

RETHINKING THE *A PRIORI/A POSTERIORI* DISTINCTION

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ABSTRACT: This paper offers an account of the *a priori/a posteriori* distinction utilizing the insights of reliabilism, focusing on the *inputs* to reliable belief-forming processes. I propose that a belief possesses *a priori* justification if it is the result of a reliable belief-producing process whose input is 'non-sensory' and the reliability of this process does not 'causally depend' on the reliability of a prior process taking in 'sensory' input. One of the interesting consequences of this account is in the treatment of introspective knowledge of one's belief-states; it was classically considered *a posteriori*, but comes out *a priori* on this model.

KEYWORDS: epistemology, reliabilism, *a priori*, *a posteriori*, naturalism, externalism

1. Introduction

There is only one way of knowing, the empirical way that is the basis of science (whatever way that may be). So I reject *a priori* knowledge.¹

This quote by Michael Devitt illustrates a common charge against naturalists (or by naturalists) that *a priori* knowledge is not possible given a naturalistic scientific framework.² This assumption is incorrect. One can consistently hold a reliabilist

¹ Michael Devitt, *Coming to Our Senses* (Cambridge: Cambridge University Press, 1996), 2.

² By a 'naturalist' I mean an epistemologist who 'reduces' epistemic concepts to nomological concepts. The nature of the reduction is not the same for all naturalized epistemologists. For some, epistemological questions are replaced with psychological questions and the autonomy of epistemology is threatened (Quine); for others, the nature of the reduction is weaker. Under Goldman's view, for example, the concept of normative justification supervenes upon nomic properties. See W.V.O. Quine, "Epistemology Naturalized," in his *Ontological Relativity and Other Essays* (New York: Columbia University Press, 1969), 69-90; Alvin I. Goldman, "What is Justified Belief?," in *Justification and Knowledge*, ed. George S. Pappas (Dordrecht: D. Reidel, 1979), 1-24. For more on the debate over *a priori* knowledge with respect to naturalism, see also Albert Casullo, *A Priori Justification* (Oxford: Oxford University Press, 2003); Michael Devitt, "Naturalism and the *A Priori*," *Philosophical Studies* 92 (1998): 45-65; Georges Rey, "A Naturalistic *A Priori*," *Philosophical Studies* 92 (1998): 25-43.

naturalistic epistemology and accommodate the existence of *a priori* knowledge, that is, knowledge which is in some sense ‘independent of experience.’³

The classical treatment of the distinction in terms of special types of internal processes is simply unsatisfactory. The mysterious workings of a ‘faculty’ of reason or intuition are no longer plausible as philosophical explanations for the source of our *a priori* knowledge.⁴ This paper’s primary focus is to explicate a new substantial account of the *a priori/a posteriori* distinction within a naturalistic framework, an account that will incorporate the insights of a reliabilist epistemology and will disambiguate the murky concept of ‘independence from experience’ offered by the classical conception. Because the *a priori/a posteriori* division is an epistemic distinction concerned with identifying two fundamentally different sources of knowledge, the most natural interpretation of the distinction for a reliabilist should focus on the *inputs* to belief-forming processes.⁵

³ Reliabilist naturalism, as I shall use this term, means that justification is to be understood in terms of reliable belief-producing mechanisms. Epistemic justification is a ‘natural’ concept—“a function of the psychological [evolved] processes that produce and preserve belief” (Alvin I. Goldman, “*A Priori* Warrant and Naturalistic Epistemology,” *Philosophical Perspectives* 13 (1999): 3). The aim of a reliabilist naturalistic epistemology is to evaluate our cognitive capacities by understanding how they non-accidentally bring about beliefs in accordance with the facts. I wish to defend a moderate naturalism, where epistemology needs ‘help’ from science as evidence for beliefs, but non-empirical warrant is available. For instance, cognitive psychology can ‘help’ reliabilism in discovering appropriate types of belief-forming processes.

⁴ I do not mean to suggest that I am denying ‘intuition,’ but, perhaps, just denying the suggestion that it is a special ‘faculty’ (to be explained shortly). I want to argue that ‘intuition’ might simply be reducible to certain belief-forming processes in the brain. See Goldman, “*A Priori* Warrant and Naturalistic Epistemology”; Ernest Sosa, “Minimal Intuition,” in *Rethinking Intuition: The Psychology of Intuition and Its Role in Philosophical Inquiry*, eds. Michael R. DePaul and William Ramsey (Lanham: Rowman & Littlefield, 1998), 257–270. Well, I am also denying the claim that *a priori* justification is *parasitic upon* this faculty of rational intuition.

