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Naturalistic Descriptions of Knowledge

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1. Introduction

Is knowledge naturalistically describable? Can and should epistemology become a naturalistic field? To a non-epistemologist, the answer to these questions might seem to be obvious. For epistemology to become *naturalistic* would be for it to become *empirical*. The central goals of epistemology are to tell us what knowledge is and how to go about acquiring it, and, surely, if we are to have any hope of attaining those goals, then we will have to investigate knowledge empirically. How else might we hope to formulate an adequate description of something as complex as human knowledge? How else might we hope to give useful advice about how to acquire knowledge?

There is, as we will see, certainly something to this line of thought. Among epistemologists, however, these questions have been highly controversial. Depending on their interpretations of the goals of epistemology, epistemologists have endorsed radically different answers to them, with some taking the naturalization of epistemology to be the only hope for the field, even as others have taken it to be impossible even in principle to naturalize epistemology. The debate over the possibility and desirability of naturalizing epistemology has thus been intense. This chapter aims, first, to describe the basic outlines of that debate and, second, to provide a feel for some of the work done under the banner of naturalistic epistemology. The overall aim is to provide the reader with a sense both of what naturalistic epistemologists have hoped to accomplish in principle and of what they have done in practice.

The positions that epistemologists have adopted in the debate over naturalism have depended not only on their interpretations of the goals of epistemology but also on how, exactly, they have understood the idea of naturalism itself.

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Section 2 therefore introduces different forms of naturalism, focusing on the methodological form deriving from Quine. It then describes three (somewhat notional) waves of naturalistic epistemology, each of which goes further in the direction of methodological naturalism than its predecessor does. Sections 3 through 5 look at each of these waves in detail, and Section 6 briefly sums up.

2 What is naturalistic epistemology?

Discussions of naturalistic epistemology inevitably begin with a reference to Quine, but it is worth noting that, from an historical point of view, naturalistic approaches to epistemology are arguably nothing new. Reid (1997), for example, can be seen as a precursor of contemporary naturalistic epistemology (Rysiew 2002), and there are numerous other historical figures that might be cited to make the same point. Nevertheless, it is indisputable that it was only in the latter half of the twentieth century that some epistemologists self-consciously began to describe themselves as naturalists. Quine (1969b) is generally regarded as the founding father of contemporary naturalism and his 'Epistemology Naturalized' as its founding text.

2.1 Quine's impact

The dominant approach to epistemology when Quine wrote was thoroughly a priori, in the sense that it eschewed a posteriori empirical investigation. The guiding thought of this approach was that, because the aims of epistemology are normative rather than descriptive – because epistemology aims to tell us not how we *do* form our beliefs but rather how we *should* form our beliefs – its method is properly a priori rather than empirical. The relevant contrast is with psychology, which, because it aims to tell us how we do form our beliefs, can and must employ empirical methods. The thought is vividly expressed by Reichenbach (1938: 5; qtd by Rysiew 2016):

> Epistemology does not regard the processes of thinking in their actual occurrence; this task is entirely left to psychology. What epistemology intends is to construct thinking processes in a way in which they ought to occur if they are to be ranged in a consistent system; or to construct justifiable sets of operations which can be intercalated between the starting-point and the issue of thought-processes, replacing the real intermediate links. Epistemology thus considers a logical substitute rather than real processes.

The idea here is that whether a subject has knowledge – as opposed to mere belief, or mere true belief – has to do with whether the way in which he does form his beliefs corresponds to the way in which he should form his beliefs. Empirical methods can tell us about how subjects do form their beliefs. But they cannot tell us how subjects ought to form their beliefs. Hence, while empirical methods are appropriate for psychology, they are inappropriate for epistemology. The latter must rely instead on a priori methods – roughly, reflection on how an epistemically ideal subject would go about forming his beliefs.

Against the dominant rejection of psychology as irrelevant to epistemology, Quine (1969b: 75) advocated 'a surrender of the epistemological burden to psychology'. Epistemology, he maintained, ought to become an empirical field, a part of psychology:

> [E]pistemology still goes on, though in a new setting and a clarified status. Epistemology, or something like it, simply falls into place as a chapter of psychology and hence of natural science. It studies a natural phenomenon, viz., a physical human subject. This human subject is accorded a certain experimentally controlled input – certain patterns of irradiation in assorted frequencies, for instance – and in the fullness of time the subject delivers as output a description of the three dimensional world and its history. The relation between the meager input and the torrential output is a relation that we are prompted to study for somewhat the same reasons that always prompted epistemology; namely, in order to see how evidence relates to theory, and in what ways one's theory of nature transcends any available evidence. (82–3)

Interpreting Quine's argument for the surrender of the epistemological burden to psychology is no mean task. This is due in part to the nature of the text itself, which, while inspiring, is in many places somewhat opaque. But it is also due in part to the fact that the intellectual context in which Quine produced the text is decidedly not our own. In particular, 'Epistemology Naturalized' is devoted in large part to critiquing Carnap's (2003) version of the project of rational reconstruction, and adopts a behaviourist vision of psychology which now seems decidedly outdated. Fortunately, many detailed discussions of the text are available – see, for example, Fogelin (2004), Gregory (2008), and, for brief discussions of naturalism in the context of Quine's broader epistemological project, Creath (2011) and Kelly (2014) – and we need not concern ourselves here with the difficult task of interpreting Quine, for his importance to epistemology is attributable less to the details of his argument than to the impact that his basic vision of an empirical epistemology has had on the field.

