

TESTIMONY, MEMORY AND THE LIMITS OF THE A PRIORI

1. Introduction

A number of philosophers, from Thomas Reid¹ through C. A. J. Coady², have argued that one is justified in relying on the testimony of others, and furthermore, that this should be taken as a basic epistemic presumption. If such a general presumption were not ultimately dependent on evidence for the reliability of other people, the ground for this presumption would be a priori. Such a presumption would then have a status like that which Roderick Chisholm claims for the epistemic principle that we are justified in believing what our senses tell us.³

In a recent article⁴, Tyler Burge extends the a priorist view of testimony in a dramatic new direction. On Burge's view, not only is there an a priori justification for something like Reid's "principle of credulity;" in addition, the particular beliefs formed on the basis of testimony are, in many cases, themselves a priori warranted. This, of course, would mark a deep distinction between testimonial beliefs and perceptual ones. Even those who accept Chisholm-style a priori defenses of the principle justifying perceptual beliefs do not hold that the particular beliefs so justified are justified a priori. If Burge is correct, the potential scope of a priori warrant would seem to be virtually unlimited, for almost any proposition could be believed on authority.

Burge argues in part that the role perception plays in producing testimonially-based beliefs is analogous in important ways to its traditionally accepted role in producing mathematical beliefs: it is causally necessary, but its role is not justificatory. At the same time, Burge argues that there are important disanalogies between the role of perception in testimonial beliefs and its role in typical perceptual beliefs. We examine these analogies and disanalogies in section 2 below in an attempt to make plain the role which perception plays in testimonial beliefs.

Burge also presses a surprising and provocative analogy between the role of perception in testimonial belief and the role of memory in mathematical belief. Although mathematical

justification, for example, in the case of long proofs, requires reliance on memory, and the reliability of memory is an empirical question, this does not seem to impugn the a priori status of mathematical justification. Burge seeks to show that the reliance on perception in testimonial justification is of a piece with the reliance on memory in mathematical justification: it too does not impugn the a priori status of the warrant for the resulting belief. We examine this analogy in detail in section 3 below.

Burge's discussion of testimonial belief is part of a larger picture: an elaboration and defense of a rationalist account of justification and knowledge. He would give an a priori grounding to the general principle that we are justified in relying on "rational sources, or resources for reason," which include memory, perception, and other people's testimony. We cannot address all of the issues raised by Burge's defense of the a priori status of this principle, or the general project of grounding basic epistemic principles by an a priori argument.

What we hope to show is that perception does, after all, play a justificatory, and not merely a causal, role in the production of testimonial beliefs. Thus the attempt to extend the scope of a priori justification to cover testimonial beliefs does not succeed. Moreover, in drawing out the lessons of Burge's provocative analogy between testimony and memory, we find new reason for suspicion about even the traditional paradigms of a priori justification.

2. Testimony and Perception

Let us begin by examining Burge's conception of a priori justification. For Burge,

A justification or entitlement is a priori if its justificational force is in no way constituted or enhanced by reliance on the specifics of some range of sense experiences or perceptual beliefs. (458)

One notable feature of this conception is that a priori justification may be quite fallible. Of course, this removes one of the philosophically interesting features that has traditionally motivated philosophical interest in the a priori. But immunity from error is not the only philosophically interesting feature a priori justification has been thought to possess. Burge notes that he is interested

in "justifications or entitlements whose force is grounded in intellection, reason, or reflection, as distinguished from perception, understood broadly to include feeling" (461, fn). And surely this sort of notion has epistemological interest quite apart from questions of fallibility.⁵

Now as defined above, it is not entirely clear what the a priori encompasses. Burge uses comparisons among several sources of belief which in some way depend on perception to illustrate and motivate an interpretation of his definition that will support the claim that testimonial beliefs are often a priori justified. Let us first examine his discussion of the role perception plays in geometrical reasoning informed by diagrams. Burge writes:

The epistemic status of perception in normal communication is like the status it was traditionally thought to have when a diagram is presented that triggers realization of the meaning and truth of a claim of pure geometry or logic. Perception of physical properties triggers realization of something abstract, an intentional content, expressed by the sentence, and (often) already mastered by the recipient. Its role is to call up and facilitate mobilization of conceptual resources that are already in place. It is probably necessary that one perceive symbolic expressions to accept logical axioms--just as it is necessary to perceive words in interlocution. But perception of expressions is not part of the justificational force for accepting the contents. In both cases, no reference to a possible meta-inference from expressions to contents is needed in an account of justificational force. The primary entitlement in interlocution derives from prima facie understanding of the messages, and from a presumption about the rational nature of their source--not from the role of perception, however necessary, in the process. (480)

Should this analogy be convincing? When one looks at a diagram as an aid to proving the Pythagorean theorem, on the traditional view, the diagram itself serves only a heuristic purpose; it allows one to entertain or understand propositions which one might not otherwise be able to entertain or understand. Once one has these propositions in mind, the fact that there once was a diagram on

paper plays no role whatsoever in one's justification for believing that the Pythagorean theorem is true. Thus, for example, if the ideas necessary for proving the Pythagorean theorem had merely popped into one's head unbidden, one would be no less justified.

