understanding reality; it is quite another thing to take the dawning grasp of this, in the modern era, for a metaphysical insight into the notion of objectivity as such, so that objective correctness in any mode of thought must be anchored in this kind of access to the real . . . [It] is not the educated common sense it represents itself as being; it is shallow metaphysics. McDowell (1998 p. 182)

Two kinds of intelligibility: two methods of investigation

If McDowell is correct then there are two distinct forms of intelligibility that govern different kinds of natural phenomena. This suggests that disciplines investigating these different kinds of phenomena will have to have different kinds of structures and different kinds of concepts. In other words, the conceptual distinctions between the space of reasons and realm of law will have a methodological correlate.

Broadly speaking, the social sciences—those disciplines concerned with charting meaningful relations between events—will be methodologically distinct from natural sciences—those disciplines concerned with subsuming events under general laws. This corollary of McDowell's argument provides a connection with the *Methodenstreit*, the long-running nineteenth century debate about method in the social (or, more broadly, human) sciences, which, as we saw in Part II, was one of the main influences on Jaspers's foundational work in descriptive psychopathology. That the natural and human sciences have different methodologies, as a corollary of McDowell's arguments, is also precisely the conclusion for which the British philosopher Peter Winch argued in 1958 in his influential book: *The Idea of a Social Science and its Relation to Philosophy*. Because Winch offers a further characterization of the prima facie difference between the natural and human sciences, his work is useful to us here in thinking about a proper understanding of psychiatry as a science combining, to a unique degree, the space of reasons with the realm of law.

Winch's account of the difference between the natural and social sciences

Peter Winch

Winch (1927–98) was one of the first generation of Wittgensteinians who attempted to deploy arguments from the later Wittgenstein's work—mainly *Philosophical Investigations* (1953)—in more applied areas of philosophy. In *The Idea of a Social Science*, Winch (1958) argues that the social sciences—broadly construed—cannot and should not be modelled on the natural sciences because they employ a different form of understanding. In the preface to the 1988 reprinted edition, Winch suggests that he does not mean by this the distinction between explanation and understanding as developed by the nineteenth century German philosopher Max Weber and incorporated into Jaspers's psychopathology (see Part II). Rather he has a deeper point. Only if there is an antecedent or background level of understanding can the sort of deficiency of understanding that an explanation might fill, be intelligible.

This presupposed background understanding is 'expressed in the concepts that constitute the subject matter we are concerned with. These concepts . . . also express certain aspects of the life characteristic of those who apply them.' One of the key aims of Winch's book is to chart just what this background understanding is like.

Reasons and rules: the normativity of the space of reasons

A further preliminary point is important. Winch argues that a central element of understanding meaningful behaviour is an understanding of the nature of rules. For this he draws on Wittgenstein's lengthy discussion of rules, rule following and understanding in the *Philosophical Investigations*. He makes three claims:

1. Rules are central to social science because actions are constituted *as* the actions that they are by the rules that are operating. Thus, to give one of his examples, putting a cross on a piece of paper is an act of voting given the right context of rules. Sound patterns, similarly, are constituted as meaningful assertions (words, etc.) given the rules of spoken language.
2. Explaining an action by citing a rule presupposes a grasp of the rule not just by the social scientist but also (to a first approximation) by the agent whose behaviour is being explained.

3. Rule following is grounded in implicit practical knowledge of what actions count as going on in the same way. Rule following cannot rest entirely on explicit linguistically codified knowledge because that explicit knowledge would require further implicit knowledge of how the written prescription is to be interpreted.

Rules also have a further (generally) implicit but important feature. They are *normative*: they prescribe correct and incorrect moves. In the example mentioned above they prescribe the difference between a successful vote and a spoiled ballet paper. Only certain actions count as casting a vote. So if understanding an event involves relating it to a rule, this form of understanding involves a notion of correctness. It involves understanding what makes it correct or appropriate as a piece of voting behaviour. This is not the same as saying that most votes are cast at a particular time of day or night or by a particular socio-economic proportion of the electorate. That may be discovered by empirical study. But the normative rules that characterize an event as an act of voting are not provided by any such statistical generalizations.

With these claims in place, Winch goes on to argue that social science is fundamentally dissimilar to natural science.

