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Memory and Persons

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I want to reflect on some functions of memory and their relations to traditional issues about personal identity. I try to elicit ways in which having memory, with its presupposition of agent identity over time, is integral to being a person, indeed to having a representational mind.

1.

Three types of memory figure in the discussion. The first is *remembering x*, where *x* can be a particular thing, event, property instance, experience, state, or act. Call this type "*experiential memory*." The second is vividly exemplified as *remembering that p*, though as will emerge I conceive of it more broadly. Call this second type "*substantive content memory*."

I construe remembering that *p* as involving a belief that *p*, retained from earlier acquisition of the belief.¹ One might have acquired the belief retained in substantive content memory by various means: perception, self-knowledge, interlocution, reasoning. Experiential memory places greater restriction on the antecedent cognitive state from which the memory derives. To remember that Napoleon was defeated at Waterloo, one can have acquired the information in many ways. To remember Napoleon's defeat at Waterloo, one must have been there.

Well, perhaps I exaggerate. Linguistic usage is loose and varied. Here I just assume that experiential memory, as the term suggests, requires previous perception or experience of the remembered object, or some other fairly direct awareness, such as introspection.²

The third type, *purely preservative memory*, is distinguished by the representational and epistemic roles played by the retained content. Experiential memory and substantive content memory introduce new subject matter into current thinking. They yield or require new warrant. Purely preservative memory merely retains representational content for further use. It introduces no content or warrant into an argument. When I recall a general fact, I use substantive content memory. When I recall an event, I use experiential memory. When I use an earlier-instantiated step in an argument to combine with an inference rule, I rely on purely preservative memory.

I introduced substantive content memory and purely preservative memory in propositional form. I allow for nonpropositional ana-

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logues. A lower animal's memory of a color type that attributively guides its activity can be a nonpropositional substantive content memory. Such memory does not retain a representation of an instance of the color. The memory is only the residue of general aspects of perception of instances. So the distinction between experiential memory and substantive content memory is not that between nonpropositional and propositional memory. All experiential memory is *de re* and must go back to a previous experience of a particular. (It must, of course, still involve general, categorizational elements.) Substantive content memory consists either in purely general, non-*de re* presentations, or in *de re* propositional memories that do not go back to a perception or experience of a particular.

Purely preservative memory need not be propositional either. It can retain perceptions or representational action sets for further use, even in animals that lack propositional abilities. Purely preservative memory is not distinctive in what it preserves—general or singular, propositional or nonpropositional. It can retain any sort of representational content. It is distinguished purely by its role—preserving content and attitude for later use, while introducing no new subject matter or new warrant into a current representational transaction.³

All experiential memories, and many memories of the other types, have *de se* form. To have *de se* form, to be *egocentrically indexed*, a memory's representational content must meet two conditions. It must include an element that indicates the rememberer in such a way as to mark other entities referred to by the content as being in relation to the rememberer's position or perspective. And the element must mark other entities so referred to by the content, as being of immediate relevance to the rememberer's needs, aims, or perspective.

Understanding *de se* elements may be facilitated by considering their role in perception. Perception is prototypically *de se*. *De se* elements in vision indicate the perceiver as at the origin of vision's spatial and temporal representational frameworks. Thus, an egocentric index might mark the origin of a spatial framework in which a perceived object is represented in relation to the perceiver (for example, to the left). To be *de se*, the perception must also be linked with an immediate sensitivity to ego-related implications. If a large object moves speedily toward the perceiver's position, the representation is immediately associated with motivation to get out of the way. Experiential memories retain *de se* elements of the representations from which they derive.

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Egocentric indexes figure in the perceptual representations even of lower animals such as insects. They are the phylogenetic ancestors of the first-person concept. The first-person concept bears more complex relations to indications of the person's spatiotemporal position, but inherits fundamentally the same framework-fixing and motivational implications of *de se* representations. It differs in being conceptual, in being essentially associated with certain background propositional and inferential capacities, and in being used in *acts* of reference.

The relation between the mature first-person concept and its *de se* ancestors will not be crucial here. A few further remarks might nevertheless be helpful. I can associate the first-person concept with my memory of having gone to a concert in which Glenn Gould played a Beethoven piano concerto. I leave open whether my memory representation of "having gone" contains the mature first-person concept, or whether it contains some lower-level *de se* element. In either case, on apriori reflection, acceptance of the memory commits me, given that I have the mature concept, to applying it: If the memory is veridical, I went to such a concert.

Higher nonlinguistic animals have conceptualized memories, I believe, but lack a mature first-person concept. Many lower animals have perception and perceptual memory, but lack concepts and propositional attitudes altogether. There is a *de se* element in the form and function of both sorts of animals' perceptual memory. That is, such animal perceptual memories meet both requirements on *de se* markers. Suppose that a dog has *de se* experiential memories of burying a bone in a certain place, and wants the bone. It will not only navigate to that place and dig. It will act toward the territory of the bone in proprietary ways—let us suppose, differently from how it would act if it remembered a rival's burying the bone. The perceptions and memories are constitutively associated with immediate use for the needs of the animal itself.

This case illustrates the presence of two grades of *de se* involvement in an experiential memory. There is an egocentric index in the memory connecting it with perceiving the burying. That is part of the explanation of the dog's returning to the scene. This dimension of egocentric indexing is common to all experiential memories. In this particular case the memory also marks the rememberer *de se* as the agent of the burying that was the *referent* of the memory. This is part of what explains the dog's proprietary activity. The dog's memory is doubly

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egocentrically indexed. One or both of these indexes will be associated with spatial coordinates of the burying.⁴

Some memories have a third grade of *de se* marking. These are experiential memories *from the inside*. First, the notion of being from the inside; then, the three grades. An experiential memory from the inside is one that retains the perspective of one's remembered agency, state, or experience, as it occurred.⁵ If an experiential memory is not from the inside, it is *from the outside*.

Experiential memories of entities other than acts, mental states, or experiences (of entities that lack a perspective to get inside of) and experiential memories of *others'* acts, mental states, and experiences are from the outside. One can remember a statue, or M. L. King's "I Have a Dream" speech event, only from the outside. By contrast, in remembering drinking a Clos Vougeot at a restaurant, I might remember how the room looked from where I sat, how the glass tilted to obstruct the view, how the wine looked, smelled, tasted as I drank it. That would be to remember the act from the inside. I can also remember my actions from the outside. If I remember drinking the wine by way of an image of myself in a mirror, perhaps not even realizing that the image is of me, I remember it from the outside.

When I remember my act or event from the inside, the memory is indexed to mark all three *de se* grades. It is indexed to my having experienced the act or event, to my having been the agent or subject of it, and to my perspective as agent in the past act or event.⁶ All experiential memories have *de se* form along the first dimension. Some are *de se* along the second dimension. These are experiential memories of having done, thought, or experienced something. A proper sub-class of these are *de se* along a third dimension—those that are remembered from the inside.

I assume that experiential memories, and *de se* memories generally, need not themselves apply the first-person concept. They do carry first-person presumptions, or would-be commitments for an informed, reflective, conceptually mature person.

Presumption is not a propositional attitude in the individual whose states carry the presumption. A *presumption that p is associated with* an individual's being in a representational state if and only if veridical recognition that p would rationally derive from fully informed, conceptually mature reflection on the conditions that make that state possible, *from the would-be perspective of the individual in that state*. Thus, the presumption of application of the first-person concept is associated not

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only with mature persons' experiential, *de se*, memories. The presumption is also associated with lower animals' *de se* memory states, even though such animals lack propositional attitudes and the first-person concept. Conceptually mature, informed reflection, that elaborates the animal's perspective, would yield first-person memory beliefs.

Substantive content memories and purely preservative memories need not have *de se* form. But all of them have *de se* and first-person presumptions.⁷ To be any kind of memory is constitutively and necessarily to preserve a past representational state that is the rememberer's own. Elaborating the rememberer's perspective yields *de se* and first-person presumptions.

Presumption is linked to *presupposition*. Being in a representational state *presupposes that p*, if and only if a metaphysically necessary condition on being in that state is that *p* and this condition can be arrived at by mature reflection on the conditions that make that state possible. Presupposition relaxes the requirement on presumption that reflection be from the individual's perspective. Having a memory with a certain representational content presupposes that the rememberer was in a representational state with that content, or a content that implies it.

2.

With these distinctions in hand, let us consider relations between memory and intentional agency. Experiential memories have *de se* form. If I remember an explosion, the memory retains a (first-grade) *de se* mark of its derivation from *my* perception of the explosion. There is immediate psychological relevance to its deriving from the *de se* marked perception. If I remember hearing a symphony, the memory is indexed at least at the second grade—to my being the agent of the remembered event. Something analogous is true of common intentions. They are *de se* at the second grade. If I intend to listen to all of Bruckner's symphonies, I am committed to my doing the listening. Someone else could not carry out my intention. If I remember listening to the symphonies pursuant to the intention, then I can take satisfaction in fulfilling my plan.

I think that an individual could not have intentions in *de se* form unless he or she could maintain them in memory. There are two ways in which this connection is necessary.

The primary way is that retention of intentions in memory is necessary to guiding and controlling intentional activity. Intentions are not

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point events. Some intentional activity may be instantaneous. Most—I would say necessarily some—requires working out over time. Acts take time and a sequence of sub-acts to be realized. Memory must retain the intention from the time it is formed to the time the action is carried out, if the intention is to control the intended act. Memory must connect the intention to a representation of the act, to record that the act has satisfied the intention. Memory must maintain the *de se* form that the intention has. And the representation of the act must share *de se* form to record a match. If an animal could not record a match between the act and the intention that it is supposed to fulfill, the animal would have no psychological basis for not repeating an act that it had already carried out.⁸

There are nonpsychological ways of initiating and ceasing activity to meet need. But an explanation in terms of intentions must invoke this role for memory. The idea that a being could form intentions, constitutively lack a capacity to retain them in memory in carrying out the action, and cease activity when the intention is fulfilled, always through some nonpsychological process, is, I think, incoherent. Ability to maintain continuity in *de se* perspective and presumptions between intention and act is necessary to control in practical agency.

Such retention must reside in purely preservative memory, although it could also be exercised in the other types of memory. Thus, the mere retention of the force and content of an intention from its onset to the time when it is acted upon is an exercise of purely preservative memory. Here it must be recognized that a retentive, memory element is involved in the very having of representational *states* that last over time—inasmuch as these states are capable of having psychological effects beyond the time intervals when they are first formed. The capacity to retain a representational state over time is a memory capacity, which requires continuity of content and force, and retention of representational content and force until they are called upon in later psychological transactions. In the case of intentions, the capacity includes a capacity to retain both referents and representational contents of *de se* markers. And this retention must link up with *de se* markers in act-representations so as to, again, retain both referents and representational contents of the markers as they occur in the intentions. Whether an individual has an additional experiential memory of the onset of the intention is, I think, not crucial. Similarly, the individual's having a substantive content memory (retaining a belief) that he has an intention with the relevant representational content is not crucial. Each of these

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latter two types of memory retention enriches intentional agency. But what is fundamental is the preservative capacity to maintain an intention, together with its representational content, and to call upon it and act upon it, over time.

The second way intentional agency and memory are necessarily connected involves the retention of sequencing of acts in the fulfillment of intentions. If I intend to listen, in order, to Bruckner's ten symphonies in a month, I have to fulfill this intention serially. To record a match between my activity and my intention, I must record listening to the first of the symphonies, then the second, and so on. Each memory of a listening must have *de se* form. For at the end of the month I must have some *de se* memory of *listening* to all the symphonies if a match is to be recorded with my intention. As I have argued, this intention too must be retained in *de se* form. In the case of such sequencing, the essential type of memory is purely preservative memory, not experiential memory. In this case, the purely preservative memory must retain a temporal sequencing and content-specification of each of the acts of listening. But it is not apriori necessary that the individual remember each episode in the sequence via experiential memory.

I believe that these points state necessary conditions on having *intentions-to*. Having an intention to do something requires having (as a matter of normal psychological constitution) a capacity for memories that retain the *de se* element from the intention. *Intentions-to* constitute the basic kind of intention. They are the analogues of *de re* belief, and have the same priority.⁹ Having other kinds requires having this kind. A dying person may intend that his or her worldly goods be distributed in a certain way. This is *intending that*, not *intending to*. Intendings-that (like impersonal desires) depend on a background of intendings-to (wantings), which are essentially *de se*. The infinitival, *de se* forms are basic to agency. The *de se* forms must be retained in memory.