⁵ I do recognize that the approach in terms of characterizing *a priori* processes is a plausible way to understand the distinction, but I think that characterizing the distinction through inputs may prove to be more plausible. The motivation for this conclusion is the following: Belief-producing processes are most likely either functional states or mechanisms. As functional states, the processes themselves are defined in terms of their inputs and outputs. One cannot isolate a belief-producing process, then, without identifying the relevant inputs and outputs. Thus, the question of whether the distinction should be drawn according to *a priori* processes or *a priori* inputs would turn out to be the same question. As mechanisms, however, inputs may be separable from processes, depending on how we decide to type our processes. In this case, it could turn out that the same process type sometimes takes in sensory inputs and at other times takes in non-sensory inputs. In such cases, the process would not be a ‘special *a priori* process,’ but it would nonetheless produce *a priori* justification. This issue is quite complex and must face the Generality Problem, but consider the following example: I may

I should warn the reader at the outset that some of our knowledge will not be classified in the same way on my conception of the *a priori/a posteriori* distinction as on the classical model. On my view, some knowledge previously thought to be *a posteriori* comes out *a priori*. There is a cost to precision. The virtue of this account will be its ability to draw a clear distinction between the *a priori* and the *a posteriori* according to ‘sensory’ versus ‘non-sensory’ inputs.⁶ What is meant by ‘sensory’ and ‘non-sensory’ will be analyzed shortly. But, it is not a fault of *analysis* that there are disputes regarding the sensory/non-sensory status of particular mental states. It may require the aid of neuroscience to determine whether the input of a given belief-producing process is sensory or non-sensory. It is a *virtue* of this account that it allows us to draw the *a priori/a posteriori* distinction in terms of inputs to processes while recognizing that there is a legitimate debate over whether a given experience is sensory or non-sensory.

The ‘*a priori*’ may refer to knowledge, justification, propositions, or the way concepts are acquired. In this paper I will not be concerned with *a priori* concepts or concept acquisition, and so I will omit a discussion of innate concepts or ‘nativism.’⁷ The *a priori/a posteriori* division is *at base* an epistemological distinction, and is only derivatively connected with the modal status of propositions. My purpose is not to find a certain class of truths that may be particular to the domain of *a priori* knowledge. My focus will be on how *a priori* justification differs from *a posteriori* justification, but what I say regarding

have a belief-producing process of introspection, where in one case the input to my introspective process is a particular pain – a sensory mental-state – and at another time it is a particular seeming-to-remember – a non-sensory mental-state. Presuming, of course, that these are both tokens of the introspection process type, then we have a case of a process that yields both *a priori* and *a posteriori* justification – it is not a ‘special *a priori* process’ but produces *a priori* justification. My account advocates a concept of minimal apriority, making no further distinction for the ‘pure’ *a priori*, as Kant did. Rather, sometimes the same belief which possesses an *a priori* justification may also possess an *a posteriori* justification. The fact that the belief may also possess an *a posteriori* justification in no way nullifies its separate *a priori* justification. That said, searching for special *a priori* processes appears to rule this possibility out of hand.

⁶ For reasons of convenience, I refer to the inputs producing *a priori* and *a posteriori* justification respectively as, ‘non-sensory’ and ‘sensory,’ rather than using the terms ‘non-experiential’ and ‘experiential.’

⁷ Nativism is the view that we are all possessed not only with innate structures and capacities, but also with innate information, ideas, concepts, beliefs, and even knowledge. Nativism is an explanation of the origin of our beliefs, and not a theory of justification.

justification will apply *mutatis mutandis* to other epistemic concepts. *A priori* knowledge is to be defined as belief that is true and carries *a priori* justification.⁸

What is the classical analysis of *a priori* knowledge? Traditionally, the view that we have *a priori* knowledge was associated with rationalism. The rationalist asserts that, “*a priori* justification occurs when the mind directly or intuitively discerns or grasps or apprehends a necessary fact about the nature or structure of reality.”⁹ According to rationalism, intuition is needed in order to explain how we possess certain concepts (e.g. the concept of infinite perfection) and how we are able to ‘grasp’ the necessity of certain truths (e.g. truths about the properties of a triangle) – knowledge of these truths requires more than experience can provide. Pure intuition was considered a clear case of a process, available independently of experience, able to produce *a priori* knowledge. The moderate empiricists, on the other hand, though conceding the existence of *a priori* knowledge of analytic truths, in effect undermined its significance by reducing the object of our *a priori* knowledge to a mere relation among ideas.¹⁰

The *classical* analysis took the necessity of truths known to be the mark of the *a priori*, making a proposition knowable *a priori* only if it is necessarily (and analytically) true.¹¹ Kant (disputably) widened the scope of the *a priori* to include synthetic truths, but these truths were still necessary. It wasn’t until the influence of Kripke that necessity became separable from the conception of the *a priori*. Many disagree, however, with Kant’s analysis of synthetic *a priori* truths, citing in the final analysis an underlying analyticity.¹² Kripke’s analysis of the contingent *a priori* is also not uncontroversial, as it is dependent upon certain contentious considerations regarding the ways in which one can ‘fix the reference’ of

⁸ Although possibly also needing to satisfy further knowledge conditions. Refer to the Gettier literature for discussion of this issue.

⁹ Laurence Bonjour, “A Rationalist Manifesto,” *Canadian Journal of Philosophy Supplement* 18 (1992): 56.

¹⁰ As opposed to the radical empiricists, such as Quine, who deny the possibility of *a priori* knowledge altogether. Moderate empiricism would include philosophers such as Hume, Kant, and Ayer.