Winch's key argument

Winch's key argument is that because explanation of meaningful action in terms of rules presupposes a grasp of the rules and concepts in question by the people whose actions are being explained or understood, social science deploys fundamentally different kinds of generalizations to natural sciences. They are not universal true generalizations under which events can be subsumed. They are instead open-textured patterns of behaviour, which by virtue of the normative rules acquired by shared use in the social context of development grant actions with meaningful intelligibility.

Winch's cat

One of the examples that Winch gives is characterizing the behaviour of a cat as writhing. As he says, the very same movements might be plotted out in great detail in a physical vocabulary. But the two statements could not be substituted one for another. They belong to different conceptual frameworks.

Now one might think that what is missing from the purely physical description of the movement of the cat is the fact that the cat is a conscious animal. And that may be true. Perhaps the concept of writhing is reserved for conscious beings. But the key point here is more modest: writhing is connected as a matter of its meaning with pain and ascriptions of pain can be used to *explain* or *rationalize* certain forms of (subsequent) behaviour. By contrast the purely physical description does not sustain these rational connections.

Winch's conclusion

Winch concludes that it is thus a mistake to think that the social sciences can or indeed should ever aspire to being causal sciences on the explicit assumption here that causes are to be explained nomologically, i.e. as or in terms of natural laws. He goes on to suggest that the kind of intelligibility they deploy is more akin to philosophical understanding.

Now it is worth thinking about this conclusion. A central argument Winch deploys is that, in social science, it is the understanding possessed by the objects of study (human subjects, people) of their own behaviour that plays a key role and that this is not reflected in say the physics of billiard ball motion. The social scientist has to understand social behaviour by understanding it, at least in part, through the understanding that the agents he or she studies have. But why does that point preclude understanding in terms of laws? Why, for example, could not social science explanations fit Hempel's Deductive-Nomological model of explanation and invoke laws?

The answer, as far as Winch and McDowell are concerned is this. The kind of understanding that makes sense of actions is not *codifiable* as a set of laws. It contrasts with the factors that govern billiard ball motion because those factors are codifiable in a Newtonian physics of forces. Now one of the conclusions of Chapter 14 was that explanation in the physical sciences is not fully codifiable and thus it might seem that there are no differences between understanding and explanation, the space of reasons and the realm of law. But a difference remains. However one selects factors from the causal history of an event to explain it relative to one's context of interests, it is natural to think of that history as governed by the tapestry of relevant natural laws. The interaction of all the physical and other natural scientific properties can be codified in natural laws. By contrast, according to McDowell and Winch, there is no equivalent codification of the factors that constitute the space of reasons. This space is not so well regulated.

Furthermore, the social science form of understanding involves an implicit *normative* notion. It turns on matters not correctness and incorrectness. It is not just that most acts of voting take place in a particular way: rather it is a matter of our shared and largely implicit rules of meaning that only specific marks in specific contexts are to count as voting. To vote is to mark a ballot paper *correctly*.

McDowell Winch and psychiatry

It is worth thinking what the consequences would be for psychiatry if McDowell's and Winch's argument were correct. Psychiatry, as we explored in detail in Part II, involves elements that belong to both sides of Winch's distinction. It aims to discover the causal laws governing the operation of the brain and its responses to both surgical and drug intervention. But it also seeks to *make sense* of people's experiences: to characterize their experiences as meaningful responses to psychological trauma, for example. The first sort of intelligibility corresponds to what McDowell would call the realm of law and the second to the space of reasons. Thus if these two highly influential philosophers are right, it would seem that psychiatry is an essentially divided discipline: a mixture rather than a compound of the two elements.

An opposing view: Bolton's claim that meaning is encoded in neural processes

McDowell's and Winch's conclusion has, however, been resisted. Its key assumption is that there is a characteristic difference between rule-governed reasons and law-like causes. Thus the most direct way to attempt to resist it is to argue that there is no simple distinction between reasons and causes: that reason explanation can be a species of causal explanation. This is just the methodology that underlies work in the philosophy of mind (more specifically the philosophy of thought or content) by authors such as Fodor and Millikan. In our field, a recent example is the book by the philosopher/psychologist and psychiatrist team of Derek Bolton and Jonathan Hill called *Mind Meaning and Mental Disorder* (1996). (A good expression of the overall view is Bolton, 1997.)