None of the memories just discussed need refer to intentions. *Normally* memory simply preserves the intention—its content and conative force. *Persons*, however, have memories that conceptualize and refer to past intentions. Understanding one's life (as distinguished from simply having a life) requires having experiential memories of past intentions. Such memories in first-person form are basic to reflecting on how well one's projects have been satisfied.

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3.

Agency relies upon memory, which stems from perception. Perceptual representation, in turn, constitutively depends on use. Commonly this use lies in overt agency.

When we perceive a physical object, we perceive it as located relative to our spatiotemporal viewing position. Egocentric indexes carry psychological implications in addition to indexing positions. They mark not only the origin of a framework within which the information can be used. They also mark the immediate psychological relevance of perceptual information to the perceiver's own use—to the perceiver's own needs, aims, or activities. I believe that the representational contents of all perceptions are egocentrically indexed. All perception is certainly dependent on perception that represents objects in an egocentrically indexed framework.

For a perceptual state to have content, some content must be of possible immediate use for the perceiver.¹⁰ So an object must be represented not just in relation to what is in fact the viewer's viewing position, but as in relation to the viewer's perspective and needs *de se*. *De se* elements, and only such elements, mark the inevitable connection between perception and use.¹¹

The most bare-bones notion of use is perceptual use. Having a perception requires having repeatable perceptual abilities—abilities to perceptually discriminate particulars (including property instances) in terms of perceivable kinds or types that they instantiate. This includes an ability to apply repeatable perceptual representational content to different instances of these kinds or types. Such repeatable abilities include a systematic ability to connect, from moment to moment, successive perceptions to one another and to the standpoint from which they represent. This is what any perception's being *de se* partly consists in. The retentive aspects of these abilities are the basis for *de se*, or *de se*-presuming, purely preservative memory of perceptual content.

I think that the bare-bones notion of use is necessarily swathed in more flesh. A richer relation between perceptual content and use emerges in the nature and individuation of perceptual states. For any property that a perceiver can perceive, there are patterns of intervening causal factors (such as light arrays) and patterns of stimulations on and in the perceiver that make perception of that property possible. Perceptual sub-systems are sensitive to those patterns, and as a matter of physical law must be, if the perceiver is to perceive the property. Why

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is the perceptual state a perception of that property rather than a perception of a pattern of intervening causal factors or sensory stimulations? Because the property (or associated ones) enters into explanation of animal agency—eating, navigating, mating, fleeing. The perceptual content of perceptual states is individuated not only by what the animal or its subsystems can discriminate, but by entities figuring in the animal's needs and activity. These are properties and objects that the animal, not just its subsystems, engages with in using perception. At the most primitive levels of perception and agency, the relevant animal needs, aims, and activities are biological.

So perceptual states with representational content are correctly individuated by reference to relations to objects and kinds in the environment that perceivers use perception to engage with in fulfilling their needs and goals. The capacity to perceive and act in the immediate service of the individual perceiver's own perspective, needs, and goals is a fundamental topic of psychological explanation. It must be marked in the representational content that type-individuates the perceptions and acts. *De se* or egocentric indexes fulfill this role. Perceptual contents must be preserved in memory if they are to be used. Reapplicability of such contents is essential if perceptions are to be useful. So representational contents of perception must be preserved in memory if they are to be of use for the perceiver—hence if they are to have any intentional content at all. To have a repeatable use, perception must be associated with a memory capacity to preserve its contents over time, for use by the individual. This capacity is *de se*.¹²

For my main purposes, I need not explicate the richer notion of use. I want to pause over it, however. How are we to understand it? Broadly. Some perceptual contents might be useless, evolutionarily accidental companions in a system of other contents that *are* usable. A perceptual category may have evolved as useful in one species and be retained in another that no longer has a use for it. A dodo's visual system might have retained representations of properties relevant to flight although dodos cannot fly. Perhaps perception could yield a fear reaction in a species after the species lost any ability to flee. Should one count the fear reaction a use? I do not know.

In actual animal life, use for perception lies in guiding agency—nearly always agency in the species in which the perceptual system and content were fashioned. I am tempted by a more committal view. The relevant use for perceptual content of a perceptual system *must* be for agency—allowing for the by-product and inter-species points made in

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the previous paragraph. This “must” can surely be construed as an evolutionary “must.” Is it a deeper? Is it metaphysically possible that there is a perceiver of physical features where the perceptual representational content cannot be associated with any function or use in animal agency?

Perhaps a helpless sea creature watches large forms pass by and has survived because few enough of them are predators. Perhaps the creature feels fear; but the fear has never been associated with any avoidance movement, even in evolutionary ancestors with the creature’s visual system. Perhaps there never were any active uses for the perceptual system. Even granted that this never in fact happens, is it not possible? One can forget about evolution and try to conceive a being that takes an interest in the passing show but never could do anything about it. Again one has to add that there is nowhere in the individuation of the perceptual system any connection to agency—including no mental agency, no inference. These ideas tempt some people.

I think that they mislead. One can imagine a human paralyzed and without mental agency, who can still perceive. Such cases take over a perceptual system that had use in agency. One can imagine God’s creating a perceiver with no evolutionary history who has not yet acted. I believe that here again one implicitly relies on a function for agency in God’s designing and God’s design. Some insist that no such function need be in the wings. Perception is conceived as purely passive—connected to no pursuits, either in God’s design or in the system’s history.

I think this position untenable. I think that it involves magic thinking about perceptual content. Reapplication of perceptual categories to serve mere perceptual interest in the passing show is too insubstantial a “use” to make perceptual content possible. The position involves magic thinking inasmuch as it cannot non-arbitrarily explain why the animal’s perceptual content specifies physical kinds and particulars rather than any number of other entities that are causally relevant to its perception and systematically correlated with those kinds and particulars. Better, why does the animal have *perception* at all? For vision, there are the patterns of light that are correlated in lawful ways with kinds and particulars in the environment. There is the array of proximal stimulations. There is the array of internal stimulations at various stages along the optic nerve. Reliable and regular discrimination is not enough for perception, even if it correlates counterfactually with the physical properties that are in the environment. For these other patterns also correlate counterfactually. Perceptual ability is individuated

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in terms of the uses in agency for the biologically relevant needs and goals of individual animals, including humans.

Perception must categorize in ways that are immediately relevant to use by the perceiver. *De se* elements, and only *de se* elements, mark the immediate relevance of content to animal perspective, needs, and aims, and mark immediate sensitivity to use of content in agency that serves them. *De se* elements have this explanatorily relevant function. To be of use, perception must be linked with a capacity to preserve its contents *in memory* over time. The memories must have *de se* forms and presumptions.

Whether or not the connection of perception to agency is metaphysically necessary, the role of *de se* memory in mediating perception and agency is necessary *in individuals that use perception in agency*. The simplest connections between perception, memory, and agency involve egocentrically marked short-term or working memory. Think of quick reactions to perceived situations, such as fleeing or catching prey. In any being with *intentional* or other complex agency (like birds' burying caches of food), there must be a capacity for retention of projects over longer periods. So any view that attempts to understand beings with relatively complex agency must attribute long-term memories with *de se* form or presumptions.

4.

So far I have discussed dependence of intentional agency and perception on memory. I want now to discuss the role of memory in inference. Norms of inference are sensitive to the identity of the reasoner. If I rationally believe that *p* and I rationally believe that *q*, then I am rationally committed to believing that *p* and *q* (other things equal). But if I rationally believe that *p* and *you* rationally believe that *q*, there is no rational pressure for either of us to believe the conjunction. I might even believe rationally that *you* rationally *ought* to believe that *p*. It does not follow that *you* should. The information available to *you* may be sufficiently different that it is not rational for *you* to believe that *p*. From points about what it is rational for one person to believe, nothing follows—in many cases—about what it is rational for another person to believe.

De se forms of memory constitute a special case of the applicability of rational norms of inference to an individual's perspective. When I remember listening to a Mozart Piano Quartet in Boston, I remember

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an event that is indexed to me. The logical form of the memory indexes me *de se*. Given that I have a mature first-person concept, I am committed by acceptance of the memory to believing that I listened to music then. Experiential memories combine under logical norms that reflect these facts. If I remember listening then and I remember enjoying a Botticelli painting the same afternoon, then if I accept my memories, I am logically committed to accepting that I both listened to the music and enjoyed the painting on that day.

Normative dependence of inference on memory and on the identity of the reasoner is pervasive. It does not merely occur in inference with *de se* contents. Purely preservative memory is anaphoric. It preserves the representational content and attitudinal force of an antecedent state. The representational content of a purely preservative memory is the content preserved, which can be any content. Inferences, whether deductive or inductive, by scientists and mathematicians frequently contain no *de se* elements. All such inferences rely on purely preservative memory. Purely preservative memory contributes no force of its own to justifications or entitlements in an argument. Still, if purely preservative memory did not function properly, an individual's warrant for taking a step in an inference or argument would lapse.

If an argument is to support its conclusion, one must rely on purely preservative memory to preserve past steps with warrant unchanged. A step and its warrant must be held constant if it is to combine with another step or just an inference rule to take a further step. The presupposed constancy of content and of warrant over time depends on purely preservative memory.

Suppose that a perceptual belief's representational content and warrant are maintained over time by purely preservative memory in an argument. They are maintained between the initial instantiation of the belief and the time when it is reinvoked to be combined with other contents and rules of inference, or simply with a rule, to take a further step. If the content, as preserved at the later time, had derived from an earlier instantiation of the content in another person (a person who had the perceptual experiences), the warrant for the later instantiation could not be the same as the warrant for the earlier one (the warrant for the perceptual belief). For the recipient, the putative agent of inference, did not have the perceptions. So the recipient cannot have the same warrant. Transference across persons would not preserve warrant for a step in an inference. I believe that this case illustrates a general principle: Inference and argument, as psychological processes that

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function to transfer and provide warrant for a conclusion, must occur within the psychology of the agent of the inference or argument.

Consider a mathematical argument. Suppose that an individual is warranted in believing a premise by thinking it through and understanding it. The individual's later reinvoking the premise to combine it with another content, or just with an inference rule, to take a new step, presupposes that the warrant for the reinvocation is the same as the original warrant. Otherwise, the individual would have to begin the argument again by establishing the premise. If purely preservative memory cannot be relied upon to preserve not only the content but the warrant for the earlier instantiation of the step, the individual cannot proceed with the argument. If the individual only had a capacity that preserved content from some previous person's thought, warrant could not be preserved from the earlier instantiation. For the content had been warranted by the other person's thinking through the premise, not by any thinking-through by the agent of the inference. Any warrant the agent may have would not be a preservation of the warrant for the original instantiation of content. It would be new warrant. So he would be starting the argument anew.

The warrant for re-invoking a content in an inference must be presupposed to be the same as the warrant for establishing that content in the argument. This is a constitutive feature of inference inasmuch as it functions in support of a conclusion. In supporting a conclusion, an agent can apply a rule to a step only on the presupposition that the step has not suffered some shift in epistemic status. Being a step in an inference in support of a conclusion constitutively presupposes constancy of content and warrant through the argument. Constancy is possible only through use of purely preservative memory with its presupposition of identity of the agent of the inference through the argument. I will elaborate this point in more depth in section 10.

Of course, mathematicians accept lemmas from others, even if the recipient has not thought through the proof. And there is simple acceptance of the word of others in less mathematical domains.¹⁴ In both cases the recipient's warrant for acceptance will never be the same as the original prover's or informant's warrant for the lemma, if the recipient relies on the source. Dependence on another forces a difference in the warrant had by the dependent recipient(s) from that had by the ultimate source.¹⁵ The recipient is warranted through interlocution. The source is not. Transitions across persons through commu-

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nication do not have the same epistemic status and thus cannot be preservations of steps in an inference or argument.

The point applies to practical inferences. Suppose that one wants to see the Vermeer paintings again, but wants time to cross the park and hear some Beethoven quartets at Lincoln Center. The reasoning weighs the importance of the two aims, reviews information on how long things take to do, and so on. One's argument must preserve over time—through the reasoning—the contents of and warrants for one's goals, values, and beliefs. If one lacked a capacity to rely on earlier instantiations of content as one's own—and as backed by warrants for one's own goals, values, and beliefs—one could not carry out practical reasoning. The reasoning is carried out to meet the agent's needs, aims, and values. If the contents that the agent preserves may or may not be from someone else's psychology, norms governing practical reasoning will make no sense. The autonomy of the agent in making a decision will be undermined. Practical norms are geared to fulfilling the agent's needs, goals, and values, as his own. The inferential norms presuppose that the agent of practical reasoning is the same through the reasoning.