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That impact has been dramatic. The possibility and the desirability of naturalizing epistemology were debated throughout the 1970s and 1980s – when the first edition of the important edited collection *Naturalizing Epistemology* (Kornblith 1994b) appeared – and into the 1990s. The debate, which was concerned, among other issues, with the ability of naturalistic epistemology to accommodate epistemic normativity, began to subside in the late 1990s and today appears to have more or less run its course. But if the debate has run its course, it is not immediately obvious what its outcome has been. As Creath (2011: 792) puts it, some epistemologists have 'marched proudly under [the banner of naturalistic epistemology], and others bemoaned it'. Thus, on the one hand, the naturalistic program has been explicitly endorsed by many influential epistemologists: for example, Goldman (1986), Kitcher (1992), and Kornblith (2002). On the other hand, it has been explicitly rejected by many others: for example, Bonjour (1994), Feldman (1999), and Stroud (2000). Chisholm, for example, writing in 1989, remained dismissive: 'For the most part, the facts with which [empirical investigations of knowledge] are concerned are not relevant to the traditional philosophical questions. Unfortunately, however, this relevance has been exaggerated by many writers who do not seem to have grasped the traditional problems' (vii). Moreover, even among those who have endorsed empirical methods in principle, many have continued to rely primarily on traditional a priori methods in practice. As Kornblith (2007) observes, for example, the method of the first, epistemological, part of Goldman's influential *Epistemology and Cognition* (1986) consists entirely of a priori conceptual analysis, despite his explicit endorsement of naturalism. We will come back to Goldman's naturalistic justification of conceptual analysis in Section 3. The point, for now, is that, if Quine's argument has been successful, it has been successful only to some extent and in some respects.

2.2 Forms of naturalistic epistemology

The details of Quine's argument may be difficult to interpret, but the gist of its conclusion is not: Quine is explicit about wanting to link epistemology tightly with psychology. Many subsequent proponents of naturalistic epistemology have shared this goal, but, as Goldman (1994) emphasizes, the goal itself is subject to multiple interpretations. 'Naturalistic epistemology' has thus come to refer to a broad family of interconnected views.

The family tree has three branches, which Goldman refers to as meta-epistemic, substantive, and methodological naturalism. *Meta-epistemic* naturalism should

be understood on the model of meta-ethical naturalism. Just as meta-ethical naturalism is a metaphysical thesis about the nature of ethical properties, meta-epistemic naturalism is a metaphysical thesis about the nature of epistemic properties. On this view, epistemic properties are natural properties, in the sense that they reduce to, supervene on, or stand in some other appropriately tight relationship to uncontroversially natural properties.

This is a variety of naturalism so bland that most epistemologists endorse it (though some, e.g., Chisholm [1989], may have rejected it), and meta-epistemic naturalism is quite distant from Quine's methodological concerns. Somewhat closer to the latter, but still distinct from them, is *substantive* naturalism. Substantively naturalistic views 'invoke physico-causal processes of the epistemic agent, or perhaps relations that obtain between the cognitive agent and its environment' (Goldman 1994: 302). Reliabilism, for example, which analyses knowledge in terms of the reliability of belief-producing processes, is substantively naturalistic (Goldman 2012). Theories that analyse knowledge in terms of normative notions such as 'evidence', in contrast, are incompatible with substantive naturalism (Conee and Feldman 2004).

Methodological naturalism, finally, is what Quine had in mind by naturalized epistemology. The core claim of methodological naturalism is that epistemology should be intimately linked to psychology. The precise nature of the appropriate relationship between epistemology and psychology has been one point of contention among methodological naturalists, but Quine himself was explicit on this point as well: in his view, epistemology was to become *part* of psychology.

2.3 Waves of naturalistic epistemology

To what extent has Quine's argument for methodological naturalism had an impact? A survey conducted by Turri (2016) to measure perceptions of traditional areas of philosophy and their relationship to science may shed some light on this question. For each of a number of areas, respondents were asked to rate their agreement, on a scale from 1 to 7, with the following three statements. (1) *This area is currently central to the discipline of philosophy.* (2) *To the extent that this area is currently central to philosophy, it depends on being integrated with the relevant natural, cognitive, or social sciences.* (3) *Current work in this area is sufficiently integrated with the relevant natural, cognitive, or social sciences.* The focus of Turri's own discussion is not on epistemology, but it is instructive to compare his findings on perceptions of epistemology and on perceptions of philosophy of mind, arguably the area of philosophy most closely related

to epistemology. (Respondents tended to view both mind and epistemology as central to philosophy: mean agreement with the relevant statement was 5.89 for mind and 6.18 for epistemology.) Respondents, most of whom were philosophers, tended to view philosophy of mind's centrality as depending more on its integration with science: mean agreement with the relevant statement was 5.6 for mind versus 4.45 for epistemology. And they had a slightly stronger tendency to view philosophy of mind as being sufficiently integrated with science: mean agreement with the relevant statement was 4.78 for mind versus 4.18 for epistemology.

Taking 'integrated with science' as being roughly equivalent to 'naturalistic', these responses suggest two observations. First, arguments for naturalizing epistemology have had considerable influence. Nevertheless, naturalistic approaches to philosophy of mind are more widely accepted than are naturalistic approaches to epistemology. Second, to the extent that philosophers have been convinced by arguments for naturalizing epistemology, many judge that contemporary epistemology is insufficiently naturalistic. While many philosophers likewise judge that contemporary philosophy of mind is insufficiently naturalistic, the tendency here is slightly less pronounced than in the case of epistemology.