But surely things are different when one comes to believe a proposition on the basis of testimony. When Mary tells Ben that there is a stop sign on the corner, her telling him this causes Ben to entertain a proposition he would not otherwise have entertained. But it does not, as in the mathematical case, help Ben understand the meaning of the claim that there is a stop sign on the corner. The meaning of such a claim was perfectly clear all along.

More importantly, even if hearing Mary's testimony did trigger in Ben the realization of the content of the claim that there was a stop sign on the corner, Ben's justification for believing this claim would depend on more than simply understanding the relevant proposition. The justification clearly relies, in at least one natural sense, on Mary's act of assertion. Entertaining (and even clearly and distinctly understanding) the proposition that there is a stop sign on the corner does not, by itself, give anyone grounds for believing that it is true. Had this proposition popped into Ben's head unbidden, or had he carefully considered it in wondering whether it was true, he would not be in any position to believe it justifiably. In this respect, it is fundamentally different from the Pythagorean theorem. Once that proposition is clearly in mind, at least on the traditional view, one has all the ingredients needed for justified belief.

The disanalogy here may perhaps be sharpened by thinking about what happens to justification when agents are given evidence that the perceptual experiences causally responsible for their beliefs were hallucinatory.⁶ In the Pythagorean theorem case, the possibility that the diagram was in one's mind only, that there really had been no paper in front of one, would not undermine one's justification. By contrast, if Ben is given evidence that he merely hallucinated Mary's telling him about the stop sign, his justification is clearly undermined. The difference seems to be that in the former case, the perception serves a triggering role, whereas in the latter, Ben's belief is based on perception in a justificatory way.

The key disanalogy, then, is this: in the case of testimony, justification requires not only that one entertain or understand the content of the proposition which was asserted; that it was asserted is part of one's justification for believing it. Burge does acknowledge this disanalogy in a footnote:

... in the logic case justificational force derives from the content itself, whereas in interlocution justificational force derives from one's right to putative understanding and from the presumed status of the source of the message, not (typically) from the content itself. ... The important analogy between the logic and interlocution cases is that perception of words makes understanding possible, but justificational force can be derived from the individual's understanding without supplementary appeal to perception. (480)

For Burge, understanding the interlocutor's claim that there is a stop sign on the corner includes not only comprehending the proposition itself, but understanding it with assertive force, or understanding it to be "presented as true."

But it seems to us that this notion of understanding undermines the force of the analogy to mathematical proof. Given that the warrant provided by testimony does not flow merely from comprehending the relevant content, we cannot so easily dismiss the role of perception as causally necessary but justificationally irrelevant. At first blush, it would certainly seem that in interlocution, it is precisely perception that warrants us in taking a certain proposition to have been presented as true. Indeed, it is not obvious how perception's role in taking a proposition to be presented as true differs from perception's role in warranting typical empirical beliefs.⁷

The second comparison we would like to examine here speaks directly to this issue: it is between testimonial beliefs and standard perceptual ones. Here, of course, Burge wishes to press a disanalogy. For although he, like Chisholm, holds that there is a general a priori principle giving prima facie warrant to perceptual beliefs, he takes individual beliefs warranted by this principle to be warranted a posteriori. Presumably, perceptual beliefs furnish us with paradigm cases of empirical justification. Burge acknowledges, of course, that both sorts of belief are dependent on

perception in the genetic or causal sense, since testimony is received through sensory channels. Nevertheless, he claims, there is a crucial difference in the role played by sensation in the two cases. In the case of perceptual beliefs, but not of testimonial beliefs, Burge claims that our having the relevant perception contributes to the justificational force of our belief.