To summarize our sketch: Theoretical and practical inference necessarily depend on a presupposition that a step invoked earlier can be reinvoked with unchanged warrant when it is to be combined with another step or just with an inference rule. Inference aimed at supporting a conclusion constitutively presupposes that the step's epistemic or practical warrant has not changed between initial instantiation and re-invoications. Purely preservative memory carries this presupposition. Its presupposition that the agent of an earlier inferential step is the same as that of the later use of the step is necessary to its role in explaining inference. If there were no explanatorily relevant presupposition that the author of the previous instantiation of a content is the same as the agent of inference, the later invocation would be a new beginning, since its warrant could not be presupposed to be the same as the warrant that backed the initial instantiation. In the practical case, it could not be presupposed that the agent was acting on his own needs, aims, and values. From the point of view of carrying out the inference, the agent would, in effect, have to (re)claim the needs, aims, and values for himself. The new instantiation would not preserve the step. It would require its own warrant. In beings whose representational transactions take time, purely preservative memory is necessary for these presuppositions. It is necessary to the explanation of inference, in both theoret-

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ical and practical domains, through its presupposition of a single agent of inference over time.¹⁶

5.

I have argued that *de se* forms and applications must be preserved in memory as a condition on the possibility of intentional practical agency and perception. *De se* presumptions are clearly derivable from the presuppositions that I have argued are associated with inference.

De se forms and presumptions mark a competence in the individual. Use and competence entails a capacity for veridical application and presumption in appropriate conditions. *Veridical application of a de se memory-form* is successful coordination with a past veridical application of a *de se* form: the memory application connects with a past application by the same agent in such a way as to be immediately sensitive to the agent's needs, and aims. An individual could not have *de se* forms in memory if they did not mark an explanatorily relevant ability of the individual to maintain (or index) his perspective—in the relevant non-meta-theoretic way—through intentional agency, perceptual use, or inference. Similarly, an individual's exercising any sort of memory, including purely preservative memory, requires a core of veridical *de se* presumptions. *Veridical de se presumption* in exercises of memory is connection of a memory with a past psychological state of the rememberer in the service of the individual's perspective, needs, and aims. So the presence of memory competencies with *de se* form and presumption entails competence for veridical applications of *de se* forms and veridical *de se* presumptions.

What are the veridicality requirements on having a memory competence with *de se* forms or presumptions? The adage that error is intelligible only against a background of veridicality seems to me correct, but too vague to be more than a general guide. Most representational competencies are normally reliable. But there are exceptions. Some states' representational content is fixed by relations between the individual and what are in fact the content's referents, even though the competence associated with the state is *not* reliable in normal circumstances, that is, in circumstances in which it was individuated. A rabbit may represent a moving figure as a predator, even though *normally* such representations are nonveridical. The rabbit's panicky trips down the hole are normally unnecessary. It remains possible that the rabbit's representational state has the content *predator*. The content is fixed

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partly by its role in explaining rabbits' relatively few but crucial successes with respect to predators.

De se or egocentric indexes are very different from the representation *predator*. *Predator* is applied in perceptually identificatory ways. It is subject to brute errors of illusion. *De se* elements do not identify an entity via perceptual categories at all. Applications of *de se* elements do not always depend on being guided by perceptions and are not always subject to identificatory error. They depend merely on the individual's capacity to act out of immediate sensitivity to its own perspective, needs, and aims. That is part of what it is to be an individual agent.

An individual's *having de se* memory competencies requires having an explanatorily relevant competence to coordinate his perceptions, needs, aims, acts over time. This competence is individuated by reference to at least an evolutionary background of veridical applications.

An individual's *exercising* such competencies requires more. Such exercise is fallible. But unlike applying a representation like *predator*, exercise of these competencies requires a core of veridical applications *in the individual's own life*. To have any career as a person or an agent with a psychology, the individual must hold together over time representational transactions in such a way as to make *de se* applications or presumptions veridical. And he must do so in a way that is relevant to explaining his psychology. If there were no core of explanatorily relevant instances of an individual's holding his *de se* perceptions *veridically* in *de se* memory for his use, controlling his agency through veridically tracking his *de se* intention to its putative exercise, preserving steps in inferences through memories whose *de se* presumptions are veridical, the individual could not exercise these competencies. The individual could not exercise memory with *de se* form and presumptions. Hence, the individual would not be an agent with a career of agency. Veridical *de se* applications and presumptions entail individual identity over time.

The fact that the exercise of *de se* memory presupposes sameness of individual over time is grounded in the fact that exercise of memory with *de se* forms and presumptions is *individuated* by reference to the individual who has the memories. The individual's role in the individuation of exercising memory (and of other psychologically fundamental competencies) underlies the fact that exercising it requires veridical *de se* application and presumption. Veridical *de se* application and presumption require retention of past psychological material from the individual who exercises memory. The center of this system of individ-

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uation lies in individual agency deriving from the individual's perspective, functions, needs, and aims. I touched on this point in section 3 and will return to it in section 11.

Veridical, explanatorily relevant applications are essential to exercising memory with *de se* forms. But numerical dominance of veridical memories is never fundamental in determining the presence or absence of a competence, or whether it is exercised. An individual might be born with innate capacities for perception and inference, but be obliterated before exercising memory in their service. Dementias make memory unreliable; *de se* forms might remain. Pathologies of loss can be laid aside. They presuppose a competence that is undermined. We can imagine a competence intact but statistically unreliable on other grounds. A being could have nonveridical experiential memories that outnumber veridical ones. Still, there must be *explanatorily relevant* veridical applications of *de se* memories as the individual lives life, if he is to engage in intentional agency, perception, or inference. To be an agent with a psychology—whether a pre-intentional, intentional, or inferring agent—the individual must veridically connect *de se* applications at different times to his own past, and must exercise purely preservative memory in ways that veridically fulfill *de se* presumptions and same-agent presuppositions of such memory.

Let me summarize the reasoning that I have been developing: A necessary condition for being a person, or other agent with a psychology, is to have one or more of the following competencies: intentional agency, pre-intentional agency involved in use of perception, inference. These competencies constitutively involve memory. The relevant types of memory must have *de se* forms or presumptions. *Exercising* one or more of these competencies, and attendant types of memory, is necessary for living the life of a person, or other agent with a psychology. Exercise of memory with *de se* forms or presumptions necessarily requires an explanatorily relevant core of *veridical* applications of *de se* memory forms and *veridical de se* presumptions. That is, applications of such forms must coordinate instantiations of psychological states within the same individual to preserve the individual's perspective, needs, aims over time. To live a life as a person or other agent with a psychology—to exercise any of these three types of agency—the individual must successfully coordinate his acts and veridically coordinate his act-representations in ways that are immediately sensitive to his perspective, needs, and aims. This coordination must extend over time and be explanatorily relevant. So to exercise any of these types of

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agency, the individual must engage in an explanatorily relevant core of veridical *de se* applications of psychological contents, and must carry veridical *de se* presumptions associated with purely preservative memories. An individual cannot be an agent with a psychology unless he acts from his perceptual perspective, with immediate sensitivity to his needs and aims. Agents with propositional attitudes must veridically retain intentions, particularly their *de se* forms, from their formation to their realization in activity, and must preserve and transfer warrant of inferential steps in purely preservative memory. These veridical exercises of memory must include veridical applications of *de se* forms, or must carry veridical *de se* presumptions. Veridical applications of *de se* forms and veridical *de se* presumptions require sameness of individual over time. They require that the memory retain past psychological material from the same individual as the individual who exercises the memory. The nature and individuation conditions for the exercise of the relevant memories, then, requires an explanatorily relevant core of veridical applications of *de se* memory-forms and veridical *de se* presumptions. Individuation is the most basic form of explication of the nature and exercise of a psychological competence. So the most basic (correct) explication of what it is to exercise these sorts of agency and memory must make reference to the individual agent as identical over time. More materially, the nature of the exercise of these sorts of agency and memory presupposes agent identity over time. So there is a reciprocal relation between the individuation and nature of individual agents with psychologies, including persons, and the individuation and nature of psychological activities that are essential to being such agents.

Memory, with its *de se* presumptions and its presuppositions of trans-temporal agent identity—deriving from the individuation of exercises of basic sorts of agency—is a condition on the possibility of an individual's having a representational mind.

6.

Now to personal identity. Locke is commonly read as having attempted to analyze the concept of personal identity partly in terms of the concept of memory.¹⁷ Butler complained that such an analysis is circular, because memory presupposes personal identity and is not intelligible independently of it.¹⁸ Shoemaker proposed a way of answering Butler. Parfit followed this proposal with a similar one. They appealed to a

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notion, *quasi-memory*, that applies to an ability that is like memory in certain respects but that does not presuppose personal identity. To anticipate my conclusion, I think that this notion cannot contribute to an analysis of personal identity. I think that the notion of quasi-memory is coherent, and that Shoemaker's introduction of it was valuable. The notion cannot, however, serve its intended purpose. This is because quasi-memory is both explanatorily and metaphysically parasitic on memory after all. So Butler cannot be answered by appealing to the notion. I think that by reflecting on why the reductions fail, one can gain insight into important features of the nature of persons.

Shoemaker explains quasi-memory as a kind of knowledge of a past event involving a causal correspondence between an individual's present cognitive state and a past cognitive state about the event. He writes: "although otherwise just like that which exists in memory, [the correspondence] does not necessarily involve that past state's having been a state of the very same person who subsequently has the knowledge." Thus, a quasi-memory is a state that represents an event. It is causally derived from and retains information from an earlier representation, say a perception of the event. The earlier perception might have been a perception by the same person. Shoemaker holds that then there would be both a memory and a quasi-memory. The earlier perception might have been another person's perception. Then there would be quasi-memory but no memory. The causal derivation in the latter case is to be as close to that involved in ordinary memory as is possible, consistent with its being between different people. Shoemaker holds that memory is a "special case" of quasi-memory.¹⁹

Parfit introduces what may seem to be the same concept as follows:

- I have an accurate quasi-memory of a past experience if
- (1) I seem to remember having an experience,
 - (2) *someone* did have this experience,
- and
- (3) my apparent memory is causally dependent, in the right kind of way, on that past experience.

Parfit remarks, "ordinary memories are a sub-class of quasi-memories. They are quasi-memories of our own past experiences."²⁰

What is "the right kind of way"? Parfit imagines that a surgeon changes brain states that underlie memory traces. The surgeon connects these changes with brain states in another person that underlie the other person's experience. Causal continuity is supposed to pre-

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serve information and phenomenal vividness from the prior experience, by the grace of the surgeon. This causal route corresponds to no natural competence. It is friendlier to Parfit's purposes to imagine more natural ways in which persons might be connected. I shall return to some of these.

Shoemaker and Parfit's explications of "quasi-memory" differ. Shoemaker seems to represent a person's quasi-memory as neutral on whether the quasi-remembered experience is the person's own. He writes,

One way of characterizing the difference between quasi-remembering and remembering is by saying that the former is subject to a weaker previous awareness condition than the latter. Whereas someone's claim to remember a past event implies that he himself was aware of the event at the time of its occurrence, the claim to quasi-remember a past event implies only that someone or other was aware of it.²¹

This characterization seems to entail (by "only") that in having a quasi-memory that derives from another's experience, one does not *thereby* err in taking the quasi-remembered experience as one's own. He writes,

Suppose that at time t_1 , a person, call him A, does action X and has while doing it a quasi-memory from the inside of the immediately previous occurrence of the doing of action X. A's having this quasi-memory of the doing of X is of course compatible with X's having been done by someone other than himself.²²

Shoemaker writes of A's having a quasi-memory of *the doing* of X, not of *doing* X.

Shoemaker claims that memory is a special case of quasi-memory in that it requires that the previous experience be that of the same person, whereas quasi-memory lacks this requirement. This claim is not ideally specific. It surely means that to be a memory the memory must connect to a state of the same person, whereas to be a quasi-memory the quasi-memory can connect to a state of either the same or a different person. Shoemaker's remarks quoted earlier seem to entail a further difference. Quasi-memories lack the commitment, present in the *de se* representational content of experiential memories, that the previous states were the individual's own.