¹¹ Goldman explains that the classical conception of the *a priori* has included the following characteristics: “(1) Necessity [of what is known *a priori*]; (2) Non-sense-experiential source or basis [of one’s justification]; (3) A subject-matter of abstract eternal objects [for propositions knowable *a priori*]; (4) Incorrigibility (rational unrevisability) [of one’s justification]; (5) Certainty [possessed by one who has *a priori* justification]; (6) Infallibility [of one’s justification]” (Goldman, “*A Priori* Warrant and Naturalistic Epistemology,” 4-5). Of these concepts, my account needs only to retain (1) – a non-sense-experiential source or basis. Goldman, on the other hand, retains both (1) and (2) and rejects (3)-(6).

¹² See Bonjour, “A Rationalist Manifesto,” Section 3 for one form of the charge.

expressions referring to kinds. Any account which attempts to expand the class of truths known *a priori* beyond the analytically necessary must answer the question: “How can a proposition be known (specifically, justified) *a priori* if it is true in virtue of considerations other than the meaning of its constituent terms?”¹³

2. A Reliabilist Account of the *A Priori/A Posteriori* Distinction

My account can provide such an answer. To begin, a belief carries *a priori* justification if the truth of the belief could be ascertained independently of experience.¹⁴ This is also how the traditional account begins. But proponents of the classical view were quick to see that *a priori* knowledge is not to be understood as belief justified independent of *any* sort of experience whatsoever, for then we could not have any *a priori* knowledge! Even the knowledge of a basic mathematical truth involves some type of experience (e.g. the contemplation of numbers), but neither the classical conception nor my own would characterize the justification as *a posteriori*. Thus, all accounts of the *a priori* must search for the

¹³ Paul K. Moser, *A Priori Knowledge* (Oxford: Oxford University Press, 1987), 6. I am making the assumption here that if a proposition is true in virtue of the meaning of its terms, then it is analytic, and that all analytic truths are necessary truths. David Kaplan, on the other hand, separates the notion of analyticity from necessity, arguing that one can have *a priori* knowledge of an analytic proposition which is not necessary. See David Kaplan, “Demonstratives: An Essay on the Semantics, Logic, Metaphysics and Epistemology of Demonstratives and Other Indexicals,” in *Themes from Kaplan*, eds. Joseph Almog, John Perry, and Howard Wettstein (New York: Oxford University Press, 1989), 481-564. For the purposes of this paper, however, I am not at all concerned with providing an analysis of what makes a proposition analytic versus synthetic or whether analyticity entails necessity.

¹⁴ Of course, experience is minimally needed for concept acquisition, but as indicated earlier, I am only interested in the *epistemic* distinction between the *a priori* and *a posteriori*. There is also the further point that sometimes sensory-experience is required in order to have justification (e.g. an arithmetic or geometric proof), but that does not make the sensory-experience part of the justification. Causally necessary conditions are not always relevant to justification. Certain experience may be a precondition for coming to know a truth, but that experience may not play a justificatory role in ascertaining the truth of the proposition. Arguably, perception of visual shapes or objects may be required to ‘trigger’ or ‘occasion’ our apprehension of mathematical truths, though not playing any fundamental justificatory role (such as, for example, counting pebbles, which cues our apprehension of the truth of “ $3 + 2 = 5$ ”; or, more controversially, our perception of a diagram, perhaps, serves only as “an heuristic to prompt certain trains of inference,” which inferences then justify our belief in the truth of the Pythagorean Theorem). For more discussion of this issue, see for instance, Jaegwon Kim, “The Role of Perception in ‘*A Priori*’ Knowledge: Some Remarks,” *Philosophical Studies* 40 (1981): 339-354; Dennis Lomas, “What Perception is Doing, and What it is Not Doing, in Mathematical Reasoning,” *British Journal for the Philosophy of Science* 53 (2002): 205-223.

subclass of experience that is relevant to *a posteriori* justification. However, instead of delineating a principled distinction, the tradition integrated diverse sorts of experience, such as sensory-experience and introspection, provided they did not involve 'special' *a priori* rational processes. But this is to miss the point; focusing on types of processes rather than forms of experience fails to define '*a posteriori* experience' and consequently, falls short of giving any illuminating explanation of 'independence from experience.'

On my view, however, the separation can be readily understood in terms of inputs. A non-inferential justification is *a posteriori* if the inputs to the reliable belief-forming mechanism are 'sensory.'¹⁵ Non-inferential *a priori* justification, then, will involve inputs which are 'non-sensory.' What is to count as 'sensory'? There may be no uncontroversial way to distinguish the sensory from the non-sensory given the complicated nature of mental states. One common understanding of the sensory is drawn according to the five senses (the olfactory, gustatory, auditory, visual, and tactile) and the kinesthetic sense. One reasonable analysis, then, places states involving the five senses and the kinesthetic sense into the domain of the sensory and the states which remain into the non-sensory category.

However, it is not clear that pains and emotions, two types of states which we intuitively consider to be sensory, directly involve one of our five senses or the kinesthetic sense. One may then modify the distinction by counting as sensory those states which are non-intentional and non-sensory as those states that are intentional. Understanding the division in this way, however, may again fail to accord with our intuitions if one understands pains and emotions as intentional (or if one understands sensations as intentional). An alternate way to demarcate the categories is to separate those states that are physical from those that are non-physical. This differentiation would account for our pains and emotions but further problems may arise if one takes all mental states to be essentially physical (brain-states). It seems that whatever way the distinction is drawn, we would like to have it end up that our pains, emotions, and perceptions are sensory but that our belief-states and some 'awarenesses' are non-sensory.¹⁶

¹⁵ Since *a priori* justification is defined recursively, inferential *a priori* justification will be given a different analysis, as will become clear later.