... perceptual beliefs about physical objects or properties are constitutively dependent on bearing lawlike causal relations to objects of perception--to their subject matter, physical objects. The contents of the beliefs and perceptions are what they are partly because of these relations Our entitlement to rely on perception and perceptual beliefs is partly grounded in this causally patterned, content-giving relation

[In interlocution, w]e do not perceive the contents of attitudes that are conveyed to us; we understand them. ... The subject matter, word occurrences, of our perceptual experiences and beliefs bears a nonconstitutive (quasi-conventional) relation to the content and subject matter of the beliefs to which we are entitled ... (478-479)

In order to assess this purported disanalogy, let us examine a pair of examples with an eye toward the relations among belief-content, perception, and perceived object. Let us compare Ben's learning the time by Mary's telling him with Ben's learning the time by looking at a clock. The first is a paradigmatic case of testimonial belief. The second is a case of belief based on perception in a way that does not involve testimony. Although it may be less directly based on perception than, e.g. Ben's belief that there is a clock in front of him, it involves the sort of perceptual input that figures in a great many ordinary cases of non-testimonial belief about the world. Beliefs more directly based on perception will be discussed below.

In the testimonial case, as Burge emphasizes, Ben will not (typically) first form a conscious belief about the sounds he perceives, then use further premises about the interpretation of these sounds and the general reliability of Mary to infer that it is three o'clock. Rather, he will simply hear what Mary says, and directly (at least as far as introspectable processes are concerned) form the belief that it's three o'clock.⁸

In the perceptual case, the typical process is in many ways parallel. Ben does not first form a belief about the numbers indicated by the clock, then use further premises about the interpretation of the indicated numbers and the general reliability of clocks to infer that it is three o'clock. Insofar as introspection furnishes an accurate picture of our mental processes, Ben forms the belief non-inferentially on the basis of his perception.

Now one of the contrasts Burge seems to be drawing concerns the relations between the content of the belief and the content of the relevant perception. In perceptual cases, the connection is supposed to be "constitutive", whereas in testimonial cases, it is "non-constitutive (quasi-conventional)." Perhaps what Burge has in mind is that in perceptual cases, the perception relevant to justifying one's belief that P is simply one's perception that P. Does this help distinguish Ben's two ways of learning the time?

It is hard to see what the distinction would be. In the perceptual case, it is true that we would commonly say that Ben "saw that it was three o'clock." But it is equally true that we would naturally describe the testimonial case as one in which Ben "heard that it was three o'clock." In the testimonial case, the relation between the time and the words Ben hears is dependent on linguistic convention. But this is equally true of the relation between the time and the numerals he sees in the perceptual case. In each case, Ben perceives a representation of the time. In each case, that representation represents the time in virtue of certain conventions. But in neither case does Ben make conscious inferences from facts about the representations to facts about time. Of course, if we pressed Ben as to why he believed it was three o'clock in the testimonial case, he might well adduce facts about the representation. But that is equally true in the perceptual case.

Another purported disanalogy seems to concern the relation between the perceived object and the subject matter of the belief. In the perceptual case, the relation is a "natural law-like causal relation," while in testimonial cases,

[t]he relation between words and their subject matter and content is not an ordinary, natural, lawlike causal-explanatory relation. Crudely speaking, it involves a mind. (479)

Putting aside the issue of conventionality, Burge here seems to contrast mind-involving relations with ordinary causal or explanatory ones.

Let us consider first our perceptual example. We would not say that the relation between the time and object of Ben's perception was "not ordinary, natural, causal-explanatory," but, rather, "involves a clock." We would not say this, because clocks are part of the causal-explanatory order; clock-mediated relations may also be causal-explanatory ones. But is the case of mind-mediated relations any different? Burge has given us no reason to think that minds are somehow set apart from the same causal order that encompasses clocks. If minds are part of the causal order, we have been given no reason for thinking that a mind-mediated connection cannot be ordinary lawlike or causal-explanatory.

Moreover, it is not clear how this question would be relevant to the present issue, which concerns the role of perception in forming beliefs. Even if we supposed that minds were somehow apart from the ordinary causal order, that would not seem to create any difference between the role perception plays in helping us base beliefs on the symbolic deliverances of minded entities, and its role in helping us base beliefs on the symbolic deliverances of mindless ones.

When we think about the two time examples, then, the attempt to draw an epistemically interesting disanalogy between the perceptual and testimonial cases seems to fail. It might be protested, however, that the examples are unfair. Our perceptual example was far from arcane, but it was deliberately chosen because it involves some of the same elements of indirectness and dependence on convention that are present in typical testimonial examples. And these elements are absent in certain paradigmatic examples of basic perceptual beliefs, such as Ben's belief, while looking at an apple, that there is an apple on the table.