Rethinking the dichotomy

Bolton's work, to which we have referred several times, is a sustained attempt to undercut the distinction between the space of reasons and the realm of law. The key idea is that the distinction cannot be reconciled by attempting to explain either side in terms of the other: favouring either side of the distinction and attempting to reconstruct the other in its terms. (Ironically, given their substantial disagreement about reasons and causes, this is a metaphilosophical point about dichotomies also shared by McDowell.) Rather, then, than reducing one to the other, Bolton and Hill (1996) argue, we should recognize that neural states have the specific property of encoding meanings. Neural states are thus at one and the same time in both the realm of law and the space of reasons. Or, to put the same point the other way round, with neural states the dichotomy between the realm of law and the space of reasons breaks down.

Bolton's attempt to reconcile reasons and laws

Bolton's conclusion is that a genuine resolution to the tension implicit in psychiatry requires a rethinking of the philosophical battle lines that he characterizes in the following strong terms:

> The split between science and meaning [which twentieth century psychiatry inherited from the *Methodenstreit* through Jaspers] was bound to lead to assault by the one side against the other for excluding it: sympathy with meaning led to outrage against scientific psychiatry, and adherence to science led to contempt for speculations about meaning. This mutual hatred—if that is not too strong a word—was a sign that the split had become intolerable. (p. 256)

Bolton argues that 'post-modern' accounts of meaning are too restrictive in their dismissiveness of the neurological underpinnings of meaning. And on the other hand, recent views that mature cognitive science would dismiss meanings in favour of causes are similarly restrictive. The latter argue that because causal relations turn on the local physical properties of neural states there is no need to invoke any encoded meanings in those neural states when accounting for their causal powers. The 'syntax will do for the purpose of causal explanation, and putative encoded meaning drops out as irrelevant.' (p. 258)

Bolton's objection to the argument that syntax if sufficient is that explanation can be broader or narrower depending on what it is that is to be explained.

> If you want to explain, for example, how a rat finds its way to the goal box, the answer will involve positing some state of the rat which encodes information about the route to the box. If you want to explain how it moves its leg, then positing a non-intentional process will do: the muscle contracts because of some physico-chemical processes. (p. 259)

Thus given the thesis that neural states can encode meanings and the need for broader explanations, there is positive reason to preserve a meaningful element in causal explanations in cognitive science.

How do brain states encode meaning?

What, however, is much less clear, as one of us has argued elsewhere is how it is that the thesis that neural states encode meanings is supposed to be explanatory (Thornton, 1997). The problem is this. The notion of encoding makes perfect sense in some contexts: intentionally translating a sentence in one language into another semantic structure, for example. However, Bolton makes no attempt to cash the notions of encoding out in the context of neural states. In what sense, precisely, do neural states carry meaning? Bolton seems content with arguing that they must do so in order to underpin meaningful but causal explanation of behaviour. But this is just to assume that the reconciliation he requires can in fact be effected. It is not to say *how* it is to be effected.

One way to see this point is to consider what the force is of Bolton's suggestion that the scope of what is to be explained imposes constraints on the nature of the explanation. Consider, not a rat, but the explanation of the route taken by an adult human across a large city such as London. This may involve ascribing to her many different and interacting beliefs about various features of the city. This explanation will contrast with a physiological explanation of the movement of one of her legs. But it is not obvious that both explanations will be causal. The first involves content-laden mental states, but it is a matter of philosophical dispute, (1) about whether that explanation is causal, and (2) about how, if it is, its causal elements and its meaningful elements combine. It may be that the explanation is both causal and rational. But if so, then the properties that underpin the causal and the rational are distinct or come apart (as appears to be the case in Davidson's account, which will be discussed in Part V).

Bolton suggests that the explanation of the rat's behaviour will be both causal and information-involving. However, it may be that these two features also come apart—as seems intuitively more plausible in the human case—rather than being different aspects of the same explanation. As with other long-running debates in philosophy, then, Bolton and Hill's challenging

concept of encoded meanings has driven our ideas forward (their book includes detailed treatments of various kinds of psychopathology, for example) without, finally, resolving the deep issues with which the debate is concurred.

Reasons and causes in psychiatric research: George Brown's Approach

Does there need to be a philosophically sophisticated reconciliation?

While much work would have to be done to show that the kind of normative, idealized patterns of the space of reasons could be reduced to the nomological structure of the realm of law, that has not stopped work being done in psychiatry deploying both elements. The following extract is from an empirically based study of depression among women. While the details of the findings are interesting in their own right, it is the implicit connection between meanings or reasons and causal laws that is of interest to us in this chapter.

