Quine. W. V.: Word and Object (Cambridge. MA: MIT Press, 1960).

Quine, W. V.: *Philosophy of Logic* (Englewood Cliffs, NJ: Prentice-Hall. 1970).

Resnik, M. D.: "Mathematics as a Science of Patterns: Epistemology." *Nous* 16 (1982). 95-105.

Steiner, M.: Mathematical Knowledge (Ithaca, NY: Cornell University Press. 1975).

Steiner, M.: "The Application of Mathematics to Natural Science." *Journal of Philosophy* 86 (1989). 449–80.

Wittgenstein. L.: Remarks on the Foundations of Mathematics (Oxford: Blackwell, 1956).

Wittgenstein, L.: Wittgenstein's Lectures on the Foundation of Mathematics, ed. C. Diamond (Ithaca. NY: Cornell University Press. 1976).

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memory The epistemology of memory and the metaphysics of memory are tightly related. The latter offers an account of the nature of memory while the former examines the conditions under which memory is conducive to justified belief and knowledge. Both the metaphysics and the epistemology of memory are distinct from (although certainly not entirely unrelated to) the psychology of memory. Research in the psychology of memory is aimed at exploring the way memory actually functions, the way memory is realized in neurophysiological states, the circumstances and conditions in which memory is reliable or unreliable, etc. While all of this is of obvious importance and arguable relevance to the philosophical enterprises mentioned above, it is nevertheless distinct. The metaphysics of memory, concerned with giving a characterization of memory at a more general and abstract level, aims at identifying the nature of memory regardless of its particular physical implementation. The epistemology of memory, on the other hand, will benefit from information about the circumstances under which memory is reliable (or not), but such information alone will not answer key normative questions like under what conditions is a memory belief justified and when, if ever, can it count as knowledge.

What, then, is memory? The most obvious answer is that memory is a psychological

process that stores information so that it can be used at a later time. As a very general definition, this will do. but epistemologists are interested in the evaluation of beliefs, and so what we need for present purposes is an account of what it is for a belief to be appropriately categorized as a memory belief. Let us approach this question by clearing up several important points.

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First, "S's belief that p is a memory belief" does not entail "S remembers that p". Memory beliefs need not be true: one can seem to remember p while p is false. But if what one seems to remember is not true one isn't genuinely remembering. Second, "S remembers that p" entails the truth of p. One can't genuinely remember what is in fact false. Third, "S remembers that p" does not entail "S knows that p". Suppose that a person A is told by source B (a source A has very good reason to trust as both reliable and knowledgeable) that all A's apparent memories before the age of seven are not veridical, and that they were produced by brain surgery A had when he was seven. Unbeknownst to the protagonist, the informant is lying: A has never had brain surgery, and his memories from even a young age are generally accurate. A now seems to recall blowing out the candles on his birthday cake at the age of six, and indeed his current recollection traces back to this event; in short, he is genuinely remembering blowing out the candles. However, given what B has said, together with the fact that A has strong reason to think B is both reliable and knowledgeable in this regard, A's justification for thinking that he blew out the candles at the age of six is defeated. Consequently, A remembers blowing out the candles but he doesn't know that he did (see Goldman, 1979).

In typical cases, a memory belief is often accompanied by an image of the event remembered. Some philosophers (e.g. Aristotle, Hume, and Russell) have suggested that the presence of a memory image is a necessary condition of remembering. For example, if asked where you were when you learned of the events of 11 September 2001, you'll likely recall an image of a friend relaying the

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information to you or the radio, TV, or computer screen that carried the first pictures you saw of the burning towers. However, the claim that memory requires an image is clearly mistaken. Consider a case in which you are asked the name of your mother while you are intently watching a baseball game. You quickly recall that her name is "Mary" although you don't call to mind an image either of her or even of the word "Mary". Or suppose you are asked who was president during the United States civil war. You might quickly respond "Abraham Lincoln" without calling to mind any image at all. Perhaps both of these cases would typically involve images if the subject were to give the matter her complete attention, but it can scarcely be doubted that we frequently recall all kinds of information on the fly without accompanying images.

The two cases described above involve what philosophers call "occurrent memory". Occurrent memory beliefs are beliefs of which the subject is conscious; they are distinguished from dispositional or stored beliefs. The claim that all memory involves imaging does not assert that all dispositional memory beliefs must have occurrent images, but merely that all occurrent memory beliefs must be accompanied by images.