Now we do not believe that Burge intends typical clock-based time-beliefs to come out a priori warranted. Nevertheless, let us put this question aside for the present. Suppose we concentrate on the role perception plays in Ben's believing that there is an apple on the table based on his looking at the apple. Here, the connection between the perception and the content of the belief

is intuitively more intimate. (There may even be a sense of "sees that P" in which Ben sees that there is an apple on the table, but does not see that it is three o'clock.) Thus perhaps when we focus on this sort of perceptual belief (let us call them "paradigmatic perceptual beliefs"), there is a disanalogy with the role perception plays in testimonial cases: after all, Ben's visual perception is of the apple in one case; Ben's auditory perception is of Mary's voice in the other.

Let us grant this disanalogy. The question then becomes what epistemological importance to attach to it. We might start by seeing how it relates to Burge's official definition of a priori justification. Does the disanalogy help show how our warrant in paradigmatically perceptual cases, but not in testimonial cases, is "constituted or enhanced by reliance on the specifics of some range of sense experiences or perceptual beliefs"?

When Ben sees an apple and believes that there's an apple in front of him, his justification relies on the specifics of his sense experience in the following sense: if his visual sensations had been significantly different--say as of an orange--an essential element in Ben's justification would have been missing. But the same seems to hold for Ben's testimonial belief that it is three o'clock. If his auditory sensations had been significantly different--say, of someone saying "It's four o'clock"--an essential element in the justification of his belief that it is three o'clock would be missing. It is hard to see any way in which the justification of even the paradigmatically perceptual belief is more enhanced or constituted by reliance on the specifics of some range of sense experiences.

Of course, there is in the paradigmatically perceptual cases an intimate relation between the content of the relevant perception and the content of the belief which is arguably missing in testimonial cases. But what does this have to do with a prioricity? The root intuition we are trying to capture involves a distinction between learning about the world through our senses and learning about the world through thought. The fact that the content of a belief is not the same as the content of a certain perception may speak to the directness of the connection between the perception and the belief. But it does not seem in the least to tell against the claim that the belief's justification depends on that perception. Thus although there may be a disanalogy between the role of perception in

testimonial beliefs and the role of perception in a certain sort of perceptual belief, the disanalogy seems irrelevant to the question of a prioricity.

Furthermore, it is doubtful that drawing even a seemingly relevant disanalogy in this restricted sort of example would serve to define a prioricity in a plausible way that included testimonial justification. For we would still need to say something about "non-paradigmatic" perceptual cases such as learning the time by looking at a watch. Are these to be classed as a priori? If not, then we would still need an account of the difference between the role of perception in these perceptual cases and its role in testimonial cases. Even if the role perception plays in a certain subclass of perceptual beliefs were relevantly different from the role it plays in testimonial beliefs, that fact alone would seem to cut little philosophical ice.

Of course, one might want to bite the bullet here and hold that the beliefs one forms directly on the basis of consulting clocks, thermometers, compasses, etc. are typically justified a priori. Perhaps this is no less plausible, initially, than giving the stamp of a priori warrant to testimonial beliefs. But where would we then stop? Do our clock-based beliefs about the time differ relevantly from a biologist's electron-micrograph-based beliefs about the structure of a certain virus? Surely to call the biologist's beliefs a priori justified would be simply to give an old term a new meaning.

It might be pointed out that typical theoretical beliefs are based on perceptions less directly; perhaps they typically involve conscious or introspectable inferences from more basic perceptual beliefs, while clock-based time beliefs are typically, from the introspective point of view, directly based on perception. Now we suspect that introspection would reveal no conscious inferences behind many scientists' judgements which, when rationally reconstructed, rely on large bodies of theory. But, more importantly, even if these theory-based judgements did depend on introspectable inferences, it is hard to see what the epistemic significance of such a fact would be.

For one thing, the fact that introspection fails to reveal inferences in most cases of clock-consulting does not go very far in showing that clock-based time beliefs are direct in any psychologically interesting sense. To rely on introspection in determining a belief's inferential

character would be methodologically misguided both psychologically and epistemically. For another, given the basic motivation for drawing a distinction between a priori and a posteriori justification--to separate beliefs whose justifications are "grounded in intellection, reason, or reflection, as distinguished from perception"--the whole issue of inferential directness or indirectness would seem to be simply irrelevant. Thus it seems that if we are to see testimony-based beliefs as justified a priori, we will have to be told how they differ relevantly not only from paradigmatic perceptual beliefs, but also from beliefs based on perceptions of clocks, thermometers, and analogous representational sources of information.