Turri's findings are interesting but provide little insight into the extent to which Quine's argument has actually led to an empirical turn in epistemology. A comparison with philosophy of mind is again instructive. Despite the absence of an explicit debate over the naturalization of philosophy of mind comparable to the debate that took place over the naturalization of epistemology, there has been a clear trend towards greater integration with psychology (and the cognitive sciences more broadly) in philosophy of mind. Knobe (2015) studied this trend by comparing two samples of philosophy of mind papers from leading journals, covering the years 1960–99 and 2009–13, respectively. With respect to topical focus, he found a decline of interest in traditional philosophy of mind topics (such as the mind-body problem) and an increase of interest in 'specific aspects of cognition'. With respect to method – the dimension of greatest interest here – he found a decline in purely a priori approaches and an increase in approaches that either rely on empirical research or themselves conduct empirical research. In the 1960–99 sample, a majority of papers (62.4 per cent) were purely a priori, a substantial minority (37.6 per cent) relied on empirical research, and none (0 per cent) reported original empirical research. In the 2009–13 sample, a small minority of papers (11.5 per cent) were purely a priori, a majority (61.8 per cent)

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relied on empirical research, and a substantial minority (26.8 per cent) reported original empirical research.

Knobe's findings suggest that there have been two dramatic shifts in the practice of philosophy of mind. First, philosophers of mind now standardly rely on empirical research. Previously, this was unusual. Second, philosophers of mind now themselves often conduct empirical research. Previously, this was unheard of. Have there been comparable shifts in epistemology? No one has conducted a quantitative study of method in epistemology analogous to Knobe's study of method in philosophy of mind. But an informal qualitative survey of the literature suggests the following observations. First, there *has* been a shift in epistemology comparable to the first shift in philosophy of mind: that is, epistemologists increasingly rely on empirical research. Second, there has *not* been a shift in epistemology comparable to the second shift in philosophy of mind: that is, epistemologists do not yet generally conduct empirical research.

These observations suggest a division of work on naturalistic epistemology into three 'waves'. The *first wave* of naturalistic epistemology was programmatic in character, concerned largely with arguments for naturalization. The *second wave* of naturalistic epistemology has moved, to varying extents, beyond programmatic discussions to attempt to base theories of knowledge on relevant empirical research. And a hypothetical *third wave* of naturalistic epistemology would move beyond reliance on relevant empirical research to itself conducting empirical research. While the reality is of course messier than this simple picture would suggest, the idea of waves will nonetheless provide a convenient means of organizing our discussion.

3. The first wave of naturalistic epistemology: programmatic debates

The first, programmatic, wave of naturalistic epistemology was concerned primarily with determining the feasibility and the implications of the methodological naturalism advocated by Quine. Reactions to his argument were varied. Some epistemologists accused him of attacking a straw man. As noted above, Quine was concerned in large part to respond to the Carnapian project of rational reconstruction, but, by the time he wrote, that project had largely been abandoned in favour of the project, with which we are now more familiar, of attempting to analyse knowledge (Almeder 1990; Kelly 2014) – that

is, to produce a set of necessary and sufficient conditions for knowledge (Shope 2004). Space does not permit an in-depth examination of this debate or of many of the others that were occasioned by Quine's argument (see Rysiew 2016). We will therefore restrict our attention to two debates. First, we will consider the question of the role of *intuition* in epistemology, a question which, under the impact of experimental philosophy, has recently resurfaced in a form that is of direct relevance to naturalism. Second, we will consider the question of *normativity*, which was undoubtedly the key issue in first-wave naturalistic epistemology.

3.1 The intuition debate

While some accused Quine of attacking a straw man, others accused him of incoherence, on the ground that his argument relied on a tacit – and illegitimate – appeal to a priori intuition. As we have seen, Quine's argument was directed in part against the a priori methods of traditional epistemology. Traditional epistemology, as embodied in Carnap's rational reconstruction or, earlier, in Descartes' attempt to provide secure foundations for knowledge, relies on a priori intuition, in the sense that it relies on intuitions – spontaneous judgements – to justify claims about epistemic norms or principles. For example, most discussions of the Gettier (1963) problem (see Section 5 below) proceeded by constructing hypothetical cases, asking for our intuitions about whether the beliefs involved in those cases qualified as knowledge, and then proposing general principles designed to capture those intuitions. In fact, though there are some who deny the centrality of intuition to epistemology and to philosophy more generally (Cappelen 2012), much epistemology still proceeds in essentially this manner. The problem is that the means by which Quine argued against a priori methods in epistemology itself appears to employ precisely this a priori method (Siegel 1984; Bealer 1992; Kaplan 1994). Quine does not appeal to any empirical data. Instead, he offers an argument which presupposes general principles of the very sort that can only be established by appeal to intuition.

Naturalistic epistemologists have employed various strategies when responding to this objection (see Rysiew 2016). One strategy is to attempt to provide an account of the use of intuition which does not treat it as an a priori source of understanding. Kornblith (2002), for example, argues that our intuitions about whether hypothetical cases of belief qualify as instances of knowledge do not reflect a priori understanding. Instead, on his view, they reflect an understanding of the phenomenon of knowledge that has been acquired in

an empirical manner. We will return to Kornblith's account in Section 4, but not everyone, of course, has been convinced by the account (BonJour 2006). Another strategy is to attempt to make room for a priori intuition within a recognizably naturalistic epistemology. Goldman (1988, 1993, 2007), for example, argues that our intuitions about whether hypothetical cases of belief qualify as instances of knowledge reflect the features of our own concept of knowledge. On his view, our concept of knowledge is the source of our intuitions about whether hypothetical beliefs qualify as knowledge, so that consulting our intuitions about such cases in effect amounts to performing a small-scale psychological experiment (Kornblith 2007). This understanding of the role of intuition foreshadows the recent experimental approaches to epistemology to which we will return in Section 5.