EXERCISE 8 (30 minutes)

Read the extract from chapter 15 of:

Brown, G.W. and Harris, T. (1978). *Social Origins of Depression*. London: Tavistock Publications, (extract pp. 233–238)

Link with Reading 15.7

- How are reasons and causes assimilated in this paper?

Davidson's and Bolton's different reconciliations

As described above, philosophers such as Derek Bolton attempt to undercut the distinction of kind between the two realms of intelligibility that McDowell (following Sellars) labels the 'space of reasons' and the 'realm of law'. Now McDowell suggests that Davidson's Anomalous Monism (to which we will return in detail in Part V) is an attempt to reconcile reasons and causes by showing that, although the two modes of intelligibility are genuinely distinct, they share a common subject matter. (In fact, reasons are a *subset* of nomic events.) But Bolton's project (shared by philosophers such as Jerry Fodor, Ruth Millikan, and others) is more ambitious: to show how the two modes of intelligibility are in fact continuous. Information-rich causal sciences comprise a bridge between the space of reasons and the realm of law (not that Bolton puts it in these terms). We also saw that there were grounds to be sceptical about whether Bolton has been successful in reconciling reasons and causes in this way.

In their work on depression, Brown and Harris (1978) subscribe implicitly to a different and much more modest reconciliation. Their work thus serves as another attempt to answer the question with which this chapter began: can psychiatry form a unified discipline or is it essentially a disjunction of two different research and diagnostic methods?

The above extract sketches out the results of an inquiry into the aetiology of depression and proposes a causal model (of sorts) as a result. The causal model is given as a kind of flow chart on p. 238. Vulnerability factors lead to ongoing low self-esteem and these together with a precipitating or provoking agent produce depression via a sense of hopelessness or by way of unworked-through grief.

Brown and Harris's reconciliation

As already noted, Brown and Harris' is an influential theory of the aetiology of depression. What is important for this chapter, however, is that the elements of the causal model are themselves charged with meaning. Thus the authors talk, for example, of the importance not of external events but of the way women '*respond* to external events and difficulties' (p. 237, emphasis added), of the '*need* for *meaning*' and, more transparently of all, of the 'loss of important sources of *value*' (p. 244, emphasis added). These are the component parts of their causal model but they depend for their characterization on a different kind of context to a context of causal laws. The required context is that in which events make sense or have meaning: the rational space of reasons. Interestingly, also, it is the patient's own assessment of the meaning or significance of an event which is important (p. 234). It is possible that a major blow will not have a later depressive effect if one thinks that one has, at the time, stood up well to adversity.

Thus Brown and Harris (1978) attempt to mobilize elements that have to be recognized by their role in the space of reasons in a causal model, which itself is part of the realm of law. This results in a hybrid conception of psychiatry in that two sorts of assessment stand in an uneasy relation. Crucially, the presence of meaningful elements threatens the kind of universal laws to which a causal science aspires. If Winch and McDowell are correct and the space of reasons that governs meanings cannot be codified into a set of natural laws then some of the basic elements of Brown and Harris's causal model—meanings—will resist incorporation into universal laws: their characterization will turn on the particular context. Think of when rejection by one's lover might lead to helplessness and sense of worthlessness and when it might lead instead to heroic resignation. What laws will govern this if it turns on the context of meaning and significance that the agent places it in?

Brown and Harris' model illustrates a general issue. We have seen that there is a tradition in the philosophy of science for thinking that where there are causes there are also underlying laws. (We have also seen some conflicting views.) Now laws of nature are generally thought of as something like true universal claims. (Again there are interesting opposing views, but such a view is a benchmark of lawhood.) So the challenge of a hybrid view of the *causes* of depression is to reconcile a convincing account of the sociological detail (in which meanings play an important role) with this aspiration to the universal law-based status for such a discipline. The problem is something like

this: the more meanings play a role in the way we understand the origins of a condition, the less immediately obvious is it that a law-based account will be possible of the causes of that condition.

Brown and Harris, it is important to add, are well aware of the difficulties here. Brown has indeed contributed to the wider literature on the difficulties of investigating meanings in the social sciences. And although writing in places in this literature of causal factors, Brown and Harris call their book, not The Social *Causes* of Depression' but 'The Social *Origins* of Depression'. Then again, that their choice of terminology is no coincidence is evident from their description of how they devised their interview protocol: rather than exploring meanings as such, they sought to identify factors that would have a similar meaning for most people most of the time. In other words, Brown and Harris attempted to stabilize meanings, to convert the particularity of individual personal meanings into general causal factors by confining themselves to meanings that, as it were, are (more or less) universal.