¹⁶ There may be many different kinds of awarenesses, some of them sensory (such as an awareness of my pain) and some non-sensory. The awarenesses I am concerned with in regard to the non-sensory have to do with grasp of meaning, such as an awareness of a belief-state, numbers, universals, or propositions. What is more, these awarenesses can serve as inputs to belief-producing processes in a way that is consistent with naturalism, for it is the awareness that serves as the input to the belief-producing process, not the numbers or universals themselves. For example, the awareness of a proposition, such as the proposition, 'big snakes

How, then, can we account for our basic intuitions while maintaining a principled distinction? Let's return to the initial characterization involving our sensory organs. Why not consider pain and emotions as directly involving the five senses (and the kinesthetic sense)? One may reasonably argue that pains can be understood on a continuum with basic touch experiences, where pains are understood as certain sorts of extreme cases of tactile sensations.¹⁷ What about our emotions? Emotions are particularly problematic. Some emotions seem fundamentally intentional while others do not; some seem essentially physical while others do not. For example, it is not clear that being in-love, while intentional, is also physical; but feeling angst may be non-intentional and physical. Classifying all emotions as sensory, then, fails to account for their complexity. However, an emotion which has physical sensations as *constituents*, whether intentional or not, is likely to involve the five senses. Consider anger, for example. The fact that we may use certain sensations (e.g. clenching of fists and teeth, tightening of muscles, shortness of breath, flaring of nostrils, etc.) to identify that we are feeling angry is not relevant to its status as a sensory or non-sensory mental state – *but*, if bodily sensations are partly *constitutive* of the state of anger, then the state should obviously be classified as sensory. Other emotions appear to fit with this model.¹⁸ Belief-states and awareness of numbers, propositions, or belief-states, on the other hand, do *not* seem to involve the stimulation of our five senses, even when broadly understood as involving a continuum. This, then, is the proposal for understanding the sensory and the non-sensory. I have tried to present various ways one can understand this division, but I certainly invite others to provide an alternative distinction and presuppose it in what follows.

are dangerous,' might be an input (not the proposition itself) to one of my belief-producing processes, which outputs a belief in the truth of the proposition.

¹⁷ For instance, consider George Berkeley's discussion in the *Three Dialogues between Hylas and Philonus*. At one point in the First Dialogue, Philonus suggests an identification of extreme heat with extreme pain thought of as a tactile sensation: "Seeing therefore they are both immediately perceived at the same time, and the fire affects you only with one simple, or un-compounded idea, it follows that this same simple idea is both the intense heat immediately perceived, and the pain; and consequently, that the intense heat immediately perceived, is nothing distinct from a particular sort of pain." This suggestion was given to me by Richard Fumerton in conversation.

¹⁸ Some emotions, then, will be non-sensory if they do not involve the stimulation of the five senses. An example of an emotion of this type might be being in-love. Let us call these emotions 'emotion₂.' Although recognizing these two types of emotion, the use of 'emotion' in this paper refers only to those which essentially involve – are constituted by – states involving the direct stimulation of the five senses ('emotion₁').

Returning to our analysis of justification, my formulation of how a belief could possess *a priori* justification is remarkably *simple* – ‘independence from experience’ is to be determined solely according to the sensory/non-sensory nature of the inputs to the reliable belief-producing process, *whatever process it may be*, and not according to special ‘*a priori* processes’¹⁹ (with one further complication to be explained shortly – one also has to say something about the origin of reliability). One can have a fully adequate definition of the *a priori* in terms of inputs to reliable processes without including as part of the *definition* identity conditions for processes across counterfactual situations (though an analysis of *justification* in terms of reliability might include such considerations to help discover whether a given process is justified).

I hold a foundational account of knowledge where non-inferential knowledge, which is to serve as the foundation, is to be understood as justified true belief produced from an unconditionally reliable belief-independent process *or* from an unconditionally reliable *but belief-dependent* process.²⁰ As I will explain shortly, introspective belief is a paradigm case of a belief formed from an unconditionally reliable but belief-dependent process. This formulation of non-inferential knowledge differs in some significant respects from the standard reliabilist formulation as given by Goldman,²¹ but is one, I believe, that best captures the reliabilist’s commitments, and is something which has been to my knowledge previously overlooked. That is to say, a process does not need to be belief-*independent* in order to be unconditionally reliable. A process is unconditionally reliable if a sufficient proportion of its output beliefs are true. Inferential knowledge, on the other hand, is justified true belief produced from a conditionally reliable belief-dependent process whose input beliefs are themselves justified. A process is conditionally reliable if, given that the input beliefs are true, a sufficient proportion of its output beliefs are true.