3.2 The normativity debate

While the question of intuition is important, much of the early debate around naturalistic epistemology was concerned with the distinct issue of normativity. Epistemology is a normative field: it seeks both to tell us what knowledge is and how we ought to go about acquiring it. This leads to the worry that, because psychology is purely descriptive, turning epistemology into a chapter of psychology is bound to deprive it of its normative character: 'Quine seems to have abandoned normative epistemology in favor of simply describing our present practices. And this will not be at all surprising if we believe that science is a purely descriptive endeavor. If that is so, then a naturalized epistemology must also be purely descriptive' (Gregory 2008: 20). Kim (1988: 389), for example, pointing out that much traditional epistemology is in fact naturalistic in meta-epistemic or substantive terms, argues that Quine's rejection of traditional epistemology on methodological grounds commits him to rejecting epistemic normativity entirely: for Quine, '[e]pistemology is to go out of the business of justification'.

Quine himself, however, argued that methodological naturalists are able to countenance a certain degree of normativity. As he wrote later,

> [n]aturalization of epistemology does not jettison the normative and settle for the indiscriminate description of ongoing procedures. For me normative epistemology is a branch of engineering. It is the technology of truth-seeking, or, in a more cautiously epistemological term, prediction … There is no question here of ultimate value, as in morals; it is a matter of efficacy for an ulterior end, truth or prediction. (1986: 664–5)

Quine's suggestion here is that naturalistic epistemology remains normative in the sense that it can provide us with guidance about how to go about forming our beliefs, where the guidance in question is *hypothetical* in nature. Just as engineering might advise us, for example, to avoid using certain materials when building bridges, naturalistic epistemology might advise us to avoid relying on visual perception in circumstances which are likely to give rise to visual illusions. The normativity in the engineering case is of an unmysterious kind: what engineering tells us is that, *if* we want to build a bridge that will not collapse in the first strong wind, *then* we should avoid using certain building materials. The same thing goes for the normativity in the epistemology case: *if* we want accurate beliefs, *then* we should be aware of circumstances in which vision is likely to be unreliable. What engineering does not tell us is that we must want sturdy rather than fragile bridges. Similarly, epistemology cannot tell us that we must want accurate rather than inaccurate beliefs.

How should we react to this suggestion? A first reaction is to take the fact that naturalism can provide us only with hypothetical normativity to be fatal to the naturalistic project. Hypothetical normativity is considerably weaker than the *categorical* normativity that epistemologists have traditionally sought to provide. Kelly (2003), for example, argues that epistemic norms are categorical, in the sense that they are binding on agents regardless of their aims or goals. There is no apparent way in which naturalistic epistemology can ground such categorical norms – how might they be discovered empirically? – and those who are committed to them seem to be bound to reject methodological naturalism. Another reaction is to attempt to provide a substitute for categorical norms. In particular, one might argue that the norms grounded by naturalism are *hypothetical but universal*. Kornblith (2002), for example, argues that we are bound to value having accurate beliefs, no matter what else we happen to value, since our ability to secure the other things that we value presupposes our having accurate beliefs. Yet another reaction is to argue that we should be content with *hypothetical and non-universal* norms. In contrast to Kornblith, Stich (1993), for example, argues that we are not in fact bound to value having accurate beliefs, with the result that epistemic norms are not universally binding (see Kappel 2011).

Depending on where one stands on the nature of epistemic norms, then, the issue of normativity may or may not prevent one from endorsing naturalism. But it is important to note that even the weaker hypothetical norms that can be provided by naturalistic epistemology may in an important sense be more robust than the norms that traditional epistemology has been able to provide.

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Kornblith has argued that naturalistic epistemology need not give up on the normative concerns of traditional epistemology, in the sense that it can give useful epistemic *guidance*. Indeed, the naturalist is in an important sense better positioned than the traditional epistemologist to give such advice, for he is free to avail himself of the findings of our best psychology: 'If we wish to offer constructive advice for improving our epistemic situation, we need to begin with an accurate assessment of our epistemic strengths and weaknesses' (Kornblith 1994a: 47). It is, in contrast, unclear how an epistemology that lacks the sort of solid empirical basis that naturalists aim to give it might be capable of providing normative guidance worthy of being taken seriously (Grandy 1994). In Section 5 we will return to the issue of epistemic guidance.

4. The second wave of naturalistic epistemology: building on empirical research

It is one thing to *endorse* naturalistic epistemology; it is another thing to *do* it. If the first wave of naturalistic epistemology was largely concerned with programmatic arguments for naturalism, the second wave involved attempts to put methodological naturalism into practice by basing theories of knowledge directly on relevant empirical research. There is no way, in a chapter of this length, to survey everything that might be included under the heading of second-wave naturalistic epistemology. We will therefore look at two representative examples. First, some naturalists have argued that knowledge is a *natural kind* and that the general phenomenon of knowledge can and must therefore be investigated empirically. Second, some have argued that empirical research on *constructive memory* forces us to abandon received views of memory's epistemic role.