To sum up: The analogy between testimonial and geometrical beliefs fails to support the claim that the role of perception in testimonial beliefs is genetic rather than justificatory. Moreover, we have seen no difference at all between the role of perception in justifying testimonial beliefs and the role of perception in justifying beliefs based on clocks and like devices. We saw one difference between perception's role in both of these kinds of beliefs and its role in paradigmatically perceptual beliefs. But the difference was not intuitively relevant to the question of a prioricity.

It is worth emphasizing that the point we have been arguing is not that there is some continuum of justificational dependence on sense experience or perceptual beliefs, and no precise place to draw the line. Vagueness is a feature of many important distinctions. The point here is rather that, when we compare the role perception plays in the various kinds of belief we've looked at, we cannot see even a vague or rough way of drawing a line that both counts testimonial justification as a priori and answers to the philosophical motivations that make a prioricity interesting.

3. A Prioricity and Memory

Burge's remarks on the role of perception in justifying testimonial beliefs do not, however, exhaust the case he makes for taking testimonial justification to be a priori. Burge also uses an intriguing analogy to the function that memory plays in such paradigm examples of a priori

justification as mathematical proofs. In such cases, he writes:

Memory does not supply for the demonstration propositions about memory, the reasoner, or past events. It supplies the propositions that serve as links in the demonstration itself. Or rather, it preserves them, together with their judgmental force, and makes them available for use at later times. (462)

Burge wishes to draw a distinction between these cases and those involving "substantive" use of memory, in which premises about memory are essential to one's justification of a belief--for example, cases where one explicitly invokes the reliability of one's memory, or in which there is special reason to doubt one's memory. Of course, he acknowledges that "purely preservative" memory is not perfectly reliable. But that doesn't mean that premises about its reliability enter into the justification of our mathematical beliefs:

... if we take vulnerability to memory failure as a sign that a justification of reasoning must make reference to memory, no reasoning at all will be independent of premises about memory. This is unacceptable. It is one thing to rely on memory in a demonstration, and another to use premises about memory. Any reasoning in time must use memory. But not all reasoning must use premises about memory or the past. (463)

The significance of the distinction for Burge is that reliance on purely preservative memory, unlike use of premises about one's memory, does not compromise the a priori status of one's justification. This furnishes him with another analogy to testimonial beliefs:

In interlocution, perception of utterances makes possible the passage of propositional content from one mind to another rather as purely preservative memory makes possible the preservation of propositional content from one time to another. (481)

Now of course we would question the adequacy of describing testimonial beliefs as resulting from the mere "passage of propositional content from one mind to another." Propositional content does not pass directly from one mind to another; rather, the passage is mediated by perception of an utterance, in ways we have studied above. But we do not want to dismiss Burge's analogy on this

basis, for his discussion of memory raises an interesting question about a prioricity.

When one justifies one's belief by explicitly invoking premises about what one remembers, and about the reliability of one's memory, it is hard to see how one's justification could be a priori. After all, one presumably believes in the reliability of one's memory on empirical grounds. Yet, as Burge rightly points out, we must allow for implicit reliance on memory in paradigmatic cases of a priori reasoning. Thus Burge invokes the distinction between explicit invocation of memory as a premise and implicit reliance on memory to divide the empirical from the a priori. This is an interesting proposal in itself. Moreover, if it worked, we might have new reason for taking seriously the possibility that similar significance should be attached to the distinction between explicitly invoking premises about an interlocutor's speech acts and simply taking his word for something.

Can this distinction--between explicit invocation of memory and implicit reliance on memory--bear the philosophical weight of grounding the a priori/a posteriori distinction? One might wonder what deep epistemological difference there should be between relying on a premise and relying on a process whose reliability is asserted by that very premise. And indeed, we see two reasons for doubting that the distinction between substantive and purely preservative memory can mark the border of the a priori. The first is that this proposal turns out to have consequences many would find unacceptable when it is applied outside the context of constructing mathematical proofs. The second is that the way memory actually works suggests that even the purely preservative use of memory often introduces empirical elements into the justification of memory-based beliefs. Let us turn now to the first problem.

Suppose Annie believes that the square of the hypotenuse of a right triangle is always equal to the sum of the squares of the other sides. Maybe she once saw it proved. Maybe she unquestioningly took her teacher's word for it. Or maybe she learned it from another student, in a way that required discounting the possibility that the student was lying to her. Annie no longer remembers how she learned it. She presently believes the theorem, though, and not on the basis of

explicitly invoking premises about her memory, but simply because she remembers the theorem.