By contrast, Parfit's condition (1) takes a person's quasi-memory to involve a seeming memory of having the prior experience. This entails that in having a quasi-memory that derives from another person's experience—lacking knowledge of one's condition, and taking the

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quasi-memory at face value—one will be mistaken in taking the experience to have been one's own.

On Parfit's characterization, memory is a special case of quasi-memory in a different sense. Both memory and quasi-memory involve first-person presumptions—they both *present the past experience as one's own*. The difference is merely that to be a memory, the past experience must *be* one's own, whereas to be a quasi-memory, it need not be.

The difference between the two characterizations turns on a difference in veridicality condition marked by a difference in representational form.²³ Parfit's characterization builds *de se* form into having a quasi-memory. Shoemaker's does not. Neither philosopher gives serious attention to the representational form of what they characterize as "quasi-memory." I believe that understanding such form is crucial to making progress on the philosophical issues.

7.

The concept of quasi-memory was introduced to aid a reductive analysis of the concept of personal identity. The analysis must represent quasi-memory as an ability that is explanatorily independent from memory. Attributions of memory presuppose that the remembered material comes from the same individual as the rememberer. If quasi-memory were metaphysically or explanatorily parasitic on memory, with its presuppositions about individual identity over time, use of a concept of quasi-memory to analyze the concept of personal identity would be circular.

Such circularity need not be definitional. There are definitionally noncircular concepts of quasi-memory that seem to apply to possible cases. *Definitional circularity* does not even follow from the presence of *de se* elements in the concept of quasi-memory. For if, as on Parfit's definition, applications of such elements need not be veridical, attributions of quasi-memory would not definitionally rely on the truth of propositions about individual identity.

But if the notion of quasi-memory could figure in *explanation* only by presupposing an explanatory function for memory, or only by otherwise presupposing facts about individual identity, the notion could yield no reduction. Call these sorts of presupposition *explanatory circularity*. I will argue that reliance on the notion of quasi-memory in psychological explanation or in reductive analyses of personal identity is involved in explanatory circularity. Thus, I will object to the putative

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explanatory independence of the concept of quasi-memory from the concept of memory—hence to reductive explanation of personal identity in terms of quasi-memory, or in terms of causal sequences of any agent-neutral psychological states.

I shall argue in this section that reductive use of Parfit's conception of quasi-memory, having a *de se* element in its logical form, is involved in explanatory circularity. Then in sections 8–10 I turn to invocations of quasi-memory conceived as lacking *de se* elements.

I begin with background assumptions. I remarked that Parfit illustrates quasi-memory by reference to surgical implants. Such cases seem less forceful for the reductionist case than naturally occurring quasi-memories. They cannot yield knowledge;²⁴ they disrupt functional continuities; and so on. I assume quasi-memories that retain the pasts of other individuals, with etiologies that are normal for the species. For simplicity, I assume that only one other person is involved. I suppose that the person who has quasi-memories cannot distinguish cases that go back to the other person from cases in which the quasi-memory goes back to his own past. At least, the person cannot do so internally and immediately, as part of the quasi-memory competence. If the two cases were differently marked, memory could provide continuity, and quasi-memory (where it differed) might be merely a source of further information. Supposing immediate distinguishability would be at odds with the aims of the original proposals.

Let us assume with Parfit that quasi-memories have *de se* representational form. When they derive from the person's own past, the *de se* form is applied veridically. These quasi-memories, we may suppose, are also memories. When they derive from the other person's past, the *de se* form occurs nonveridically. These quasi-memories are not memories.

The representational form of a psychological state does not get to be what it is in the abstract. Representational forms reflect competencies whose presence grounds representational norms. Such competencies are not explanatorily idle. *De se* memory-forms mark an ability to hold together psychological states as immediately relevant to the perspective, needs, and aims of the individual. Psychological explanation keys on psychological kinds typed in terms of such forms. The form of a quasi-memory can be *de se* only inasmuch as the individual is competent in connecting present representations specifically to his own past. Only relative to such a capacity could *de se* applications be nonveridical.

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Error presupposes a background of norm-setting competence for veridicality.²⁵

As argued in section 5, a psychological state's having *de se* form marks it as being part of an explanatory core of competencies that involve veridical *de se* applications and presumptions. An exercised state cannot be individuated as having *de se* form unless there is a core of veridical applications and presumptions by the individual that figure in core explanations of the individual's activity in coordinating events and activities with his own perspective, needs, and aims.

Relevant exercises of *de se* competencies form a core for *explaining* specifically the unity of an individual's psychological life, *including unity over time*. *De se* indexes mark the practical, perceptual, and spatio-temporal origin of the subject's perspective, needs, aims, and activities over time. If the relevant states played no such explanatory role, there would be no sense in which the individual is making an error in exercising quasi-memory. And there would be no basis for attributing *de se* form to his experiential quasi-memories.

We are assuming that the individual cannot through the competence coordinate quasi-memories with his own past any better than with the other's past. So the states do not count as *de se* through any competence for immediate discrimination of his past from another's. As argued in section 5, statistical considerations are not basic. Veridical applications and presumptions need not predominate at a given time. The states count as *de se* through providing a basis for explanation of individual agency and for grounding norms for such agency. That is what *de se* markings of psychological states are *for* in scientific and ordinary explanations. Attributing such states presupposes that the individual can coordinate present states with his own past. The exercise of the competence is *individuated* by reference to its relations to the individual.²⁶

Consequently, a reductive explanation of personal identity that appealed to quasi-memory with *de se* form would presuppose, in the individuation of exercises of quasi-memory, facts about identity of individual agent over time. So it would be involved in explanatory circularity.²⁷

This argument leaves open the possibility that in a reductive explanation of personal identity one could appeal to a notion of quasi-memory that does not involve *de se* logical form. Then one might hope to explain *de se* attributions in more basic terms that do not presuppose facts about individual identity in the individuation conditions of the

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psychological states that are attributed. I turn now to the task of showing that this possibility is merely apparent.

8.

Is it coherent to take quasi-memory as explanatorily fundamental, conceived as a capacity without *de se* form or presuppositions about agent identity over time, and attributed without any explanatory reliance on memory, with its same-agent condition? Presentations of the past, on such a view, do not support *de se* or first-person presumptions because they do not connect to the individual's own past through any psychological competence that has an explanatory role. Such a being would lack memory properly so called. The quasi-memories stemming from his own past do not ground norms for correctness and are not a distinctive explanatory kind.

Let us begin with intentional practical agency. Such intentional agency is impossible if a being has only quasi-memories in the sense just discussed. Intentional practical agency is necessarily dependent on having intentions-to and wants-to. As argued in section 2, these states are necessarily *de se*. Having them necessarily depends on having memories that track their content *de se*. Hence having them presupposes agent identity over time. To act as an intentional agent is to have intentions whose point and efficacy are to be explained in terms of the agent's coordinating through memory his intentions with acts flowing from those very intentions, while being sensitive to the immediate relevance of this coordination to the agent's own aims. The intentions, memories, and act-representations are *de se* inasmuch as they involve a pattern of acts and competencies that track relevance to agent aims in the sequence from intention to execution. The *de se* forms must be veridically applied in normal exercises of intentional practical agency. In conceptually mature persons, informed reflection on these competencies, and exercises of them, yields *de se* and first-person attributions. So they carry *de se* and first-person presumptions. Intentional practical agency would be impossible if a being had only quasi-memories lacking *de se* forms and lacking any explanatorily relevant, veridical application of *de se* forms in memory.²⁸

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9.

I return to perception and use. In each perceiver at least some perceptions are necessarily *de se*. The representational content of a perception is fixed not only by patterns of causal relations between the perceptual system and types of objects in the world. The content necessarily also depends on repeatable perceptual abilities' being associated with use.

A minimal notion of use is repeated exercise of perceptual competencies. This capacity requires retention of innate and learned representations and a capacity to relate instances of such representations at different times to one another in such a way as to mark perceiver-perspective and serve the perceiver's own needs. This amounts to a minimal competence in *de se* memory.

As argued in section 3, more substantial notions of use are required to account for the individuation of perceptual content. Use must include agency in fulfilling the needs and aims of the perceiver.²⁹ Such agency requires an explanatorily relevant competence to connect perceptions to subsequent acts in ways that are immediately sensitive to the individual's perceptual perspective, needs, aims, and activity. Again, the connections must have *de se* form.

Explanation of a psychological system in terms of quasi-memories that *lacked de se* form would be incompatible with both perception and agency that uses perception. An explanation that did not attribute, as explanatorily central, immediate sensitivities that coordinate the individual's needs, aims, and activity with its perspective in perception could not attribute even nonintentional individual agency. Individual agency deriving from perception requires a capacity to coordinate perceptions with acts that use the individual's perceptual perspective and that maintain, over at least short periods of time, the individual's motivational, and action-representational orientation through the act. So primitive individual agency deriving from perception requires veridical applications of *de se* memory-forms—memory that presupposes agent identity over time. In higher animals the agency that uses perceptual content includes intentional agency. But the basic pattern is necessary for even the most primitive sorts of pre-intentional agency in perceptual use.

To simplify the argument: Having perceptual representational content requires having uses for it. The connection between content and use must be forged through a capacity to preserve content over time for reuse *for* the perceiver. Such use requires that the perceptual base of

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representational content, the psychological states that figure in use of it, and the exercises of memory that connect them, all be *de se*. The states must be immediately sensitive to the individual's motivations and perspective; and the *de se* elements must be systematically connected over time in the psychology of the perceiver. Individuation of such uses requires veridical applications of *de se* memory-forms. Even those memories that are not themselves *de se* must be associated with memories with veridical *de se* and first-person *presumptions* and with *presuppositions* of perceiver-user identity over time. An explanation that relied on quasi-memory with no explanatory reliance on veridical *de se* applications and presumptions in exercises of memory could attribute no perceptions or uses. Perception and perceptual use would be impossible without veridical, explanatorily relevant applications of *de se* memory-forms that presuppose agent identity over time. For persons, they presuppose personal identity over time.

10.

In this section I elaborate the argument sketched in section 4—the argument that a psychological system that does not presuppose agent identity cannot carry out inference.

I assume, first, that inference requires an ability to invoke representational contents as steps, relying over time on the same warrant that backed these steps when they were first instantiated. This is what it is to be a step in an inference or argument construed as psychological process, where the process is aimed at providing warrant for a conclusion.³⁰ Part of what it is to carry out an inference is to be able to rely on representational content, logical form, and logical inference rules to make transitions, without having to acquire new warrant for steps already taken when they are invoked later. Warrants may change, but then one is not simply relying on an earlier step. One is reconstituting the inference or argument.

I assume, second, that epistemic norms and warrant attach to the agent of the inference. Psychological states are also spoken of as warranted, but they are warranted for individuals. The individual that carries out a step in an inference is the agent who is warranted or unwarranted in relying on a step or in making a transition between steps.

I assume, third, that epistemic norms for inference, and the warrant that an agent has in a step in an inference, must be explained in terms of epistemically relevant capacities, acts, experiences, or states of the

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agent of the inference. It is his agency that is evaluated under the norms. So his capacities, acts, and states are the relevant ones for explaining fulfillment of them.³¹

Consider an individual engaging in a putative argument. Suppose that his activity is to be explained without reference to purely preservative memory. The individual's retentive activity is to be explained only in terms of quasi-memory, which lacks presuppositions about individual identity over time. Consider a point in the putative argument at which the individual must rely on a step taken earlier, with its warrant, in order to use the step's content in an inference.

Suppose that the step was earlier warranted for another individual by his having perceptions. By the second premise, we ask what warrant the agent of the inference has for relying on the earlier-instantiated content. The earlier instantiation was warranted through the having of perceptions. The agent of inference did not have the perceptions. So by the third premise, whatever warrant the individual using quasi-memory might have for relying on the content cannot be the same as the warrant for the original instantiation of the content. The agent of the inference cannot be normatively evaluated in terms of experiences that he did not have. His warrant must derive from his own states or capacities. By the first premise, since the individual's re-instantiation of the content cannot preserve the original warrant for relying on the content, the individual lacks an ability to rely on the earlier instantiation of the content as a step in the putative inference. The individual needs new warrant and needs to start an argument anew.