Applying this analysis of non-inferential justification to our account of the *a priori*, we see that a belief is non-inferentially *a priori* justified if the inputs to the unconditionally reliable belief-producing process are non-sensory. Any process,

¹⁹ To be clear, by this I do *not* mean that reliability is to be understood instead in terms of process tokens rather than types. It may also be possible for the same process to take in both sensory and non-sensory inputs allowing the belief produced to carry both types of justification, although my view is not committed to this claim. This claim would seem to require belief-producing processes to be defined as mechanisms. If belief-producing processes are best understood as functional states, then this will not be the case.

²⁰ There are, of course, Gettier considerations one needs to take into account. See the Gettier literature for difficulties surrounding Gettier cases.

²¹ See Goldman, “What is Justified Belief?”

then, which is unconditionally reliable and which takes as its immediate input something non-sensory would yield a non-inferentially *a priori* justified belief.

3. A Note on Reliability and ‘Causal Responsibility’

Let us pause here for a moment. This analysis appears to get things correct with regard to our mathematical knowledge. Consider the belief that $2 + 2 = 4$. This belief carries non-inferential *a priori* justification, the inputs to the process being the contemplation of numbers or propositions. But what about the following case? Consider the possibility that we are so constituted such that we have a reliable belief-producing mechanism where usually, whenever our sole input is a seeming-to-remember that some event x occurred, our output is a belief that x occurred. This type of input seems to be a case of a non-sensory non-doxastic intentional state, which makes the resultant justification *a priori*. An example might be the true belief that I locked my door yesterday where the input is a seeming-to-remember that I locked my door yesterday. Even though these seemings-to-remember involve sensory experiences, the seeming-to-remember itself is the sort of state which seems non-sensory; yet do we really want it to be the case that my belief that I locked the door yesterday is non-inferentially *a priori* justified?

There may be several ways to avoid this conclusion. One is to deny that seemings-to-remember are non-sensory states, but to argue this would require detailed analysis.²² An alternative explanation might suggest that beliefs about the past actually involve other beliefs as inputs (e.g. I was holding my key, I was standing in front of my door and not someone else’s, I turned the lock clockwise, etc.), thus rendering the justification inferential and *a posteriori*, and for that reason, avoiding our potential difficulty (because beliefs which are justified through a combination of sensory and non-sensory inputs are *a posteriori* justified).

Perhaps the most plausible way to address this worry is to focus on the alleged reliability of the process taking in seemings-to-remember and outputting beliefs about the past. Why is it the case that these beliefs about the past are reliable? Recall that in the original description of the scenario, this belief-producing process does not take in beliefs as input, but rather, solely non-sensory non-doxastic states. It is purported to be unconditionally reliable – the relevant definition of reliability makes no reference to the truth-values of the inputs (if

²² The idea here is that seemings-to-remember, in the sense that they might involve image or video replay in one’s mind, might be more like episodic memory than stored beliefs. Interestingly, for Hume, beliefs, impressions, and imaginings were only different in degree, and not in kind. On his view, however, it would be quite difficult to separate out the non-sensory from the sensory for this reason.

there are any). But in what sense would we consider this to be the case without the existence of some prior reliable process involving sensory experiences? To be more precise, if the prior process which took in a sense-experience and outputted the belief that I locked my door was not reliable, then the latter process involving seemings-to-remember would not be reliable – seemings-to-remember could just pop into my head randomly. Thus, the *reliability* of the process involving sense-experience is *causally responsible* for the reliability of the process taking in seemings-to-remember, in the sense that it causally contributes to the latter process's reliability (rather than just being *causally necessary* for the process to begin).²³

We may then wish to add to our analysis a conceptual distinction between being 'causally necessary' and 'causally responsible.' On the one hand, the existence of process *P* may be 'causally necessary' for the initiation of process *Q*. An example of this might be evolution. It might be the case that, without our species having undergone certain evolutionary processes, we could not engage in other sorts of belief-forming processes, such as perception. So, we might say that a former process is 'causally necessary' for a latter. But, we can also speak of a process being 'causally responsible' for another in the sense that the *reliability* of process *P* causally contributes to the *reliability* of process *Q*.²⁴ In our case above involving memory, had there not been a prior sensory process *P* that was reliable, then my process *Q* involving beliefs about the past from seemings-to-remember might be entirely unreliable. We would say, then, that the reliability of my prior sensory process is 'causally responsible' for the reliability of my later memorial process.

As an additional illustration, take the case of perception and the contemplation of numbers. It might be the case that, without having had certain perceptual experiences, we would not be able to form beliefs about numbers resulting through contemplation of them. But, the reliability of the perceptual process does *not* causally contribute to the reliability of the process which results in beliefs about numbers from our contemplation of them, since our perceptual mechanisms could be wholly unreliable while our process outputting mathematical beliefs is reliable. Thus, in our stipulated example, though process *P* might be 'causally necessary' for process *Q* it is not 'causally responsible' for

²³ The prior *a posteriori* process generates the reliability of the latter process, so the justification for the deduced belief is derivative or 'inherited.'

²⁴ This will then also give us a notion of 'causal dependence': The reliability of a process will 'causally depend' on a prior process when the reliability of the former process is 'causally responsible' for the reliability of this latter process.

process *Q* because the reliability of process *Q* is not derived or ‘inherited’ from process *P*.