As a methodological approach to reconciling reasons (or meanings) with causes, then, this is ingenious and well-grounded theoretically; and Brown and Harris' model, as we have emphasized, has been heuristically powerful (though as with all scientific theories, debate continues about the precise role that some of the factors they identified, notably 'life events', play in depression). As an approach, moreover, it is consistent with those accounts of causation that emphasize (contrary to the traditional model), the context dependence and normativity of causal attributions. Their approach indeed suggests an account of the relationship between reasons and causes in which reasons approximate to causes in inverse proportion to the extent of their context dependence and normativity. In other words, reasons approximate to, or at any rate approximate in *appearance* to, causes where context *in*dependent and, crucially, where the interests they express are much the *same* for anyone.

Read, therefore, for interests, 'values, and the limitations of Brown and Harris' approach, ingenious as it is, will be evident from the considerations of Part I. For a key conclusion of Part I was that mental health differs, overall, from bodily health, in the relative *diversity* of the values by which concepts of mental disorder are (partly) defined.

Once, therefore, we move away from the artificially constrained circumstances of a research project and into the more open fabric of day-to-day clinical practice, for Brown and Harris's model to provide aetiological insights it must be combined with direct understanding of the individual meanings given to events by those concerned. Brown and Harris's results certainly guide us over the kind of factors with which we should be concerned in seeking to understand the origins (aetiology) of someone's depression. But, in the terminology of Part II, the understanding this gives is, indeed, *understanding* of personal meanings rather *explanation* in terms of general causal laws.

Reflection on the session and self-test questions

Write down your own reflections on the materials in this session drawing out any points that are particularly significant for you. Then write brief notes about the following:

1. What is the difference between the 'space of reasons' and 'realm of law'? Can they both describe aspects of the real world? What is the connection between these and what is really real and how does this relate to psychiatry?
2. What distinction between the natural and social sciences does Winch outline?
3. How does Bolton attempt to reconcile reasons and laws?
4. How do Brown and Harris attempt a reconciliation?

Reading guide

Note from philosophy of medicine's literature the edited collection, Lindahl and Nordenfelt (ed.) (1984) 'Health, disease, and causal explanations in medicine.' Vol. 16 in Engelhardt and Spicker *Philosophy and Medicine Book Series*.

Hume's philosophy of causation

- Hume's philosophy is described in a number of introductions, including Pears' (1990) *Hume's System*, and Stroud's (1977) *Hume*.
- Hume's account of causation is discussed in detail in Strawson's (1989) *The Secret Connexion: causation, realism and David Hume*.

More recent philosophy of causation

- The state of the philosophical debate about causation is reflected in a set of essays in Sosa and Tooley's (ed.) (1993) *Causation*.
- Recent criticism of Lewis's counterfactual account of causation include: Menzies (1996) 'Probabilistic causation and the pre-emption problem'; Menzies (1999) 'Intrinsic versus extrinsic conceptions of causation', in Sankey's (ed.) *Causation and Laws of Nature* (pp. 313–329); and Schaffer (2000) 'Trumping preemption'.
- A good example of a probabilistic theory of causation is Mellor's (1991) *Matters of Metaphysics*.
- For a valuable edited collection relevant to health care, see Lindahl and Nordenfelt (1984).

The social sciences

- An introduction to the philosophy of the social sciences is Papineau (1987) *For Science in the Social Sciences*.
- McDowell's distinction between the space of reasons and realm of law is criticized in Rorty (1998) *Truth and Progress* (chapter 7).
- Bolton's work is developed in book length form in Bolton and Hill (2004) *Mind Meaning and Mental Disorder*. He develops his ideas further in *Philosophy, Psychiatry, & Psychology* in Bolton's (1997a) 'Encoding of meaning: deconstructing the meaning/causality distinction', with commentaries by Segal (1997) with a response by Bolton (1997b), and by Wiggins and Schwartz (1997) with a further response by Bolton (1997c).
- The hermeneutic aspect of psychiatry is stressed in Schwartz and Wiggins (2004) 'Phenomenological and hermeneutic models: understanding and interpretation in psychiatry', in Radden (ed.) *The Philosophy of Psychiatry*.

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