Now suppose that the individual relying on quasi-memory to take the putative step *did* have the relevant perceptions. By hypothesis, the appeal to quasi-memory in explaining the putative inference by the individual does not presuppose that the individual is the same. The explanation does not attribute exercise of a competence that presupposes individual identity. So the epistemic and psychological functions of quasi-memory cannot differ from the case in which the individual who had the relevant perceptions is different. By hypothesis, the individual's quasi-memory is, from the point of view of explanation, neutral as to whether its presentations derive from the same individual's past or another's past. So by the same argument as before, even if the quasi-memory happens to derive from the past of the individual who exercises quasi-memory, the individual cannot be treated, in the psychological explanation, as preserving the warrant that derives from the perceptions. Quasi-memory may yield a warrant for relying on the con-

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tent. But the individual's psychology cannot be explained as preserving the perceptual warrant. So the individual's activity cannot be explained, in these terms, as carrying out an inference.

The argument claims that taking the warrant of a step to remain constant between the time it is first instantiated and the time it is relied upon in an inference presupposes that the same individual relies on the step at both times.

The reductionist might respond as follows. The claim is plausible when only ordinary situations are considered. It is less plausible when applied to fission examples conceived to occur naturally. Suppose two cases. In one, *A*'s brain is divided so that two people, *B* and *C*, result. (We grant this fiction.) In the other, a physical duplicate of *A* (called "*D*") loses one brain hemisphere; so there is no fission. *D*'s brain activity after the loss duplicates *B*'s. Just before the loss, *D* starts a process of deductive reasoning and completes it soon after the loss. *A* begins a parallel process of reasoning. After fission, *B* thinks thoughts analogous to the thoughts *D* uses to complete his own (*D*'s) deduction. The beliefs that occur in the two sequences (*A*–*B*, before and after fission, and *D*, before and after the hemisphere loss) and how they are causally related in the brain are the same. It would be strange to hold that *D* is warranted in the conclusion he draws and that *B* is not. It would be strange to hold that *D* carried out an inference but *B* did not. So the claim that argument or inference presupposes sameness of person must be wrong.

Before answering this line, I make two points. First, if *B* is a person, *B* has perception and agency. By the arguments of sections 2–3 and 7–9, in counting *B* a person the reductionist is involved in explanatory circularity. Second, as far as the argument regarding inference goes, *B* can be warranted in inferring conclusions from contents initially warranted by quasi-memory. Such inferences would be intrapersonal. They would rely on purely preservative memory proper, preserving the content and warrant of a step initially warranted by quasi-memory. Quasi-memory plays no role in explaining the *transitions* in such inferences. (Cf. also note 30.)

The questions at issue are precisely these: Can *B* make the same deductive inference that *D* makes after hemisphere loss, with the same type of warrants at each step? Can appeal to quasi-memory explain *B*'s making a "cross-personal" inference, inferring a conclusion from a premise supported only by the warrant that *A* had for initially instantiating the premise? Underlying these: Can an individual's making infer-

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ences that take time be explained without relying on purely preservative memory, with its presuppositions about agent identity over time?

The answers to these questions remain negative. Suppose that *D* had a perceptual belief before hemisphere loss. Afterwards, *D* makes a deductive inference from the content of that belief. *A* is warranted in a parallel perceptual belief before fission. Suppose that *B* acquires type-identical content through quasi-memory retaining *A*'s perceptual belief. Can *B* rely on a re-instantiation of *A*'s content, without new warrant, to infer the conclusion?

To review the argument that *B* cannot, by using quasi-memory instead of memory, draw an inference purely from a step instantiated by *A*: Like *D*, *A*'s belief in the content is warranted through having perceptions. *D* has purely preservative memory and so can use it to preserve his perceptual warrant for the initial step when later he uses it in inference. Suppose that *B* is to carry out an inference from the step that *A* instantiated. *B* is the agent of the putative inference. So by the second premise, relevant epistemic norms apply to *B*. *B*'s warrant is what is relevant to assessing *B*'s inference and determining what counts as a step. *A*'s belief (like *D*'s) is warranted through his having perceptions. By the third premise, since *B* did not have the perceptions, *B*'s warrant, if any, must be explained in terms of some other act, experience, capacity, or state of *B*'s. Warrant could come from *B*'s quasi-memory of *A*'s perceptions. *B*'s warrant cannot come *purely* from *A*'s perceptions—since *B* did not have them. By the first premise, *B* cannot infer from the step established by *A* and so cannot infer with the same warrant as *D*. *B*'s quasi-memory constitutes a new epistemic start in his reasoning (even if the beginning is warranted).

The argument applies even if quasi-memory happens to provide information from *B*'s past—since explanations in terms of quasi-memory cannot rely on this fact. If the explanation of *B*'s mental processes relies on agent-neutral quasi-memory while excluding memory proper, no trans-temporal inference is attributable to *B*.

What of the three premises? The first premise is an evident point about what it is to be a step in an inference, where inference is construed as a psychological process that provides or transfers warrant. I see nothing in the reductionist programs to motivate objection to it. As for the second premise, given that there is an agent of the inference, there is an epistemically fundamental question whether the agent is warranted at stages of the inference. One might deny that individuals

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are agents of inference, holding that some composite is the “agent.” I make no objection here to allowing larger units, such as corporations or even swarms, to be agents of inference. To block the argument along this line, however, one must *deny* that individuals are agents of inferences. Such a denial would undermine a reductive account of personal identity. Reductionism must preserve fundamental features of personhood, including agency in inference, in its account. Such a denial is in any case refuted empirically.

The third premise seems as solid as the other two. An agent can fulfill norms of inference and be epistemically warranted only through his own states and capacities, together perhaps with their relations to a subject matter. Internalist and externalist epistemologies accept this principle, or relevantly similar principles that could be used in analogous arguments.

The argument rests on independently motivated principles about individuation of inference steps, individuation of warrant, and the relation between norms and abilities to fulfill them.

Resistance can easily feed on unclarity about what is at issue. Let me address this matter.

Whether *B* is warranted in accepting the same content that *A* is warranted in accepting is not at issue. If *B* is a person, *B* can, as far as the argument goes, be warranted in accepting type-identical content through quasi-memory that connects to the same events that *A* perceived. *A*'s warrant is having perceptions. *B*'s is having quasi-memory. If quasi-memory were counted a type of perception, *A* and *B*'s warrants would still differ. All perceptions have different causal relations to a subject matter; these also have different temporal distances and degrees of reliability.

Whether *B* can deduce from the same content the same conclusion that *D* deduces is not at issue. Perhaps *B* can deduce a conclusion type-identical with *D*'s from content that is type-identical with *D*'s. *B* can be warranted in establishing the content by quasi-memory. *B* can use ordinary purely preservative memory to draw the same conclusion that *D* does. Such an inference is not cross-personal and has a different warrant for its initial step from *D*'s warrant, or *A*'s.

Whether *B*'s quasi-memory can “*preserve*” *A*'s content is also not at issue. There is a sense in which *A*'s content can be “preserved” in *B*'s quasi-memory. Quasi-memory can preserve the content of *B*'s perceptions in the sense that it can produce a causally dependent re-instantiation of type-identical content.³² Quasi-memory can depend on *A*'s

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being warranted for its being warranted. What it cannot preserve is *A*'s warrant for the step. Being warranted in a belief or step lies in fulfilling norms. One fulfills norms by doing certain things, having certain abilities, being in certain states. *A* has warrant by having certain perceptions. Not having had the perceptions, *B* must fulfill norms of epistemic warrant in some other way—perhaps by having quasi-memory. If quasi-memory is warranted, it must *produce* warrant for *B*. In fact, quasi-memory cannot preserve the warrant associated with the having of perceptions even if *B* did happen to have them, since quasi-memory is neutral as to who had them. Quasi-memory is, from the point of view of fulfilling epistemic norms by epistemic agents, a source of new information and new warrant—not a genuinely preservative capacity at all. I shall return to this point.

What is at issue is whether quasi-memory can effect and explain cross-personal warrant preservation without relying on purely preservative memory with its same-agent condition. I have argued that it cannot, and hence that it cannot explain inference. An agent that had quasi-memory but lacked memory proper could not carry out inferences.

The argument generalizes from perception to the other types of warrant—thinking through a content with understanding, interlocution, conclusions inferred from empirical or mathematical premises, commitment to practical goals based on practical reasoning from values, and so on.³³

Genuine purely preservative memory, like all memory, presupposes that its content came from the individual who relies on purely preservative memory.³⁴ If an explanation tried to get by with quasi-memory, all presentations of content in quasi-memory would have to be treated as explanatorily neutral as to whether they preserved a content from the individual's own past or from another individual's past. Then the individual cannot be treated as reinvoking a content and proceeding on the same warrant that supported it earlier. From the point of view of explanation, this is to treat each quasi-remembered instantiation of content as new to an argument. Every putative re-invocation of a step at a later time would have the formal and epistemic status of a new premise, not a re-invocation or preservation of a step already warranted. No instantiation of content could be treated as the preservation of warrant earned earlier. So no inference in an argument meant to provide warrant for a conclusion would be possible.³⁵

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To summarize: It is essential to inference, as a psychological process that contributes to providing warrant for a conclusion, that steps maintain the same warrant through the argument or inference over time. Warrant in the activity of inference necessarily attaches to the agent of inference. Warrant that attaches to an agent must be explained in terms of the agent's acts or states. A putative explanation of inference that confined itself to quasi-memory with no presuppositions about individual identity over time cannot treat warrant as preserved in steps used in inference after the steps are first established. For quasi-memory cannot presuppose that the acts or states that first warranted a step were those of the agent of the inference. So quasi-memory cannot help explain an individual's activity as involving argument or inference.

Descartes featured maintaining an argument in a single insight.³⁶ Can "immediate insight" replace temporally sequential reasoning in explanation? I think not. To be capable of immediate insight, one must have a standing competence for inference, which involves an ability to re-invoke steps and reapply inference rules in reasoning. We are necessarily discursive reasoners.³⁷

The point about inference has an analogue that applies to pre-inferential representational processes. All use of representational content requires purely preservative memory. This is because purely preservative memory is necessary for explaining the re-applicability of any representational competence. Such explanation must appeal to representations and information as already present—as not new for the individual.³⁸ Quasi-memory cannot do this. An individual that lacked preservative competencies—with their *de se* presumptions—would have no mind at all. Each putative representational event would be a new beginning for the individual. In a being with only quasi-memories, without explanatorily relevant presuppositions about individual identity over time, there would be no repository of information or repeatable representational competencies. Not only would such a being not be a person. It could not represent anything at all.

Quasi-memory's inability to help explain inference, or lower-level preservation of representational competencies, lies in its nature. In psychological explanation, quasi-memory is more like perception than memory.³⁹ Quasi-memory is formally a source of *new information* to the individual. It yields noninferential information about the past. Even when information happens to come from the individual's own past, it is psychologically new for the individual—since it is not associated with an explanatorily relevant competence to retrieve information that

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comes immediately from the individual's own past. As with perception, each instance of quasi-memory carries *new warrant*. So quasi-memory cannot preserve warrant for the individual who relies upon it. In the absence of purely preservative memory proper, each instantiation of content would be a new beginning. Preservation of warrant and information over time is essential for inference, indeed for content. So in the absence of explanatorily relevant purely preservative memory proper, an individual cannot make inferences or have representational content.

Why is newness of information *relative to an individual's perspective* significant? The psychology and epistemology of inference concerns the agency of individuals. One must consider what the agency of inference is *for*. Since it is the agent's perspective, functions, needs, aims that govern use of representational content, what counts as new or preserved is dependent on the individual that is informed. Similarly, explanations of and norms for use of content are grounded in the activities, experiences, and competencies of the individual who is the agent of use.

These points about the role of memory in preserving information and warrant for an individual reflect on Shoemaker and Parfit's assumption that memory is a special case of quasi-memory. Quasi-memory is indeed defined by relaxing a condition on memory—the condition that the content is preserved from the rememberer's past. So in a sense the assumption is trivially true. The condition that is relaxed is, however, fundamental. Memory generally is not an original source of information for the individual. It preserves information. Purely preservative memory is not a new source of warrant and not even a *contextually* new source of information for the individual. Quasi-memory, construed as lacking presuppositions about individual identity, is formally a source of new information and warrant. Memory's function is to preserve.⁴⁰ Preservation for use *for* the perspective, functions, needs, aims, activities of individuals is fundamental in the individuation of psychological kinds and in the aims of psychological explanation. The claim that memory is a special case of quasi-memory is like a claim that fruits are special cases of animals, except that they are plants and their DNA is different.