Modifying the analysis, then, a belief is non-inferentially *a priori* justified if the inputs are non-sensory and the process’s unconditional reliability does not ‘causally depend’ upon a prior process taking in sensory inputs; a belief is non-inferentially *a posteriori* justified if the inputs to the process are sensory *or* the inputs are non-sensory but the process’s unconditional reliability does ‘causally depend’ upon a process taking in sensory inputs, in the sense that the reliability of the prior process is ‘causally responsible’ for the latter process’s reliability.

Again, take our example involving perception and the contemplation of numbers above. Suppose that I believe that $2 + 2 = 4$, and I formed the belief initially by observing groups of apples on a desk. Later, I have the belief that $2 + 2 = 4$ through the contemplation of numbers. This belief is *a priori* justified because the inputs are non-sensory *and* because the process involving the contemplation of numbers does not rely upon the *veridicality* of sense-experiences in order for the belief to be justified; the process involving contemplation is reliable even if I am dreaming about or hallucinating apples – if my perceptual mechanisms are wholly unreliable. So, the *reliability* of the process involving sense-experience is *not* causally responsible for the *reliability* of the process taking in contemplation of numbers, and so the *a priori* justification is preserved.

Some, such as Kant and Kitcher, are disposed toward making a division between partially *a priori* justified beliefs and purely *a priori* justified beliefs, where the former beliefs also involve an *a posteriori* justification. In my analysis, a belief which is justified both through sensory input and through non-sensory input is *a posteriori* justified. An example of this might be the following: I may have certain geometric beliefs which are justified through *a priori* chains of reasoning, but it turns out that the visual shapes on the paper are also playing an important justificatory role by serving as inputs to my belief-producing process. In this case, rather than saying my belief in a geometric theorem is partially *a priori* justified and partially *a posteriori* justified, it would simply be *a posteriori* justified by virtue of involving any type of sensory component in the justification. Moreover, even if a belief is reliably formed from a sensory input (and so carries an *a posteriori* justification), if the same belief could also be reliably formed without that, or any, sensory input, the belief *could* also possess an *a priori* justification.

Understanding, then, that non-inferential knowledge can result from an *unconditionally* reliable belief-*dependent* process, we can easily note two important distinctions: (1) Non-inferential belief-producing mechanisms can take

beliefs as their inputs since the justificatory status of the input beliefs is independent of the process's tendency to produce true beliefs (because the relevant definition of reliability makes no reference to the truth-values of the inputs, if there are any) – an introspective belief about a belief is a paradigm; and (2) For a belief to be inferentially *a priori* justified, it is not sufficient that the input to the belief-producing mechanism be another belief (for then all inferential knowledge would be *a priori* justified!). What is also required is that the justification of the output belief ultimately depends upon beliefs which are themselves non-inferentially *a priori* justified. Like a theory of justification, then, *a priori* justification is defined recursively.

To make clear this first distinction, consider basic mathematical knowledge, such as the belief that $2 + 2 = 4$. This belief carries non-inferential *a priori* justification, the inputs to the process being contemplation of numbers or propositions. But, a more striking consequence of this account is that it will turn out that much of our 'introspective' knowledge carries non-inferential *a priori* justification. Consider the belief that I have the belief that I am in pain. The unconditional reliability of the process outputting the second-order belief about my belief is not established through the justificatory status of the first-order belief. Complex mathematical knowledge, on the other hand, holds *inferential a priori* justification because the input beliefs to the belief-producing mechanism yielding the output beliefs *must be justified* (e.g. a belief about theorems of Euclidean geometry).

Regarding the second distinction, the belief that it rained this morning is an example of a belief with inferential *a posteriori* justification because its justification is ultimately owed to some beliefs with *a posteriori* justification (e.g. I see water on the streets, I heard what sounded like raindrops, etc.). A belief about the Pythagorean Theorem, on the other hand, possesses inferential *a priori* justification because its justification ultimately depends upon beliefs which are *all* non-inferentially *a priori* justified (e.g. axioms of geometry).

This raises the question as to how to characterize the relevant inputs. Specifically, how far back in the causal chain should we go in characterizing a belief-producing process (and so, to identify the relevant input)? It is important in characterizing inputs not to go back indefinitely far. Conee and Feldman explain that views differ over how to understand the relevant input. One might argue that the input "begins at the surface of the skin, or farther in at some point where conscious experience begins, or farther out in an external cause of the experience."²⁵ Alston's position places the relevant inputs in the middle of the

²⁵ Earl Conee and Richard Feldman, "The Generality Problem for Reliabilism," *Philosophical*

spectrum offered by Conee and Feldman; in particular, in cases of visual belief-formation, the process begins with the perceptual experience.²⁶ Kitcher, as well, claims that the beginnings of the causal sequences constituting the processes should be restricted to those segments which consist solely of states and events internal to the believer. Goldman has a similar view, maintaining that only the “proximate causes internal to the believer” are constitutive of the belief-producing process.²⁷ In agreement with these philosophers, my own view is that the inputs of the causal sequence constitutive of the process are restricted to those states internal to the subject.²⁸ Of course, a correct specification of the ‘relevant type’ of process involved is also required.²⁹

Studies 89 (1998): 27, n. 1.