Is Annie's belief justified a priori? Suppose first that we say that it isn't, even if she initially formed the belief by doing a rigorous proof. This would seem inconsistent with the view that implicit reliance on preservative memory does not compromise a prioricity. For Annie's reliance here is on the purely preservative aspect of memory--it does not seem different in kind from that which is required in proving the theorem in the first place.

Suppose we say, then, that Annie's belief is justified a priori in virtue of being supported by purely preservative memory. This would make her belief a priori warranted even if she had originally formed it in a (now forgotten) a posteriori way, as imagined in one of the scenarios discussed above. If we accept that, then it would seem that we should say the same about Annie's beliefs, say, that she lives in Hinesburg, that George Washington was President of the U.S., that there are nine planets, etc., for these beliefs are also maintained on the basis of purely preservative memory. As Harman⁹ and others have pointed out, a great many of our beliefs about the world are like this. Indeed, even when we could cite evidence for our beliefs if pressed, we typically don't think about that evidence; we simply rely on our memory. And the fact that we could also cite evidence for a particular belief does not reduce the force of our memory-based warrant.¹⁰ So in a great many cases, we would seem to have sufficient warrant for a priori justified belief. Do we want to say that, insofar as they are maintained by purely preservative memory, the vast majority of our beliefs about the world--probably most of our beliefs that don't concern our present internal states and immediate surroundings--are justified a priori? This option seems no more attractive than the first.

What, then, can we say about preservative memory and a prioricity? One might hold that whether the justification of a person's memory-based belief is a priori or not depends on historical factors, such as how the person acquired the belief in the first place. This would limit to some extent the explosion of a prioricity that seems to be entailed by the proposal just considered. However, this proposal too has consequences that will be unattractive to many. For it entails that two people could

remember the same fact--indeed, they could share all the same present beliefs, reasons, cognitive abilities, and memories--and one of them be justified a priori and the other justified a posteriori, because one of them had done the proof 20 years ago, while the other had taken a student's word for it after self-consciously considering the possibility that he was lying. A priori justification would then be a function neither of the believer's present reasons for belief nor, indeed, of anything else about the believer's present cognitive states and capacities.¹¹

This is not, of course, a knock-down argument against the proposal. Those with internalist sympathies--who want to see justification as depending on factors to which the agent has cognitive access, or even more broadly as depending on (non-relational) facts about the agent's cognitive system--will be unlikely to allow the a prioricity of those justifications to depend on facts so external to the agent's present beliefs, reasons, or capacities. On the other hand, those who are prepared to take a frankly externalist view of justification may not find this externalism about a prioricity unpalatable.

But there is another reason for doubting that the distinction between substantive and purely preservative memory can play such a crucial role in differentiating between a posteriori and a priori justification. The second reason concerns the way memory, in its preservative role, actually works.

In thinking about memory, it is important to remember that memory does not act as the term "purely preservative" might naturally suggest. What the term seems to suggest is that memory functions, when it is working properly, as a passive recording device. By accurately preserving beliefs or perceptions, it allows our other cognitive capacities to go to work, at a later time, on this untainted data. Memory is a kind of Hall of Records, where files are kept for future use, as the occasion should arise. A faulty memory, on this view, is one which files an inaccurate record. Fortunately, it seems, such inaccurate recordings are unusual.

This picture is fundamentally at odds with what cognitive psychologists tell us about the workings of human memory.¹² Memory may be divided into three stages: encoding, storage and

retrieval. The Hall of Records View would have us believe that encoding is a matter of, in effect, taking a photograph of the passing scene; storage is a matter of placing that photograph in a file; and retrieval is a matter of taking the photograph out of the file. In fact, however, memory is far more constructive, and less passive, than such a picture would suggest. Our background concerns, interests and other beliefs--whatever their sources--affect the process at each of the three stages. Far from being a passive recording, storage, and playback device, a correctly functioning memory involves a cognitively informed reconstructive process at every stage.

Of particular interest is the way in which memories are often conditioned by, and in a sense incorporate, our background beliefs. Our remembering that P is supported by P's connections--its inferential connections--with our background beliefs. Indeed, it is for precisely this reason that our memories tend to cohere with our background beliefs, just as our beliefs in general tend to cohere with one another.¹³ And the background beliefs involved include, of course, the empirical ones.

This observation strikes us as important. For insofar as a memory is inferentially informed by empirical beliefs, its power to justify belief would seem to derive, in part, from sense-based information. In such cases, it would seem pointless to deny that justifications relying on that memory were empirically-based.