What, then, is essential for memory belief? Consider a common case in which one recalls an event E, involving a typical memory image, and forms a corresponding memory belief. In virtue of what is this belief a memory belief?

There are two rather different types of answers, one causal-external and the other experiential-internal. According to a causal-external account, a belief will be a memory belief if and only if it has the right kind of causal history – for example, iff it bears the appropriate causal relations to a belief or experience the subject had at an earlier time (see Martin and Deutscher, 1966, for an argument that a causal requirement is crucial for remembering). The motivation for this kind of account is primarily a desire to distinguish between belief kinds by the psychological processes that produce them. Arguably, an occurrent belief that is not causally related in the appropriate

way to past beliefs/experiences can't be thought to have been produced by memory. The causal view can allow that not all memory is veridical both because the original belief might have been false or because the causal path, while strong enough to be sufficient for memory, might be degraded to the point where the content of the original belief or experience is altered.

In contrast with the causal-external account of memory belief is the experientialinternal view. According to the latter, it is necessary and sufficient for a doxastic state to be a memory belief that it seems to the subject (or better "would seem on reflection") to be something she remembers. Presumably, the great majority of beliefs that subjects would take to be memory beliefs will have the kind of causal connection required by the causal-external position. Where the accounts differ is in cases in which the subject seems to remember that p but in which there is in fact no appropriate causal connection with a past belief or experience. For example, I might seem to remember that the cake at your sixth birthday party was chocolate because I seem to remember being at your party and seeing it, when in fact I wasn't there at all and the impression that the cake was chocolate has been produced by my imagination. In such a situation, the causal-external account will not deem this an instance of memory belief whereas the experiential-internal account will. Not surprisingly, the account that one accepts here will likely be colored by one's general epistemic sympathies. The internalist will be tempted to think that, since justificatory questions are primarily perspectival, the epistemic standards for the belief in question will be identical with what the standards would be for a belief with the right causal pedigree, and hence it should be counted as a memory belief. The externalist will likely think that the perspective of the subject is not definitive and that, if the causal connection to a previous belief or experience is not there, then it shouldn't be counted as a memory belief, however the subject would likely categorize it. There is, I believe, no theory-neutral way to solve this dispute.

Perhaps the most significant epistemic issue concerning memory is its reliability. It is plausible to suppose that if memory is generally reliable, then the beliefs to which it gives rise can count as justified or even knowledge; whereas if memory isn't generally reliable, then memory beliefs fail to count as knowledge and likely will not even be justified. So what are the prospects for showing its general reliability? While some have maintained that, necessarily, memory is reliable (e.g. Malcolm, 1963), their claim can be shown to be false. However, it must be said in their defense that the standard demon world cases that apparently demonstrate the possible, global unreliability of perception won't work so clearly in the case of memory. For in a standard demon world it is sufficient for the falsity of memory beliefs that the input to the perceptual systems (and any other input processes) be false or misleading (mental images don't have truth values and so can't be false but they can be misleading). For, even at its best, memory is primarily a preservation rather than a generative process: if what is put in is false. what comes out is false. too, but not because memory itself is unreliable but because the inputs are unreliable. So the fact that in the demon world the deliverances of memory are false doesn't show that the fault is with memory.

Be this as it may, even if the process of memory is at best conditionally reliable. memory beliefs as they are characterized by the experiential-internalist will nevertheless be generally unreliable in a demon world. For everything that the subject seems to remember will turn out to be false, and so memory beliefs will be unreliable given the experientialinternal account of memory belief. And if the demon is clever he can also make the process of memory conditionally unreliable and so unreliable even on the causal-external account. Suppose the demon imparts in the minds of his victims a process that systematically alters the content of the stored memory whenever it is recalled. If, in most instances, the original, occurrent belief and the stored belief are the same in content, and if the stored belief is causally active in (more or less) the right way when the belief is recalled, then the causal-external account of memory

belief will count this as memory belief. And such belief will not be even conditionally reliable. So on both the experiential-internal and the causal-external accounts of memory belief there are worlds in which memory belief is thoroughly unreliable and so the claim that memory is necessarily reliable is false.