²⁶ Alston explains the reasoning for his position: “If the epistemic status of a belief is a function of the reliability of the process that generates the belief, it is the reliability of the psychological process that is crucial. Looking at perceptual belief formation, no matter how exemplary the path of the light rays from the surface of the perceived object to the retina, and no matter how finely tuned the neural transformations involved in the pathway from the eye to the brain, if the belief is not formed on the basis of the conscious presentations (and/or its neural correlate) in a truth-conducive way, the belief will lack the epistemic desideratum that is stressed by reliabilism” (William Alston, “How to Think About Reliability,” *Philosophical Topics* 23 (1995): 12).

²⁷ See Goldman, “What is Justified Belief?” and *Epistemology and Cognition* (Cambridge: Harvard University Press, 1986).

²⁸ However, Fumerton, in conversation with me, has expressed a worry that restricting the relevant inputs to those that are internal to the subject fails to account for the truth-conducive character of certain processes, such as those involving seemings-to-remember.

²⁹ Specification of the process is important in determining whether the belief carries *a priori* justification. I am well aware of the Generality Problem for reliabilism in all of its degrees, but there is not room here to address this issue. One possible outline for determining the relevant type is given by Alston: “The relevant type for any process token is the natural psychological kind corresponding to the function that is actually operative in the formation of the belief” (William Alston, *Beyond ‘Justification’: Dimensions of Epistemic Evaluation* (Ithaca: Cornell University Press, 2005), 126). Alston acknowledges that a process token can be a member of indefinitely many types; nonetheless, some of the types are “ontologically rooted, fundamental, and important in ways many others are not.” Alston thinks there is something like a ‘natural kind type’ for each process token, which is its *function*, and where the ‘relevant type’ would include all and only those process tokens with the same *causal registering* features. Refer to Conee and Feldman, “The Generality Problem for Reliabilism” for a detailed discussion of the Generality Problem.

4. Introspection and the *A Priori*

How does my view compare with the classical analysis? One fundamental difference rests in the treatment of 'introspection.' Does introspection count as sensory or non-sensory? Are introspective beliefs *a posteriori* justified? While these questions have posed significant difficulties for the classical appraisal, they can easily be answered under my account by reducing 'introspection' to certain belief-forming mechanisms. Thus, whether or not introspection is to be counted as *a posteriori* will be determined by examining the particular belief-forming mechanism's inputs.³⁰

Sense-experiences, emotions, and pains would be inputs yielding *a posteriori* justified introspective beliefs. For example, a sense-experience may be an input to a process outputting a belief about the physical environment, *or* to a process outputting a belief that I am having that sense-experience, the latter producing an *a posteriori* justified introspective belief. Belief-states and awareness of numbers would be inputs yielding *a priori* justified introspective beliefs. For example, a belief that the Padres won yesterday may be an input for a process yielding the belief that the Padres will win the pennant, *or* to a different process yielding the belief that I believe that the Padres won yesterday, the latter being an *a priori* justified introspective belief. It is *a priori* justified because the input to the unconditionally reliable process is *not* the sensory experience of watching the Padres win but the *belief-state*, and the *justification* of the second-order belief does not depend on the sensory-experience.

Notice here that under this account, introspection does not involve a (*sui generis*) non-doxastic awareness of the belief-state, which serves as a mediator between the belief-state and the second-order belief.³¹ Simply, introspecting a belief-state is *nothing more* than a process taking belief-states as inputs and outputting second-order beliefs about those belief-states. The belief is also non-inferentially justified because although the input into the process is a belief-state, the justification of the outputted second-order belief is independent of the epistemic status of the first-order belief – the belief-producing mechanism is unconditionally reliable. Even if the belief that the Padres won is false, my belief that I have that belief is justified.³²

³⁰ What is particularly nice about this account of introspection is that there is no need to rely simply on analogies to other kinds of experience, as the classical tradition did, to determine whether the justification of various introspective beliefs is *a priori* or *a posteriori*.

³¹ This account of introspection is only one among the standard models.

³² The relation of the *a priori* to introspection receives particularly careful discussion in the debate over the compatibility of semantic externalism with self-knowledge. For more

What might be some other possibilities for contingent *a priori* beliefs under this view? Evolution *may* have predisposed us such that upon mere contemplation of certain propositions, they are immediately believed.³³ Consider the case of contemplating the proposition “Big snakes are dangerous.” The input into the process is the contemplation of the proposition and the output is a belief in the truth of the proposition.³⁴ Other *possible* inputs³⁵ into this type of process may be the contemplations of “There is life after death,” “Most things have causes,” or “I exist.”