4.1 Knowledge as a natural kind

Picking up on another theme from Quine (1969a), Kornblith (2002) has claimed that knowledge is a natural kind. Natural kinds are kinds that 'carve nature at their joints'. Because they reflect the objective structure of the world, natural kinds ground reliable inductive inferences, in the sense that determining the features of one instance of a kind enables us to infer that other instances of the kind have similar features. They thus play a crucial role in the empirical sciences. The case of jade is often used to illustrate the notion of a natural kind. The term 'jade' has been applied to two different minerals – namely,

jadeite and nephrite. While superficially similar, jadeite and nephrite differ in terms of their underlying structure. Inferences from features of jadeite to features of nephrite, and vice versa, will therefore often go wrong. Thus jade, if it includes both jadeite and nephrite, is not a natural kind. In contrast, all instances of jadeite share an underlying structure, as do all instances of nephrite, allowing them to support inductive inferences. Thus, jadeite and nephrite are natural kinds.

Knowledge, Kornblith claims, is, like jadeite and nephrite, a natural kind. His argument for this claim is somewhat involved but appeals crucially to the causal-explanatory role that attributions of knowledge – as opposed to mere true belief – play in empirical disciplines such as cognitive ethology, which studies the role of cognition in animal behaviour. The core idea is that knowledge attributions could not play this role, were knowledge not a natural kind. The claim that knowledge is a natural kind, if true, has a pair of important implications. First, it implies that Quine was right in suggesting that knowledge cannot be investigated by means of a priori intuitions. Consider how absurd it would be to attempt to investigate jadeite or nephrite by means of a priori intuitions. If Kornblith is right, it is similarly absurd to attempt to investigate knowledge by means of such intuitions. Second, it implies that Quine was right in suggesting that knowledge can be investigated by empirical means. Empirical investigation of samples of jadeite or nephrite enables us to understand what all instances of jadeite or nephrite have in common. If Kornblith is right, empirical investigation of samples of knowledge will similarly enable us to understand what all instances of knowledge have in common.

While intriguing, Kornblith's view is subject to a number of challenges. In particular, it is telling that, in two key respects, knowledge does not look much like paradigmatic natural kinds. On the one hand, in the case of paradigmatic natural kinds, such as jadeite and nephrite, 'illuminating necessary and sufficient conditions for kind membership are identified at the level of underlying microstructure' (Horvath 2016: 175): that is, there is typically a low-level explanation available of what all instances of a given kind have in common. Knowledge does not seem to be like this: no one has yet proposed a low-level explanation of what all instances of knowledge have in common, and the fact that belief, a necessary constituent of knowledge on any account, is multiply realizable suggests that no such explanation is available even in principle. Second, Kornblith's own high-level proposal for what all instances of knowledge have in common – namely, that they are cases of reliably produced true belief (Goldman 2012) – is not the result of empirical investigation of samples of knowledge. On

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the contrary, reliabilism is the product of precisely the sort of a priori intuitions that methodological naturalism seeks to dismiss (Horvath 2016).

4.2 Memory as a source of knowledge

A possibility worth considering is that knowledge might be, like jade, not itself a natural kind but rather a merely nominal kind that includes more than one natural kind. If so, epistemologists would do well to focus not on understanding knowledge as such but instead on understanding particular kinds of knowledge. One kind of knowledge that epistemologists, in their attempts to analyse knowledge as such, have tended to neglect is memory knowledge. In psychology, memory has long been a major area of research, and we have a great deal of empirical understanding of its workings. In epistemology, in contrast, detailed treatments of memory have been few and far between, and those treatments that epistemologists have offered have usually been almost entirely empirically uninformed. This is beginning to change, however, and the psychology of memory has the potential to transform traditional views in the epistemology of memory. Let us briefly consider two examples.

First, it has traditionally been assumed that memory is capable of generating but not preserving knowledge. Just as testimony cannot give the hearer knowledge that the speaker did not have, the thought goes, memory cannot give a subject at a later time knowledge that he did not have at an earlier time (e.g. Dummett 1994). This preservationist view has been challenged by Lackey (2005), who argues that, because defeaters for a belief – factors that counteract its justification – can come and go while the belief is preserved in memory, memory can indeed generate knowledge, in the sense that memory can give a subject knowledge that he did not have at an earlier time. Though it is interesting, Lackey's argument is entirely compatible with a traditional preservationist picture of the workings of memory, since it does not require memory to generate new beliefs. The psychology of constructive memory, however, suggests that memory does in fact routinely generate new beliefs. If so, and if memory functions reliably when it does so, then it may indeed generate new knowledge in a way that departs radically from the traditional preservationist picture (Michaelian 2011).

Second, if memory routinely generates new beliefs, there is a worry about whether it does in fact function reliably when it does so. If it does not, then we might have far less memory knowledge than we ordinarily take ourselves to have. The result would be a sort of empirically grounded scepticism about memory knowledge (Shanton 2011), in contrast to the sort of a priori scepticism

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about memory knowledge traditionally discussed by philosophers (Russell 1921). Whereas a priori scepticism about memory knowledge arises because we cannot with certainty rule out propositions such as 'the world, including my apparent memories, came into existence five minutes ago', empirically grounded scepticism arises because it is difficult to imagine how new beliefs generated by memory might be accurate. While this may be difficult to imagine, there is in fact reason for optimism here. Consider, for example, the phenomenon of boundary extension, in which a subject remembers more of a scene than he originally saw (Intraub, Bender, and Mangels 1992). If the principles that determine the ways in which portions of a scene that were beyond the subject's field of view are filled in by memory ensure that those portions of the scene are usually filled in accurately, then memory may indeed function reliably in cases of boundary extension (Michaelian 2016).