One might object here that a memory's causal or genetic dependence on background beliefs need not be relevant to the justificatory force of the memory. Perhaps we could see the role of background beliefs in preserving memories as akin to the role of diagrams in doing mathematical proofs--as being necessary as a matter of psychological-causal fact, but as justificatorially irrelevant.

We would find such a view quite implausible. For it seems to us that the justificatory status of the background beliefs that help preserve a memory does affect the justificatory status of beliefs based on that memory. For an illustration of this phenomenon, consider the following cases:

Sophie believes that the Vikings came to North America before Columbus. Although she originally adopted this belief for good reasons, Sophie no longer remembers how she came to adopt this belief; she just remembers that the Vikings preceded Columbus. Moreover, she does not

explicitly think about the fact that she is relying on her memory; her belief is on the basis of what Burge would call purely preservative memory. The belief, however, is preserved in memory as a result of its inferential connections with other things Sophie believes about the Vikings. Sophie remembers it, and is able to retrieve it from memory, only because it is inferentially connected with these other Viking beliefs. These other beliefs, finally, were acquired in an excellent course on Viking society, and are themselves well justified. And it would seem that Sophie's belief that the Vikings reached America before Columbus is justified as well.

Compare this with a case in which Sam believes that the Vikings came to North America before Columbus, and he too does not remember how he came to learn this bit of information. Like Sophie, Sam originally formed his belief for good reasons, but has forgotten those reasons now, and currently maintains his belief on the basis of purely preservative memory. Also like Sophie, Sam remembers this fact about the Vikings, and is able to retrieve it from memory, only because it is inferentially integrated with so many other things which Sam believes about the Vikings. Unlike Sophie's other beliefs, however, most of Sam's other beliefs about the Vikings are held quite irrationally. Years ago, a crackpot history buff gave Sam a copy of his magnum opus on the Vikings--a work full of bad reasoning and unsupported conjecture, which claims that the Vikings invented the electric light bulb, that they discovered the vaccine against polio, and so on. Sam, unfortunately, was so moved by the crackpot's charisma that he has great faith in this book; he rereads it often and believes its theses uncritically.

Now the reason that Sam believes that the Vikings preceded Columbus is not that the book says so. In fact, the book does not take any stand on the matter. But Sam remembers that the Vikings preceded Columbus only because this proposition is inferentially integrated with the ones he does believe on the book's authority. If it were not for its inferential connections with his irrational book-based beliefs, his memory that the Vikings preceded Columbus would have faded out long ago, and he would not have the corresponding belief today. In this case, it seems to us that Sam's belief that the Vikings preceded Columbus is not justified.

Now this difference in justificatory status between Sam's and Sophie's belief indicates that a memory's genetic dependence on inferential integration has significant epistemic importance. It is precisely because Sam's remembering that the Vikings preceded Columbus is preserved through integration with his unjustified beliefs about the Vikings that we judge his memory-based belief that the Vikings preceded Columbus to be unjustified as well. Even in the cases involving the purely preservative function of memory, the justificatory status of the beliefs a memory causally depends on must be recognized as playing a role in determining the justificatory status of beliefs based on that memory.

One might object that, in the case in question, the initial warrant for Sam's belief (provided by his purely preservative memory) is present, but is undermined by the beliefs' inferential connections with other beliefs. Thus the belief receives a certain degree of warrant from purely preservative memory, independent of any considerations of the memory's inferential integration; yet this justification is somehow undermined by the presence of Sam's irrational book-based Viking beliefs, leaving the belief in question unjustified all things considered.

It is hard to see what would make such an account plausible in this case. After all, the unfoundedness of the claims in Sam's book on the Vikings does nothing at all to call into question the claim that the Vikings preceded Columbus. Nor does the irrationality of these beliefs--or of Sam's vulnerability to charismatic crackpots--do anything to call into question the working of Sam's preservative memory. Indeed, Sam's memory may be quite excellent, and he may have no reason at all to question it. The deficit in Sam's case seems to lie in the justification provided by the particular memory that the Vikings preceded Columbus. The justificatory power of a memory cannot, in the end, be divorced from the justificatory status of the beliefs whose inferential connections sustain it.