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11.

I have argued that one cannot explain fundamental aspects of individual psychology if one invokes quasi-memory without explanatory reliance on memory with its same-agent condition. Absent explanatory appeal to memory, individuated in terms of success in holding an individual's past with his present, one cannot reasonably attribute intentional practical agency, perceptual content and its use, or inference. In this section I consider reductionist views more concretely.

The central tenet of Shoemaker's and Parfit's reductionisms is that the basic explanatory psychological notions do not presuppose individual identity over time. The basic explanatory notions are supposed to be person- and agent-neutral. The notion of an individual person or agent is to be explained in terms of continuities of states characterized agent-neutrally.

I believe that the arguments in earlier sections undermine this strategy. Being an agent with a psychology—whether a person or not—requires exercising psychological competencies supported by *de se* memories and memories with *de se* presumptions. The notion of an agent with a psychology is partly individuated in terms of such exercises. Reciprocally, such competencies and their exercises are partly individuated by reference to relations to their agents. Individuation of *de se* aspects of basic psychological acts and states is not agent-neutral.

An explanatory scheme that takes agent-neutral psychological notions as basic cannot recover the *de se* notions. The notion of being a nonbranching continuity or of beginning at a branch (in a fission case, for example) can *correspond to* distinctions among individuals. But such notions lack psychological explanatory power. If they had such power and if psychological states were individuated and explained in terms of them, explanatory circularity would be reinstated.⁴¹

Let us reconsider fission cases. Such cases are often taken to be the reductionist's strongest example. *A*'s brain is divided to allow two equally worthy continuants, *B* and *C*. *B* and *C* are in separate bodies closely matching *A*'s. Neither body more closely continues *A*'s than the other. I shall grant the fiction that two halves of *A*'s brain are each sufficient to guide and continue on from *A*'s life, equally well. Let us suppose that *A* ceases to exist at the time of the branching. *B* and *C* begin new lives. (*B* and *C* are not identical; *A* therefore cannot be identical to both; each has equal claim to be a good continuation of *A*; so *A* is identical to neither.) In the first moments of the lives of *B* and *C*, their quasi-

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memories of *A*'s past will vastly outnumber any memories they have of their own pasts. Their mental lives are largely derivative from *A*'s.

Inasmuch as *B* and *C* are regarded as individual agents with psychologies, the case silently presupposes that they exercise genuine memory capacities with *de se* forms or presumptions. These exercises must play an explanatory and norm-grounding role in understanding their agency. The quasi-memories, though initially in a majority, cannot play these explanatory or norm-grounding roles. So we have here the case discussed in section 7. The reductionist has not escaped explanatory circularity.⁴² I believe that fission cases constitute no ground at all to think that quasi-memory, as opposed to memory, is explanatorily fundamental.

Although they rarely are, fission cases could be elaborated to avoid presumption of *de se* explanatory memories, and presupposition of agent-identity. In such cases, there would be no individual agency. So they could not illustrate a reduction of individual agency to more fundamental terms. Since such cases correspond to no actual psychological kinds identified in psychological explanation—all of which presuppose kinds with *de se* elements—they cannot help an eliminationist who wishes to hold that individual agency, as a psychologically relevant phenomenon, is dispensable. Such a view of animal or human psychology is refuted empirically.

It might be tempting to infer that since the individual cannot distinguish cases where his memory-like presentations go back to his own past from cases where they do not, the individual must lack an explanatorily relevant memory competence. This inference might be especially tempting in examples where instances of the latter sort outnumber instances of the former.

The temptation must be resisted. Most competencies are subject to illusion that cannot be avoided purely from the inside. Statistical dominance is, as argued in section 5, not determinative in individuating a competence. Moreover, the temptation leads to incoherence. Being an agent with a psychology requires acting on a perspective to serve one's needs and aims. Such agency requires coordinating perspective, needs, aims, and acts over time by means of veridical *de se* applications of memory forms or veridical *de se* memory presumptions. Such coordination is individuated partly in terms of agent identity. Any *agent* in a fission case will engage in such coordination and agency. Imagine short-term memories serving acts on immediate needs. These will grow over time. Quasi-memories may be a rich source of partially misleading back-

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ground information. They cannot substitute for *de se*-presuming memories in explanations of agency.

One might press the reductionist case as follows: Imagine creatures that reproduce by fission. Quasi-memories of these creatures may go back indefinitely far in the chain of splittings. Or they may include just the history of the creature since it split off and the recent history of its most recent ancestor. Without auxiliary information, a creature cannot tell whether a quasi-memory presentation goes back to its own history or its ancestor's. These creatures do not care about the distinction. They have a term "remember*" translated "quasi-remember," but no separate term for remembering. Similarly, they have terms "I*" and "*de se**." *De se** contents are not *de se* contents. Yet they do much the same work. We can suppose that the cognitive dynamics in a sequence of mental states that consists of the mental career of the immediate ancestor of one of these creatures plus the mental career of that creature itself is the same as the sequence of mental states in the history of a single individual person or other agent.

I believe that this sort of response lives on under-description. The claim that *de se**-marked capacities enter into the same cognitive dynamics is mistaken. The role of *de se* form and presumption in memory goes deeper than language. Lack of a word for "I" or "remember" is not significant. Animals with *de se* capacities lack language. The role of *de se* elements goes deeper than caring. The issue is whether the individuals act from their own perspective coordinating with their own needs and aims. If they do, they exercise explanatorily relevant *de se* memories. Then reductionism falls into explanatory circularity in the way indicated in section 7. All the standard cases of fission are of this sort. They assume that the individuals involved are people. If there is no such set of activities, then these are not creatures with individual psychologies. They are incapable of psychologically based agency or perception, as opposed to reaction and sensation. Even the attribution of quasi-memory to them is incoherent. For these creatures lack the retentive and coordinating powers to have representational content. (Cf. notes 10 and 42, and section 3.)

I do not deny the possibility of cases in which the notion of an individual agent with a psychology is inapplicable. Such cases are not relevant to understanding actual psychologies. They are not relevant to giving an account of the identities of persons.

Explanatory kinds in psychology are entangled, in their individuation conditions, with the existence of individual agents. Reductionisms

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typically associated with Locke and Hume systematically underestimate this point. Exercises of *de se*-presuming competencies are individuated partly by reference to particular individuals, not merely to general tendencies and causal sequences of their instantiations. An account of cognitive dynamics that takes fundamental psychological explanation to make reference only to states that have forms and norms that are agent-neutral underestimates how deeply psychological kinds are bound up for their individuation with agent identity—with the perspectives, functions, needs, aims of individuals.

Full appreciation of this point requires detail about the way perceptual content and primitive, pre-intentional individual agency are (I think must be) explained and individuated in psychology. Space is insufficient for such detail here. I have, however, tried to evoke some of the ways in which individuation of primitive psychological states is bound up with the biologically basic needs and activities of individuals—eating, fighting, fleeing, navigating, reproducing, parenting. Perceptual content and primitive uses of it are individuated in terms of a system whose functions are grounded in biological needs and activities of individuals.

In the fission case, *B* and *C* have different bodies, needs, perceptual perspectives, and agency-ends from one another. It is easy to assume that they have common interests (and so on) with their ancestor *A*. Largely, they will. However, since they have different bodies from *A*, they have different perceptual perspectives, different defensive and nutritional needs, possibly different reproductive needs, from their common ancestor. Being an individual agent with a psychology requires having explanatorily relevant capacities to act on one's own functions, needs, aims, and perspective. These capacities must include memories with *de se* forms or presumptions. At the most primitive level of psychological explanation, the reductionisms underestimate the role of basic biological needs and functions of animal individuals in individuating psychological states.

Analogous points apply to higher-level psychological explanation. As argued in section 2, intentional agency requires explanatorily relevant capacities individuated in *de se* ways. Activity that is not explained in terms of psychological kinds that privilege the individual's perspective, needs, aims, values, would not be that of an individual agent, much less a person.

The idea that in persons there might be no explanatory role for psychological states individuated in such a way as to presume *de se* and first-

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person capacities—so that *de se** and *I** forms take their place—is unacceptable on its face. Being a person requires having states that are explainable as having a place for an *I*-concept.⁴³ A psychological capacity can be correctly individuated as involving a place for an *I*-concept only in terms of a psychological unity that is explanatorily grounded in the individual's agency. Such unity is in turn partly explainable in terms of memory with its presuppositions about individual identity.

The point that individuals figure in the individuation of psychological states that are central to explanation of perception, agency, and inference applies whether or not agent-neutral accounts attempt a further functionalist reduction. Individual agents enter into the individuation conditions of such psychological competencies and their exercises. Individuation is the *basic* level of kind-individuation. I believe that the basic kinds in psychology are representational kinds, not some further nonintentional, functionally specified kinds. I reject functionalism. But to be adequate, even functionalism would have to include, among the anchor points in its account of individuation, the individual as well as aspects of the individual's environment.

General intuitions that facts about psychological states must be fixed by continuities in neural causation do not confront basic forms of empirical explanation of agency, perception, and inference—or the way those forms are individuated. The role of individual agents in individuating psychological states is just as central as the role of kinds in the referred-to environment.⁴⁴ Here the relevant part of the “environment” is the individual agent, not the kinds or properties that the individual interacts with. But the reasons why sequences of neural states considered in isolation cannot fix psychological states are similar. Individuation of representational states must take account of the “environmental” context of neural states, including what needs they serve. Insofar as the reductionisms rest on intuitions about neural or causal continuity *per se*, their mistake is analogous to the mistake made by individualism about psychological states.

The point that individual agents figure in the individuation of psychological states applies whether the account is associated with an attempt to downgrade the importance of individuality in psychology—as it is for Parfit—or with an attempt to rework ordinary individual psychology with agent-neutral psychological kinds—as it is for Shoemaker. Both approaches neglect either the central role of psychological states with *de se* forms and *de se* presumptions in psychological explanation or (inclusive) the fundamental role of individuals in individuating exer-

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cises of *de se* psychological states. As regards persons, they in effect relegate to a trivial “special case” (cf. note 41) the central role of taking one’s own agency as a source of epistemic, practical, and moral norms. Reductionism misses how individuation, explanation, logical form, and representational or epistemic norms are grounded in the perspectives, needs, aims, and values of individuals.⁴⁴

I see no threat from the fission case to any of my arguments. Explanatory circularity emerges in using such cases for reductionist ends as soon as *A* and *B* are considered agents with psychologies. Reductionism is much further from intuition, from individuation of psychological natures, from empirical psychological explanation, and from a reasonable epistemology than it might have first appeared to be.

12.

The foregoing reflections tell against a prominent class of theories of personal identity, indeed of mind, commonly associated with Locke and Hume. The common assumption of these theories is that psychological states are more basic than personal (or agent) identity.

This assumption has sometimes been combined with attempted reduction of the personal to the impersonal. Examples are Hume’s bundle theory, Lichtenberg’s attempt to eliminate the first-person from the *cogito*, Parfit’s impersonalist theses, and various philosophers’ hopes to accord explanatory hegemony to the third-person standpoint.⁴⁶ Since quasi-memories can exist only in a system that depends for its representational functions on memories, with *de se* presumptions, quasi-memories cannot support an impersonalist reduction.⁴⁷

More modest reductionist approaches popularly associated with Locke are also affected. Attempts to reduce personal identity to a sequence of psychological states, or a sequence of arbitrarily small time slices each of which has the relevant states seem to me to fail.⁴⁸ Psychological states that are essential to being a person presuppose a core of veridical applications of *de se* memory forms and veridical *de se* presumptions in purely preservative memory. These presuppose, and are individuated in terms of, the unity of a representing individual over time. So correct explications of the possibility of these psychological states and abilities, and norms governing their exercise, entail individual identity over time.