5. A third wave of naturalistic epistemology? Conducting empirical research

If the second wave of naturalistic epistemology has built on existing empirical research, a third wave might involve original empirical research. In this section, we will look briefly at two forms that third-wave naturalistic epistemology might take. First, we will consider the possibility that recent work on knowledge in *experimental philosophy* qualifies as third-wave naturalistic epistemology. Second, we will consider the possibility that some work conducted in *experimental psychology* itself qualifies as third-wave naturalistic epistemology.

5.1 Experimental philosophy as experimental epistemology

One might argue that third-wave naturalistic epistemology has already emerged in the form of 'experimental philosophy' – in particular, the part of experimental philosophy that concerns itself with knowledge. Experimental philosophy (Knobe and Nichols 2008, 2014) is a recent methodological innovation that arose from a novel take on the idea (discussed in Section 3 above) that our intuitions reveal the contours of our concepts. If our intuitions reveal our concepts, the thought goes, then the traditional project of conceptual analysis has much going for it. But if philosophers want to map the contours of our concepts in a reliable manner, the thought continues, they should not be content to rely on their own,

possibly idiosyncratic, intuitions. Instead, they should perform experiments designed to elicit the intuitions of a representative range of people. Doing so might confirm existing analyses of certain concepts, but it might also overturn these, suggesting novel analyses. In the case of epistemology, of course, the key concept is knowledge, and experimental philosophers have indeed claimed to have discovered novel features of the concept of knowledge.

There is no need to attempt to survey the full range of work on experimental epistemology here (see Weinberg 2011), but let us consider one representative line of inquiry. An early study claimed to find that judgements about Gettier (1963) cases varied across cultures. Consider the following case:

> Bob has a friend, Jill, who has a driven a Buick for many years. Bob therefore thinks that Jill drives an American car. He is not aware, however, that her Buick has recently been stolen, and he is also not aware that Jill has replaced it with a Pontiac, which is a different kind of American car. Does Bob really know that Jill drives an American car, or does he only believe it? (Weinberg, Nichols, and Stich 2001)

Epistemologists usually have the intuition that Bob does not know that Jill drives an American car. It is difficult to say *why* Bob should not know that Jill drives an American car, since his belief is both true (Jill really does drive an American car) and justified (Bob has good reason to think that Jill drives an American car), and a whole industry within epistemology has been devoted to solving the resulting 'Gettier problem' (Shope 2004).

What Weinberg, Nichols, and Stich (2001) claimed to find when they surveyed American subjects of European and Asian descent was that, while the former tended to share the epistemologists' intuition, the latter did not. This result has been challenged (e.g. Machery et al. forthcoming), but, if it is right, it would threaten to undermine one of the core projects of contemporary epistemology – namely, the attempt to formulate an account of knowledge that captures the incompatibility of knowledge and Gettierization. Even if the result is wrong, moreover, we must – unless we are prepared to deny that cross-cultural or other variations in intuitions are irrelevant even in principle to the analysis of epistemic concepts – concede that, to the extent that epistemology is concerned with the analysis of epistemic concepts, the naturalists were right: epistemology must become an empirical field. A thoroughgoing naturalism (of the sort endorsed by Kornblith, for example), however, which takes the appropriate target of epistemology to be not our concept of knowledge but rather knowledge itself, will nevertheless view experimental epistemology with scepticism. The

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experiments conducted by experimental philosophers may reveal something interesting about our concept of knowledge; but they cannot reveal (because they are not designed to reveal) anything interesting about knowledge itself (Nanay 2015).

5.2 Experimental psychology as experimental epistemology

If the experiments conducted by experimental philosophers are of relatively little interest to naturalistic epistemology, there may nevertheless be experiments in other domains that are of direct epistemological interest. So far, such experiments have not generally been done by epistemologists themselves. But we can look to relevant work done by psychologists to get a general idea of what an experimental epistemology concerned with knowledge itself, as opposed to our concept of knowledge, might look like. Recall the idea, introduced in Section 3, that one task of epistemology is to provide us with epistemic guidance – roughly, to tell us how to go about forming beliefs in an epistemically adequate manner. Epistemologists have traditionally sought to provide highly general advice (along the lines of the *Rules for the Direction of the Mind*, in which Descartes advises us to investigate only those matters that we are competent to know with certainty). But such rules are of questionable utility, and we may do better to seek to formulate domain-specific guidelines. There is a good deal of work in psychology which, in combination with a substantively naturalistic epistemology such as reliabilism, may ground such guidelines.

Thus Bishop and Trout (2005), for example, adopting what they refer to as 'strategic reliabilism' – a form of reliabilism on which good reasoning consists in reasoning that produces significant true beliefs in a robustly reliable manner – appeal to psychological research to recommend certain heuristics as guides for reasoning about a wide variety of matters. Consider, for example, the planning fallacy, which refers to the tendency to underestimate how much time it will take to complete a task, such as packing to move to a new apartment (Bishop and Trout 2008). They argue that the planning fallacy occurs because we rely on an 'internal' approach to estimating the necessary time: roughly, we break the task down into steps, estimate how long each step will take, and then judge that the task as a whole will take the resulting total amount of time. Instead of relying on an internal approach, they suggest, there is research that suggests that we would do better to rely on an 'external' approach (Kahneman and Tversky 1979) in which we determine how long it has taken us to complete similar tasks in the

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past and judge that the task as a whole will take a similar amount of time in the future. Such an approach does not give us certainty, but, if they are right, it is more reliable than the internal approach that we naturally tend to adopt.