Once this is recognized, it is hard to see the motivation for claiming that the justification conferred by a memory which depends on inferential integration with empirically justified background beliefs can itself be purely a priori. If the amount of justificatory force supplied by a

memory depends on whether the beliefs which sustain the memory are justified, it would seem that the type of justification provided by the memory would equally depend on how the sustaining beliefs are justified. Thus in cases where a memory is preserved through its connections with empirically justified beliefs, the justification the memory confers will itself be empirical. And this will be true even if the agent doesn't consciously invoke or entertain those beliefs when relying on the memory.

The distinction between preservative and substantive uses of memory does track a clear distinction in the phenomenology of reasoning. But that doesn't show that it corresponds to anything deep at the epistemic level. In particular, it turns out not to track the distinction between a priori and empirical justification. This point suggests that the scope of a priori justification will be substantially narrower than would be allowed by Burge's claim that the workings of preservative memory never introduce empirical elements into the justification of beliefs. Indeed, given the pervasive importance of preservative memory in so much of our reasoning, and of background beliefs in preserving memories, the scope of a priori justification may be much narrower than one might have thought.

We have not, of course, argued that every single case of a remembered mathematical belief is actually informed by some empirical belief. The dependence of preservative memory on inferential integration does not show a priori reasoning in time to be in principle impossible. How much is possible in practice is an empirical question. And given that we lack easy access to the inferential workings of our memories, it will not be an easy question to answer. Moreover, given the depth and complexity of the inferential interdependence among our beliefs suggested by many current models in cognitive science, the line between those memories which do depend on empirical beliefs and those which don't is likely to be blurred considerably.

Of course, to some, the picture suggested here will seem a familiar one. It has long been pointed out that our cognitive faculties are shaped by experience from the moment we are born, and the deliverances of our cognitive faculties are inextricably bound up with the deliverances of experience, past and present. Quine long ago urged the futility of trying to separate out beliefs

whose justification is wholly independent of empirical input. Reflection on the inferential workings of memory, and on its role in justification, seem to us to provide an interesting new way of appreciating this old insight.¹⁴

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NOTES

1. Essays on the Intellectual Powers of Man, Cambridge: MIT Press, 1969.
2. "Testimony and Observation," American Philosophical Quarterly, 10 (1973): 149-155 and Testimony: A Philosophical Study, Oxford: Oxford University Press, 1992.
3. See, e.g., Theory of Knowledge, third edition, Englewood Cliffs: Prentice-Hall, 1989.
4. "Content Preservation," Philosophical Review 102 (1993): 457-488.
5. Derk Pereboom has also argued that the interest of the notion of a prioricity is quite independent of the question of infallibility. Indeed, he attributes just such an account of a prioricity to Kant. The account of a priori warrant which Burge defends has important similarities to the account Pereboom attributes to Kant. See Pereboom's "Kant on Justification in Transcendental Philosophy," Synthese, 77 (1990), 25-54.
6. This argument was suggested to us by Keith DeRose.
7. Burge writes that "Understanding content presupposes and is interdependent with understanding the force of presentations of content. So entitlement to the former must presuppose entitlement to the latter" (481). Now surely it is true that no one could learn to understand contents in general without understanding when contents were being asserted. But just as surely, one may understand a particular content without understanding it to have been asserted or presented as true. The former--which is typically seen as involved in mathematical proof--is intuitively justificatorily independent of any particular perception. It is the latter, however, that is needed in interlocution. And it is hard to see how an individual's entitlement to take a certain proposition to have been presented as true in interlocution could be perception-independent in this way.
8. Of course, Burge acknowledges that there are cases when the conscious inference from the reliability of the informant is made; but such beliefs will not, on Burge's account, qualify as

justified a priori.

9. Change in View: Principles of Reasoning, Cambridge: MIT Press, 1986, chapter 4.

10. Burge expresses exactly this view about a priori justification in general; see p. 459.

11. It should be noted that we are discussing the a prioricity of what Burge calls a person's "own proprietary justification," which includes "all the reasons available to the [person], together with all the entitlements deriving from his own cognitive resources" (485). This is different from what Burge calls the person's "extended body of justification," which reaches beyond the person's own reasons and resources, and includes historical factors such as the chain of other people's beliefs that led to the belief under consideration. The latter notion is relevant to Burge's account of knowledge, and is beyond this paper's scope.

12. See, e.g., Roberta Klatzky, Human Memory, San Francisco: W. H. Freeman and Company, 1975.

13. See Klatzky, op. cit., 4 and passim. This is also a pervasive theme in Elizabeth Loftus' Eyewitness Testimony, Cambridge, MA: Harvard University Press, 1979.

14. We would like to thank Keith DeRose, Steve Jacobson, Bill Talbott, an anonymous referee, and especially Derk Pereboom.