One can conceive of beings that lack perception, intentional agency, and inference, but that get along in the world. The most primitive layer

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of the animal kingdom is replete with such beings. They lack representational minds. One can conceive of beings that have only an analogue of inference—a state transition statistically favorable to the organism, described in “information theoretic” terms but falling under no inferential norms.⁴⁹ If such beings have biological needs and either perception or any sort of agency, their psychological states have representational elements. Individuation of exercises of such states depends on individual identity over time. Neither sort of being would be a person. The idea that we might be either sort of being is absurd. Among the most solid things we know are that we perceive objects, intend to do things, draw inferences.

I have not faced various puzzles about personal identity: transplantation, transportation, multiple personalities, dementia, fetuses. I hope to have found insight into necessary conditions for being a person.⁵⁰ Memory is essential to representation because use and competence make representation possible. Uses and competencies must be reapplicable by and for the representing agent. The *de se* forms and presumptions of memory—and attendant presuppositions about agent identity—are necessary for reapplicability. Memory is at the root of representation.

I believe that most of the points I have been making are apriori. I believe that their apriority has important implications for method in philosophy.

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Notes

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¹ One can, of course, have a memory presentation that *p*, but not believe it. My construal of “remembering that *p*” simply clarifies how I use the term. I believe that the less committal type of remembering-that and nonveridical memories are ultimately to be explained in terms of *reliance* on *veridical* memories.

² I leave open whether video, television, or radio transmissions provide the relevant sort of direct awareness. I incline toward liberality. Grice in effect suggested that “I remember Napoleon’s being defeated” more clearly requires

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experiencing the defeat first-hand. I find that intuitions vary even on this point. Some think that receiving direct reports and participating in the thrill of the event would warrant the gerund construction.

³Tulving distinguishes episodic memories from semantic memories in “Episodic and Semantic Memory,” in *Organization of Memory*, ed. E. Tulving and W. Donaldson (New York: Academic Press, 1972); *Elements of Episodic Memory* (Oxford: Oxford University Press, Clarendon Press, 1983); “Multiple Memory Systems and Consciousness,” *Human Neurobiology* 6 (1987): 67–80. All *experiential* memories are instances of Tulving’s episodic memories, with one caveat. Tulving explicates episodic memories as memories of events. I intend experiential memories to include a wider range. Some *substantive content memories* are Tulving’s semantical memories. Those substantive content memories that do not involve *de re* constructions are semantical memories. Tulving does not distinguish substantive content memories from purely preservative memories. I also differ in allowing both to be nonpropositional. For recent discussion, see A. Baddeley, M. Conway, and J. Aggleton, eds., *Episodic Memory: New Directions in Research* (Oxford: Oxford University Press, 2001). The generic types of memory that I discuss are further subdivided into working memory, shorter-term memory, and longer-term memory.

I use “purely preservative memory” here as I do in “Content Preservation” (*Philosophical Review* 102 (1993): 457–88, reprinted in *Content*, ed. E. Villanueva (Atascadero: Ridgeview, 1995) and in *Apriori Knowledge*, ed. A. Casullo (Hampshire: Ashgate Publishers, 1999)), except that I am more explicit in applying the term to nonpropositional content preservations. In the earlier article I used “*substantive memory*” to cover both experiential memory and what I here call “substantive content memory.” *Substantive memory* is distinguished by its role—and directly contrasts with purely preservative memory. It introduces subject matter and carries new warrant.

⁴A *de se* form in memory must fix the framework of the context of the remembering. It will commonly retain a spatiotemporal framework from the remembered context, but may not. To be veridical, it must coordinate with the agent of the remembered context; and to be a *de se* element in memory, it must normally function to further the needs, aims, perspective of the agent of the remembered context. There is evidence that animals that cache food also retain the time of the act of caching. Cf. N. S. Clayton, D. P. Griffiths, N. J. Emery, and A. Dickinson, “Elements of Episodic-like Memory in Animals,” in Baddeley, Conway, and Aggleton, *Episodic Memory*. Animals like birds and dogs seem to have experiential memories with the two grades of *de se* involvement. It is less clear whether they remember acts from the inside (see below). This is a topic of conjecture and methodological debate in psychology.

⁵This distinction comes from Shoemaker, “Persons and their Pasts,” in his *Identity, Cause, and Mind* (Cambridge: Cambridge University Press, 1984), 27, originally published in *American Philosophical Quarterly* 7 (1970): 269–85. I believe that the distinction was somewhat misformulated by Shoemaker, but this did not affect his primary points. Cf. Gareth Evans, *The Varieties of Reference*, ed. John McDowell (Oxford: Oxford University Press, Clarendon Press, 1982), chap. 7.

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⁶As regards *experiences*, I think that we can (experientially) remember only our own, and only from the inside. So here the three grades are always filled. I think that we can remember another person's *having* an experience only from the outside. I remember your having pain, from the outside, because I remember your expressions of physical suffering. I cannot experience your pain, and I cannot remember from your perspective, as sufferer, on the pain, no matter how much I empathize and talk projectively about sharing your pain. I can remember my *having* an experience, say a pain, either from the inside—by remembering the pain—or from the outside. In the latter case my memory of having pain may derive from seeing myself in a mirror reacting to the pain. I can experientially remember an act as either my act or another's and either from the inside or from the outside.

⁷A *de se* element in a representational content is distinct from a first-person concept, for reasons given above. The deep distinction between the two sorts of representational content and psychological capacity will surface only occasionally in this paper.

⁸For discussion of indexes in the explanation of action, including pre-intentional action, see Marc Jeannerod, *The Cognitive Neuroscience of Action* (Oxford: Blackwell, 1997). The attribution of egocentric indexes is ubiquitous in perceptual and animal psychology.

⁹Cf. my "Belief *De Re*," *Journal of Philosophy* 74 (1977): 338–62, sect. 2.

¹⁰For an individual's states to have any representational content, some of this content must be associated with uses by and for the individual. This is one reason why thermometers and computers do not have autonomous representational content. Of course, they have a derivative kind of content in that they can be used for expressing and processing representational content.

¹¹For an argument on this sort of point that focuses on the mature first-person concept, but that is transferable with relatively obvious modifications to the contexts of this paper, see my "Reason and the First-Person," in *Knowing Our Own Minds: Essays on Self-Knowledge*, ed. Smith, Wright, and MacDonald (Oxford: Oxford University Press, Clarendon Press, 1998).

¹²For a discussion of these matters in somewhat greater depth, see my "Perceptual Entitlement," *Philosophy and Phenomenological Research* 67:503–48.

¹³Sensation is an indicator that conduces to survival but is not genuinely perceptual. I discuss the distinction between sensation and perception in "Perception," *International Journal of Psychoanalysis* 84 (2003): 157–67. I intend to elaborate the distinction elsewhere. The argument that immediately follows in the text is also given in "Perceptual Entitlement."

¹⁴I have discussed interlocution or testimony in "Content Preservation" and in my "Computer Proof, Apriori Knowledge, and Other Minds," *Philosophical Perspectives* 12 (1998): 1–37.

¹⁵If the informant is not the ultimate source, there is still a difference in warrant. Although both informant and recipient are warranted by interlocution, the particular reliances are different, since each relies on different informants with different degrees of reliability in the causal chain. But the main point is that the ultimate source of warrant for the original instantiation of the step is different from the warrant of any given recipient through interlocution.

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There are, of course, arguments carried through jointly by many scientists, where no one scientist independently confirms all the steps. Such arguments are found convincing because they can be seen to be logically valid and because an individual can have meta-warrants that the steps he or she has not autonomously confirmed are warranted. For example, one is warranted in thinking that the scientists responsible for step 3 are reliable, hence that their advocacy is a sign of the step's being warranted. The meta-warrants must remain constant for a step from establishment of the step to its re-invocations, if the overall argument is to support its conclusion for an individual. Further, I think that one could not use meta-warrants unless one were capable of carrying out autonomous arguments that follow the scheme I am outlining.

¹⁶As noted, section 10 elaborates and defends this line of reasoning. The argument does not claim that the agent of inference must have *de se* memories. But I think that any representational activity does require such memories in the psychological system. The argument's claim that the agent must have purely preservative memory yields the presupposition that the agent is the same through the inference, as well as the *de se presumption* that earlier instantiations of steps are the agent's own.

¹⁷John Locke, *Essay Concerning Human Understanding*, ed. Peter H. Nidditch (Oxford: Oxford University Press, 1975), 2.27.9. It is not clear to me that this passage shows that Locke regarded memory as part of a definition or analysis of the concept of a person.

¹⁸Joseph Butler, "Of Personal Identity," First Dissertation to the *Analogy of Religion*.

¹⁹Shoemaker, "Persons and their Pasts," 24. I shall ignore the view that quasi-memory is a type of knowledge and regard it as a putative ability.

²⁰Derek Parfit, *Reasons and Persons* (Oxford: Oxford University Press, Clarendon Press, 1984), 220. Parfit sees himself as following Shoemaker in this characterization. In addition to the difference that I will highlight in this section, there are two other differences in their characterizations. One is Shoemaker's characterization of quasi-memory as a type of knowledge. The other is that Shoemaker writes of quasi-memory as being of an event that was experienced, whereas Parfit writes of quasi-memory as being of an experience. I think neither usage is sufficiently general to cover all types of memory and quasi-memory. This will not matter in what follows.

²¹Shoemaker, "Persons and their Pasts," 24.

²²Ibid., 32.

²³I am not sure how aware either philosopher was of the features that I take to differentiate their characterizations. Parfit does not remark on the *de se* character of his characterization. Shoemaker never provides a completely sharp and straightforward characterization. Whether the distinguishing features of the characterizations were recognized will not matter.

²⁴Gareth Evans, *The Varieties of Reference*, Parfit, *Reasons and Persons*, 220–22, 516 n. 15.

²⁵Let me caution against a common mistake. Some infer from the possibility of systematic error in memory that systematic error is possible from the ground up. People do lose all accuracy in memory. Someone could also be sys-

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tematically fooled in abnormal circumstances. These cases presuppose a memory competence that is subverted. It is impossible for an individual to have representational content, but never have an explanatorily fundamental memory capacity to preserve his own past representational states or events. In the case of many representational capacities, successful application may have occurred not in the life of the individual but only in the formation of the species' capacity. But purely preservative memory and *de se* aspects of memories are special. An individual whose activity was never correctly explainable in terms of successful preservation of its own contents from one moment to the next, or in terms of holding agency together with perception and aim over time, could not have a mind at all. Having attitudes with representational content is constitutively dependent on having *de se* and purely preservative memory competencies that issue in explanatorily relevant, *successful* holdings together, over time, of perceptions, needs, aims, and activities. In the absence of an explanatory core of *veridical* applications *by the individual*, there would be no representation.

²⁶ The individual could learn inductively to distinguish presentations that connect to his own past. This would not suffice to give the presentations *de se* form. For that form necessarily yields motivations, norms, and acts that are immediate from the presentation itself.

²⁷ Thus, I think that Parfit has a right to his *de se* conception of quasi-memory only if quasi-memory is, in explanatorily relevant ways, parasitic on normal memory. His conception is not strictly incoherent. We can imagine that a person connects to other people and cannot through any immediate phenomenological marker distinguish those cases from veridical memory. The competence could have a *de se* form (mistakenly applied in the cases of connections to others' past) only if fallible but successful coordination with the individual's own past states were the explanatorily fundamental case.

²⁸ Several fine papers have cited practical agency as a problem for appeals to quasi-memory. Cf. Susan Wolf, "Self-Interest and Interest in Selves," *Ethics* 96 (1986): 704–20; Christine Korsgaard, "Personal Identity and the Unity of Agency: A Kantian Response to Parfit," *Philosophy and Public Affairs* 18 (1989): 101–32; John McDowell, "Reductionism and the First-Person," in *Reading Parfit*, ed. Jonathan Dancy (Oxford: Blackwell, 1997). These papers do not give the present arguments. Each contains large points that I do not accept. Yet each offers insights into what I consider to be sound and fruitful directions for thinking about the issues.

²⁹ I always allow the use associated with aspects of psychological state-types corresponding to perceptual representations (contrast *de se* elements) to be established in an animal's conspecifics or species' ancestors (cf. note 25). One must, of course, not require that every representation have a use special to it. For example, representations of certain shapes that are of no use to an animal species might be individuated through their being constructed from principles governing representations of shapes that are of great interest or use.