6. Conclusion

As we saw in Section 2, there has been a shift in philosophy of mind from a situation in which philosophers did not themselves perform empirical research to one in which they perform such research on a fairly regular basis. A comparable shift has not yet occurred in epistemology. The empirical research to which Bishop and Trout appeal is conducted by psychologists rather than epistemologists, and the third wave of naturalistic epistemology thus remains largely hypothetical. But there is no reason in principle why a genuine third wave of naturalistic epistemology might not emerge in the future. Some have worried that, should such a shift emerge, it would deprive epistemology of its philosophical character. On one version of this worry, epistemology is meant to be normative, while empirical research can only be descriptive. We have already seen that the naturalist has ways of responding to this worry. On another version, the questions with which epistemology is meant to be concerned are, if not purely conceptual, too highly general to be empirically tractable. Here we might suggest applying naturalistic epistemology to itself: rather than trying to determine a priori whether it is possible to develop an empirical epistemology, we ought to determine this empirically – by trying to develop an empirical epistemology and seeing whether we succeed.

References

Almeder, R. (1990), 'On Naturalizing Epistemology', *American Philosophical Quarterly*, 27: 263–79.

Bealer, G. (1992), 'The Incoherence of Empiricism', *Proceedings of the Aristotelian Society*, *Supp. Vol.*, 66: 99–138.

Bishop, M. A. and Trout, J. D. (2005), *Epistemology and the Psychology of Human Judgment*, New York: Oxford University Press.

Bishop, M. A. and Trout, J. D. (2008), 'Strategic Reliabilism: A Naturalistic Approach to Epistemology', *Philosophy Compass*, 3: 1049–65.

BonJour, L. (1994), 'Against Naturalized Epistemology', *Midwest Studies in Philosophy*, 19: 283–300.

BonJour, L. (2006), 'Kornblith on Knowledge and Epistemology', *Philosophical Studies*, 127: 317–35.
Cappelen, H. (2012), *Philosophy without Intuitions*, Oxford: Oxford University Press.
Carnap, R. (2003 [1928]), *The Logical Structure of the World*, La Salle, IL: Open Court.
Chisholm, R. M. (1989), *Theory of Knowledge*, 3rd edn, Englewood Cliffs, NJ: Prentice-Hall.
Conee, E. and Feldman, R. (2004), *Evidentialism: Essays in Epistemology*, Oxford: Clarendon Press.
Creath, R. (2011), 'Willard Van Orman Quine', in S. Bernecker and D. Pritchard (eds), *The Routledge Companion to Epistemology*, New York: Routledge.
Dummett, M. (1994), 'Testimony and Memory', in B. K. Matilal and A. Chakrabarti (eds), *Knowing from Words: Western and Indian Philosophical Analysis of Understanding and Testimony*, Dordrecht: Kluwer.
Feldman, R. (1999), 'Methodological Naturalism in Epistemology', in J. Greco and A. Sosa (eds), *The Blackwell Guide to Epistemology*, Oxford: Blackwell.
Fogelin, R. J. (2004), 'Aspects of Quine's Naturalized Epistemology', in R. F. Gibson (ed.), *The Cambridge Companion to Quine*, Cambridge: Cambridge University Press.
Gettier, E. L. (1963), 'Is Knowledge Justified True Belief?' *Analysis*, 23: 121–3.
Goldman, A. I. (1986), *Epistemology and Cognition*, Cambridge, MA: Harvard University Press.
Goldman, A. I. (1988), 'Psychology and Philosophical Analysis', *Proceedings of the Aristotelian Society*, 89: 195–209.
Goldman, A. I. (1993), 'Epistemic Folkways and Scientific Epistemology', *Philosophical Issues*, 3: 271–85.
Goldman, A. I. (1994), 'Naturalistic Epistemology and Reliabilism', *Midwest Studies in Philosophy*, 19: 301–20.
Goldman, A. I. (2007), 'Philosophical Intuitions: Their Target, Their Source, and Their Epistemic Status', *Grazer Philosophische Studien*, 74: 1–26.
Goldman, A. I. (2012), *Reliabilism and Contemporary Epistemology: Essays*, New York: Oxford University Press.
Grandy, R. E. (1994), 'Epistemology Naturalized and "Epistemology Naturalized"', *Midwest Studies in Philosophy*, 19: 341–9.
Gregory, P. A. (2008), *Quine's Naturalism: Language, Theory, and Knowing the Subject*, London: Bloomsbury.
Horvath, J. (2016), 'Conceptual Analysis and Natural Kinds: The Case of Knowledge', *Synthese*, 193: 167–84.
Intraub, H., Bender, R. S., and Mangels, J. A. (1992), 'Looking at Pictures but Remembering Scenes', *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 18: 180–91.
Kahneman, D. and Tversky, A. (1979), 'Intuitive Prediction: Biases and Corrective Procedures', in D. Kahneman, P. Slovic, and A. Tversky (eds), *Judgement under Uncertainty: Heuristics and Biases*, Cambridge: Cambridge University Press.