Still there are reasons for being skeptical about the prospects for showing memory to be generally reliable. First, Russell (1921) presented an argument for skepticism about that past that has a direct application to memory: Consider the hypothesis that the universe and what it contains was created five minutes ago. Any non-circular demonstration of the overall reliability of memory would have to either be or contain the resources for a successful refutation of Russell's hypothesis. Yet it is generally conceded that there is no such extant refutation.

Even putting aside skeptical hypotheses, there is another reason to think that the reliability of memory can't be demonstrated. Such a demonstration would be in the form of a sound argument that includes no epistemic circularity (i.e. none of the premises is epistemically dependent on memory). Consider even a simple. syllogistic argument. If memory is to play no part in the production of this demonstration of memory's reliability, then the entire argument must be held consciously at once. More than that, however, a demonstration is only as good as the premises it contains. So one will have to be able to show that the premises are true (or at least well justified), too. But, to do that, one will have to push the main argument out of consciousness to make room for the demonstration of the truth of the premises. Even if one can in fact demonstrate the truth of the premises and keep these proofs in consciousness, when one goes back to thinking about the argument the demonstration of the truth of the premises will fade from consciousness. So the subject will have to rely on memory in order justifiably to use the premises in her argument. But this means that the demonstration of the reliability of memory depends crucially on memory being reliable. Hence, any demonstration of the reliability of

memory will in fact depend on the reliability of memory and hence be epistemically circular.

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Naturally, having no good proof of reliability should not be taken as an indication of unreliability. Furthermore, internalists about justification believe that (even conditional) reliability is not necessary for justification. So the unreliability of memory would not sway the internalists into thinking that memory beliefs were unjustified (although it would, presumably, indicate that memory beliefs could not be counted as knowledge). What do internalists take to be crucial for the justification of memory beliefs? There are two main sorts of theories: those that take memory beliefs to be immediately justified and those who think their justification requires evidence. The first position holds this principle: If S seems to remember that p, then S is prima facie justified in believing that p (cf. Audi, 1995). Although there have been positions that make a memory image necessary, the aforementioned principle shouldn't be so read. It is sufficient for being prima facie justified that the subject seem to remember the belief. The other kind of internalism requires more: S's memory belief that p is prima facie justified only if S has some evidence that supposes p (cf. BonJour, 2002, Feldman and Conee, 1985). It is not thought to be necessary that S have direct evidence that p is true; it will suffice if S has evidence that memory is reliable in conditions like those relevant to the case at hand, and that p is a memory belief. To be plausible, such theories will not require that this argument be consciously entertained by the subject; it will be enough that the evidence is in her cognitive system (and perhaps that it could be accessed should the agent wonder about the justificatory status of her belief). A problem with each of these internalistic theories is that a belief can be unjustified when originally formed and then become justified simply on the basis of being retained. Suppose I know you to be an incurable liar and yet believe you when you tell me that p. At a later time. I recall that p but don't remember when or how I originally formed the belief. Both of the above varieties of internalism

will give the result that the belief is prima facie justified.

Against these internalist accounts are externalists who typically claim that, other things being equal, the justificatory status of a memory belief is largely a function of the epistemic status the belief had when originally formed (cf. Senor, 1994; Goldman 1999; for an argument against this view and responses, see Lackey, 2005; Senor, 2007; and Lackey 2007). The epistemic principle that captures this perspective is "Other things being equal, the epistemic status of a memory belief cannot be greater than the status the belief had when it was first formed" (this view has come to be called "preservationism"). On the preservationist theory, memory's job is to preserve belief and epistemic status; when it functions reliably, it does this; when it doesn't, it doesn't. In short, the preservationist view takes epistemic status to have a diachronic component, while those who deny preservationism (whether they require the memory belief to come with an image, to be evidentially supported by other beliefs at the time of recall, or to be prima facie justified) take epistemic status to be synchronic. That is, on the latter view what is relevant for the justification of a belief is the current psychological state of the subject.

See also causal theories in epistemology; commonsensism and critical cognitivism; criteria and knowledge; historical knowledge; problem of the criterion; testimony.

BIBLIOGRAPHY

Aristotle: De Memoria 450a 13.

Audi, R: "Memorial Justification," *Philosophical Topics* 23 (1995), 31–45.

BonJour, L.: Epistemology (Lanham, MD: Rowman and Littlefield, 2002), ch. 8.