³⁰ An argument can be considered in the abstract, regardless of who, if anyone, put forward the steps, and regardless of what the warrant for the premises or steps are. We can construct (or abstractly, there is) an argument made of

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pieces extracted from the psychologies of different people. In some cases, warrants for the steps can perhaps be considered under impersonal standards of rationality. Moreover, the validity and soundness of *any* argument are person-independent. But we are considering argument and inference not as abstract sequences of propositions, but as psychological processes—as reasoning whose point is to support a conclusion. Such inferential reasoning is individuated not only through the logic of the argument but through the warrant of the steps. Deductive reasoning, considered as an inferential process that supports a conclusion, is meant not only to preserve truth and stay within the rules of deductive logic. It is meant to support or transfer warrant to a conclusion. A step in such reasoning must be considered to include its warrant. Reinvoking a step involves relying on its warrant. What I call “*inferences*” in this paper are norm-governed transitions in such reasoning. What I call “*arguments*” are chains of such inferences aimed at supporting a conclusion. The narrower, more formal conceptions of inference and argument presuppose these notions, I believe, in this sense: Any being that carries out inferences and arguments in any sense must be capable of carrying out inferences and arguments whose function is to provide warrant for a conclusion.

³¹ Epistemic internalists hold that warrants must be fully accessible to the warranted individuals, as reasons or justifications. I believe, by contrast, that not all warrants need be accessible to the warranted individual. Warrants are nevertheless always explained in terms of states and capacities of individuals, supplemented in some cases by relations to a subject-matter environment. I believe that epistemically externalist views join internalist views in either accepting the premise or yielding an analogous and equally effective premise that accords with their terminology and theory.

³² Insofar as there are *de se* elements in the content, of course, the referents of the indexes will shift. But the content can be type-identical.

³³ The supposition that the content was warranted earlier through an exercise of quasi-memory will not change the situation. Each chain will have different warrant that depends on the nature of the chain from the quasi-remembered event to the quasi-memory. (Cf. note 15.) In having different warrants, instances of quasi-memory are like instances of perception. Quasi-memory is formally a new source of information. It is not purely preservative in my sense. Even supposing that an individual begins life with a set of reliable quasi-memories, these are sources of information and warrant for him. Although they derive from the states of another individual, and depend for their warrant on those earlier states’ being warranted, they do not preserve warrant; and they do not preserve information within the quasi-remembering individual.

I should note that inference in practical reasoning, which is discussed near the end of section 4, is subject to the same-agent condition for *two* reasons. One has to do with the nature of steps in inference—by the argument just given. The other has specially to do with the fact that practical reasoning must preserve the practical commitments of the reasoner. In theoretical reasoning the commitment (to truth) is in a sense common to all inferers. In practical reasoning the role of preserving the individual’s own commit-

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ments—motivational elements—is additional. Individual practical reasoning would be doubly incoherent in the absence of the same-agent condition on purely preservative memory.

³⁴I believe that purely preservative memory clearly presupposes the presence of a *de se* memory competence in the same individual (as well as vice versa). But I do not rely on this belief in the present argument. It is enough that purely preservative memory constitutively involves an explanatorily relevant competence to preserve content from one's past. Purely preservative memory thus *presupposes* agent-identity and *presumes* the veridicality of *de se* attributions—whether or not the purely preservative memories are themselves *de se*.

³⁵I caution here about a special case of the mistake discussed in note 25. One might think that since we rely on others in interlocution, it does not matter whether a step of any argument comes from someone else. The broad-brush answer is that our reliance on others presupposes that our representational content and inferential abilities are already in place. If a recipient could not make intrapersonal inferences, taking lemmas or other propositional information from others would be impossible. Further diagnosis of this mistake can be derived from the discussion in this section.

³⁶For criticism of Descartes on memory see my “Content Preservation.” Descartes was, of course, right to emphasize a role for noninferential comprehension in carrying out a proof. For a proof to be effective, there must be component steps that can be comprehended without inference.

³⁷This is the great lesson of Kant's emphasis on the role of inference in making judgment possible. Cf. *Critique of Pure Reason*, for example A 76ff./B 102ff., B 130–31. It is also a deep theme in twentieth-century philosophy—stemming from work of Frege. I have in mind his assumption that meaning is to be understood only by understanding inferential structure, an assumption that suffuses his method in *Foundations of Arithmetic*, trans. J. L. Austin (Evanston: Northwestern University Press, 1968), and “On Sense and Reference,” in *Translations from the Philosophical Writings of Gottlob Frege*, ed. P. Geach and M. Black (Oxford: Blackwell, 1966). Cf. my paper “Frege on Sense and Linguistic Meaning,” in *The Analytic Tradition*, ed. David Bell and Neil Cooper (London: Basil Blackwell, 1990). Cf. also Wittgenstein's *Investigations*, trans. Anscombe (New York: MacMillan, 1968). The picture of understanding as simply an immediate flash of insight has been repeatedly and convincingly undermined.

³⁸The point applies to norms as well as psychological competence, since relevant norms are grounded in such competencies and their functions. Normative standards for operating well in fulfilling the function of veridical representation, given the perspectival and operational limits of the individual, are the predecessors of epistemic norms. Applicability of such norms depends on certain processes' functioning to preserve fulfillment of them over time. A framework for these remarks is developed in “Perceptual Entitlement,” sect. 1.

³⁹Quasi-memories are like memories and interlocution in conveying information from prior representational states. They also resemble memories in that (presumably) one could reverse temporal order among them. Unlike all memories, they are formally or explanatorily sources of new information.

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Unlike purely preservative memories they are sources of new warrant.

⁴⁰ Of course, experiential memory and substantive content memory often embellish what was originally taken in. Some of this embellishment is distortion, and does not fulfill memory's representational function (though it may fulfill some biological or practical function). There is, however, the phenomenon of ordering, summarizing, drawing inferences, so as to extend the material of the original belief or experience. Cf. Daniel L. Schacter, *Searching for Memory* (New York: Basic Books, 1996). This may constitute an epistemic function of memory. I maintain, however, that insofar as it is an epistemic or representational function of memory, it must be a drawing out of elements implicit in material already present in memory.

⁴¹ Shoemaker and Parfit seem aware of this threat. Each suggests that the first-personal elements in memory attributions derive from a "trivial" linguistic point (Shoemaker, "Persons and Their Pasts," 24; Parfit, *Reasons and Persons*, 222–23). I have tried to show that *de se*- and first-person-presuming aspects of mental states are explanatorily fundamental. Fundamental psychological capacities are *individuated* in terms of *de se*-presuming competencies, which are in turn individuated partly in terms of the individual who is the agent of the competencies. Individuals are extended in time; their perspectives, needs, aims, and activities are extended in time.

⁴² An alternative is that quasi-memory of another individual's past is *not* a nonveridical exercise of *de se* memory (that is, not the case I discussed in section 7), but a separate faculty, like perception. Such a faculty is still explanatorily and individually parasitic on genuine memory in the same psychological system. Explanation of its use, like explanation of perception, agency, and other representational capacities, requires attribution of memory proper. For being an individual agent requires being able to act out of an immediate sensitivity to one's own perspective, needs, and aims. This ability requires *de se*-presuming memories.

⁴³ Cf. my "Reason and the First-Person," 247ff.

⁴⁴ Cf. my "Individualism and the Mental," *Midwest Studies in Philosophy* 4 (1979): 73–121, and "Other Bodies," in *Thought and Object*, ed. Andrew Woodfield (London: Oxford University Press, 1982), 97–120.

⁴⁵ Parfit's line is especially affected by the empirical success of individual psychology. One cannot eliminate the notions of individual agency, or of the individual, in giving an empirical psychological account of transactions in our world. Epistemic and practical norms are grounded in these empirical facts. Shoemaker's line is especially affected by the fact that the notions of agency, inference, and personhood are apriori connected to the explanatory centrality of *de se* presumptions, and their individuating presuppositions about individual identity. Memory is in on the explanatory ground floor of any account of the representational content of an individual agent.

I have been emphasizing individuation and explanation in this section. Earlier sections, especially sections 4 and 10, also featured the role of representational norms (norms of veridicality) and epistemic norms in our understanding of presuppositions of agent identity in psychological states. Both reductionisms are vulnerable to criticisms based on normative considerations,

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but I will not undertake a separate diagnosis of these vulnerabilities here.

⁴⁶ Cf. Hume, *A Treatise of Human Nature*, 1.46; G. C. Lichtenberg, *Schriften und Briefe* (Munich: Carl Hanser Verlag, 1971), 2.412.76; Parfit, *Reasons and Persons*, 224–26. From the point of view of this project, the presence of a *de se* notion in the concept of quasi-memory would make that concept illicit. It is notable that Parfit's conception does not exclude *de se* elements from the concept of quasi-memory. Parfit tends to conflate the issue of reduction of the personal to the impersonal with two other issues. One is whether thinkers are "pure egos" that are "separately existing entities." The other is whether one can correctly and completely specify experiences and connections among them without presuming the existence of a subject that has these experiences. Materialists and many nonmaterialists would join Parfit in inclining toward a negative answer to the first question—pending clarification of its meaning. Parfit, the Hume before the appendix, Lichtenberg, Mach, and James maintain an affirmative answer to the second question. Our discussion of *de se* elements supports a negative answer.

⁴⁷ Cf. my "Reason and the First Person."

⁴⁸ It is disputable whether the view is Locke's. Examples of this view are Shoemaker, "Self and Substance," *Philosophical Perspectives* 11 (1997): 283–304 (and references therein); David Lewis, "Survival and Identity," in *The Identities of Persons*, ed. Amélie Rorty (Berkeley: University of California Press, 1976); John Perry, "The Importance of Being Identical," in *The Identities of Persons*; and H. P. Grice, "Personal Identity," *Mind* 50 (1941): 330–51.

⁴⁹ Hume's skepticism about inference suggests this approach (cf. *A Treatise of Human Nature*, 1.4.1, 1.3.13). Another *ersatz* for inference might be regarded as warrant purely through credulity. If X seems to quasi-remember that p, X is warranted in believing p. Each surrogate for a step could have this sort of warrant. The view is incoherent if it omits purely preservative memory. A being that lacked a capacity for deductive inference could not have logical form for its representational states, hence no propositional attitudes. Such a view would also not account for the role of purely preservative memory in perception and agency. It would not account for *use* in representational transactions. So I think that this imagined case collapses into the case in which there is no inference and no representational content.

⁵⁰ This paper has an obviously Kantian flavor. It investigates necessary conditions on the possibility of having certain competencies. It also claims that psychological states presuppose a certain unity reflected in the form of the content of psychological states. Kant called his version of such unity "the transcendental unity of apperception." He saw such unity as necessary to applications of "I think" (*Critique of Pure Reason*, B 131–42). By grounding his account in self-consciousness, Kant tends to ignore lower-level *de se* elements in mentality, present even in many lower animals. Such animals have perception but no thought, much less a first-person concept.

At a more specific level, my arguments regarding inference are kin to Kantian suggestions about what is involved in holding a propositional thought together over time (cf. *Critique of Pure Reason*, A 98–110). I do not see in his work the specific argument I give. My arguments regarding perception are cer-

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tainly congenial to Kant's view of empirical intuition (cf. A 98ff.). I know of no cousin of the argument regarding intentional agency in Kant. I did not develop these arguments by reflecting on Kant, but no doubt I was somehow influenced.

Kant sees his account of the unity of apperception as "purely formal," with no immediate ontological significance for being in time. He bases this view on what I regard as an untenably restrictive epistemology. In the third Paralogism, which contains what must be the first appeal to quasi-memory, he imagines as an empirical possibility a series of persons who use "I think" in purported memories about their pasts, each having memory-like presentations that derive from the previous person (also applying "I think"). Each person mistakenly construes the previous one's past as his or her own. The case is primarily directed against the idea that we can through mere reflection have a certain scientific cognition that we are substances in the Cartesian sense. I accept Kant's rejection of this idea. But Kant also holds that only empirical experience could rule out such a series of erroneous self-attributions in an actual case. (Cf. *Critique of Pure Reason*, A 361–67 (esp. A 363 and A 363 n.), B 408.) I believe that this claim is mistaken. I think that such a case can be shown by apriori reflection alone to be impossible, or at least incompletely described. I think that Kant's target, "rational psychology" (which relies on certain features of Descartes's method of reasoning from the *cogito*) has more to be said for it than Kant allows. I do not accept Kant's restrictive epistemology of self-attribution, or his views about the *cogito*. Being fair to Kant's subtle position requires a much richer historical account, one I hope eventually to give.