9781474258791_pi-288.indd 86 18-Apr-18 1:19:06 PM

Kaplan, M. (1994), 'Epistemology Denatured', *Midwest Studies in Philosophy*, 19: 350–65.
Kappel, K. (2011), 'Naturalistic Epistemology', in S. Bernecker and D. Pritchard (eds), *The Routledge Companion to Epistemology*, New York: Routledge.
Kelly, T. (2003), 'Epistemic Rationality as Instrumental Rationality: A Critique', *Philosophy and Phenomenological Research*, 66: 612–40.
Kelly, T. (2014), 'Quine and Epistemology', in G. Harman and E. Lepore (eds), *A Companion to W.V.O. Quine*, Malden, MA: Wiley Blackwell.
Kim, J. (1988), 'What Is "Naturalized Epistemology?"', *Philosophical Perspectives*, 2: 381–405.
Kitcher, P. (1992), 'The Naturalists Return', *Philosophical Review*, 101: 53–114.
Knobe, J. (2015), 'Philosophers Are Doing Something Different Now: Quantitative Data', *Cognition*, 135: 36–8.
Knobe, J. and Nichols, S. (eds) (2008), *Experimental Philosophy*, *Volume 1*, Oxford: Oxford University Press.
Knobe, J. and Nichols, S. (eds) (2014), *Experimental Philosophy*, *Volume 2*, Oxford: Oxford University Press.
Kornblith, H. (1994a), 'Naturalism: Both Metaphysical and Epistemological', *Midwest Studies in Philosophy*, 19: 39–52.
Kornblith, H. (ed.) (1994b), *Naturalizing Epistemology*, Cambridge: The MIT Press.
Kornblith, H. (2002), *Knowledge and Its Place in Nature*, Oxford: Clarendon Press.
Kornblith, H. (2007), 'The Naturalistic Project in Epistemology: Where Do We Go from Here?', in C. M. Mi and R. Chen (eds), *Naturalized Epistemology and Philosophy of Science*, Amsterdam: Rodopi.
Lackey, J. (2005), 'Memory as a Generative Epistemic Source', *Philosophy and Phenomenological Research*, 70: 636–58.
Machery, E., Stich, S., Rose, D., Chatterjee, A., Karasawa, K., Struchiner, N., Sirker, S., Usui, N., and Hashimoto, T. (forthcoming), 'Gettier across Cultures', *Noûs*.
Michaelian, K. (2011), 'Generative Memory', *Philosophical Psychology*, 24: 323–42.
Michaelian, K. (2016), *Mental Time Travel: Episodic Memory and Our Knowledge of the Personal Past*, Cambridge: The MIT Press.
Nanay, B. (2015), 'Experimental Philosophy and Naturalism', in E. Fischer and J. Collins (eds), *Experimental Philosophy, Rationalism and Naturalism: Rethinking Philosophical Method*, London: Routledge.
Quine, W. V. O. (1969a), 'Natural Kinds', in N. Rescher (ed.), *Essays in Honor of Carl G. Hempel: A Tribute on the Occasion of his Sixty-Fifth Birthday*, Dordrecht: Springer.
Quine, W. V. O. (1969b), *Ontological Relativity and Other Essays*, New York: Columbia University Press.
Quine, W. V. O. (1986), 'Reply to Morton White', in L. E. Hahn and P. A. Schilpp (eds), *The Philosophy of W.V. Quine*, La Salle, IL: Open Court.
Reichenbach, H. (1938), *Experience and Prediction*, Chicago: University of Chicago Press.

9781474258791_pi-288.indd 87 18-Apr-18 1:19:06 PM

Reid, T. (1997 [1764]), *An Inquiry into the Human Mind on the Principles of Common Sense*, Edinburgh: Edinburgh University Press.

Russell, B. (1921), *The Analysis of Mind*, London: George Allen & Unwin.

Rysiew, P. (2002), 'Reid and Epistemic Naturalism', *The Philosophical Quarterly*, 52: 437–56.

Rysiew, P. (2016), 'Naturalism in Epistemology', in E. N. Zalta (ed.), *Stanford Encyclopedia of Philosophy*, Summer 2016 edition: http://plato.stanford.edu/archives/sum2016/entries/epistemology-naturalized.

Shanton, K. (2011), 'Memory, Knowledge and Epistemic Competence', *Review of Philosophy and Psychology*, 2: 89–104.

Shope, R. K. (2004), 'The Analysis of Knowing', in I. Niiniluoto, M. Sintonen, and J. Woleński (eds), *Handbook of Epistemology*, Dordrecht: Springer.

Siegel, H. (1984), 'Empirical Psychology, Naturalized Epistemology, and First Philosophy', *Philosophy of Science*, 51: 667–76.

Stich, S. P. (1993), 'Naturalizing Epistemology: Quine, Simon, and the Prospects for Pragmatism', in C. Hookway and D. Peterson (eds), *Philosophy and Cognitive Science*, Cambridge: Cambridge University Press.

Stroud, B. (2000), *Understanding Human Knowledge: Philosophical Essays*, Oxford: Oxford University Press.

Turri, J. (2016), 'Perceptions of Philosophical Inquiry: A Survey', *Review of Philosophy and Psychology*, 7: 805–16.

Weinberg, J. M (2011), 'Experimental Epistemology', in S. Bernecker and D. Pritchard (eds), *The Routledge Companion to Epistemology*, New York: Routledge.

Weinberg, J. M., Nichols, S., and Stich, S. (2001), 'Normativity and Epistemic Intuitions', *Philosophical Topics*, 29: 429–60.

9781474258791_pi-288.indd 88 18-Apr-18 1:19:06 PM