Feldman, R. and Conee E.: "Evidentialism," *Philosophical Studies* 48 (1985), 15–34.

Goldman, A. I.: "What Is Justified Belief?," in Justification and Knowledge, ed. George Pappas (Dordrecht: Reidel, 1979), 1–23.

Goldman, A. I.: "Internalism Exposed," Journal of Philosophy 96: 6 (1999), 271-93.

Hume, D.: A Treatise of Human Nature, 1.1.3.

 Lackey. J: "Memory as a Generative Process." Philosophy and Phenomenological Research 70: 3 (2005). 236-58.

Lackey, J: "Why Memory Really Is a Generative Source: A Reply to Senor." Philosophy and Phenomenological Research 74 (2007). 209-19.

Malcolm. N.: "Memory and the Past." in Knowledge and Certainty. ed. N. Malcolm (Englewood Cliffs. NJ: Prentice Hall, 1963).

Martin, C. B. and Deutscher. M.: "Remembering." *Philosophical Review* 75 (1966). 161–96.

Russell, B.: The Analysis of Mind (London: Macmillan, 1921).

Senor. T: "Internalistic Foundationalism and the Justification of Memory Belief." Synthese (1994). 453-76.

Senor. T: "Preserving Preservationism: A Reply to Lackey." *Philosophy and Phenomenological Research* 74: 1 (2007). 199–208.

TOM SENOR

Merleau-Ponty, Maurice (1908–61) Merleau-Ponty. French philosopher of the period immediately following World War II, is best-known in epistemology for his analyses of perceptual experience and of the interplay between perception and action. between perception of self and the perception of others. and between perceptual life. taken as a whole. and its various expressions and transformations in language. reflective thought. art, science. and philosophy.

Merleau-Ponty's theory of knowledge begins with a rejection of "the problem of knowledge" in what he takes to be the Cartesian sense. We do not have to respond to radical scepticism; we do not have to seek conclusive reasons to justify an inference beyond perception to knowledge of an "external" world. To think that we do is to demand an inappropriate sort of certainty in perception and to assume an unwarranted dichotomy between perception and world. Merleau-Ponty contends that perception is, in its own way, intrinsically cognitive. "We must not, therefore, wonder whether we really perceive a world, we must instead say: the world is what we perceive" (1962, p. xvi). Not, of course, if "perceive" is understood as the reception of sensory data or some form of explicit judgement based on sense-data; instead, we must

understand perception to be the way in which humans are already. in Heidegger's phrase. "in the world". Perception is precisely our "access" to the world. The task for a theory of knowledge. as Merleau-Ponty sees it, is to explicate the meaning and implications of taking perception in this sense.

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In his major work. The Phenomenology of Perception. Merleau-Ponty's strategy is to try to refute empiricist and idealist (what he calls 'intellectualist') views of perception (see EMPIRICISM: IDEALISM) by evoking essential features of perceptual experience through the use of exemplary cases from ordinary life, from experimental psychology (centrally from the Gestaltists) and from studies of aphasia and agnosia in brain-injured patients. In this way, he falls broadly within the phenomenological tradition (see Continental epistemo-LOGY: HUSSERL). but gives it a distinctive methodological direction (See his "Phenomenology and the Sciences of Man" in Edie, 1964). Substantively, his rejection of psychophysical dualism and his insistence equally on a sort of "realism" and on the centrality of the active. bodily and historical subject in all perceptual (and other cognitive) life, give his thought an existential character and a great affinity to pragmatism (see PRAGMA-TISM: JAMES). His epistemology forms part of a total philosophical anthropology and ontology, a philosophy of society and of history.

Among Merleau-Ponty's distinctive theses are the following: (1) Perception is a developed skill, a "knowing how", not a matter of forming explicit beliefs, in which we, as impersonal, species-specific, living organisms explore, through our sense-organs, an already significant environment; (2) Perceived things are disclosed as unities through perspectival variations - this is their "lived" and always contingent objectivity; (3) Spatial features of things, including depth and distance, are perceived directly (that is, non-inferentially) in reciprocity with bodily motility, and we see the possibilities which things afford for movement and manipulation; (4) Perceived things are "intersensory unities" too - that is, we see their tactile, auditory and other properties; (5) Our awareness of ourselves as individual selves develops after, and upon the basis of a