This account does make it, in principle, possible for any belief to have *a priori* justification, provided it can be formed reliably from a belief-producing process taking in non-sensory inputs. Even so, it is important to keep in mind what belief-forming processes are in point of fact going to turn out reliable in the actual world. One could hypothesize a case in which I have a process that takes as input the sensory-experience of a table and outputs the belief that $2 + 2 = 4$. If I am in a world where such a process does exist, then it does not seem unintuitive to conclude that the justification is a posteriori. Conversely, a scenario might be envisaged where I now have a process that takes as its input a mathematical belief and outputs a belief that Obama is the current president. By stipulating that the process both exists, and further, is reliable, the justification given to the belief about our president would turn out to be *a priori*.³⁶

Comparing this view again with the tradition, although this proposal retains the indispensable constituent of the classical analysis – a non-sensory source for *a priori* knowledge – it peels away most of the traditional characteristics of the *a priori*, such as certainty possessed by one who has *a priori* justification; infallibility of one’s justification; indefeasibility of one’s justification; and necessity of what is

discussion, refer to Peter Ludlow and Norah Martin, eds., *Externalism and Self-Knowledge* (Stanford: CSLI, 1998).

³³ An alternative way of characterizing beliefs of this type is to maintain that they result from an innate or genetically endowed reasoning mechanism, where a person has at her use an innate process which enables her to form logically accurate beliefs based on certain inputs. See Goldman “*A Priori* Warrant and Naturalistic Epistemology.”

³⁴ Obviously, here, I am not referring to a reliable process that is the contemplation of *this particular proposition* – “Big snakes are dangerous” – and the belief in it. Nor am I referring to the contemplation of all beliefs, for surely many false beliefs would end up in there.

³⁵ These are merely various *possibilities* rather than my considered views on the matter.

³⁶ In other words, when considering odd possible worlds in which there are odd but genuinely reliable belief-producing processes, it should not alarm us that apparently odd beliefs get classified as either *a priori* or *a posteriori* justified respectively. The oddity of these outcomes is not a function of the account, but of the possible worlds we are being asked to consider, and hence, does not necessarily represent a bona-fide counterexample to the position.

known *a priori*. This is allowable because under this reliabilist formation, what makes a belief justified is a simple matter of whether it results from a reliable belief-producing process. Furthermore, one can have *a priori* justification for a false belief – the process might only be slightly reliable.³⁷ Accordingly, since a reliabilist account of justification does not require the conditions of indubitability or infallibility for a belief to be justified, it follows that these are not necessary conditions for *a priori* justification. What is more, because there is both an inferential and a non-inferential *a priori* justification, self-evidence is also not a necessary feature of the *a priori*. Likewise, it is not clear that a proposition needs to be rationally unrevisable if it carries *a priori* justification. If one allows that *a priori* justifications do not guarantee the truth of the belief, then it is not clear that the possibility of disconfirmation undermines its *a priori* status. As we have seen, these beliefs may be contingent and so it makes sense that the inclusion of additional evidence may change the justificatory status of a belief.

Finally, given my assertion that many contingent beliefs can be known *a priori*, it is critical to disconnect the concept of necessity from *a priori* justification. But, it may be objected that if a person knows that *p a priori*, then “he can know that *p* without any information about the kind of world he inhabits. So, necessarily *p*.”³⁸ If the truth of the proposition depended on a contingent feature of the actual world, the argument goes, then how could one know the proposition without looking? Maybe, the arguer intimates, the actual world is one of the possible worlds where the proposition would have been false. Responding, Kripke explains that this relies upon the presupposition that “there can’t be a way of knowing about the actual world without looking that wouldn’t be a way of knowing the same thing about every possible world.”³⁹ Moreover, how a proposition can be known does not dictate its modal status. Still, the objector presses, if a belief may be possibly false, how can it be known to be actually true independent of an examination of one’s experience? In response, there is nothing outright problematic in having justification for a belief that is false. Secondly, this is a confused way of looking at the justification of a contingently true belief.

³⁷ Philip Kitcher is on the opposing side, disagreeing with the claim that there can be *a priori* warrant for a false belief. He alleges that *a priori* must be ‘ultra-reliable,’ guaranteeing the truth of the belief. In point of fact, reliable belief-producing processes are not required to be ‘infallible’ or ‘necessarily reliable’ – 100%. A process is reliable if it produces true belief at a “sufficiently great proportion” (perhaps, simply more than 50% of the time). See Philip Kitcher, “*A Priori* Knowledge,” *Philosophical Review* 89 (1980): 3-23.

³⁸ Kitcher, “*A Priori* Knowledge,” 17.

³⁹ Saul Kripke, *Naming and Necessity* (Cambridge: Harvard University Press, 1972), 38.

Justification does not require reliability over possible worlds, but only the reliability of the belief-producing mechanism in the actual world.⁴⁰

As we have seen, the analysis of the concept ‘independence from experience’ provided by the classical model is vague, at best. The principal advantage of this reliabilist naturalistic account is its ability to make plain this fundamental concept such that it allows for a clean division between the *a priori* and the *a posteriori*. On this view, some knowledge thought to be *a posteriori* comes out *a priori* (e.g. introspective knowledge of one’s belief-states). While it is not a new idea to argue that certain contingent propositions can be known *a priori*, my view is distinctive in that it allows for this in a different way than Kripke’s reference-fixing account. But, it is not the aim of this paper to take a stance on the status of particular – certain possible candidates were suggested in order to illustrate how the contingent *a priori* would be understood on this model. For, the significance of this theory lies not in the range of contingent propositions that can be *a priori* justified (this is only the icing on the cake), but rather in the creation of a new division between the *a priori* and *a posteriori* within a naturalistic framework, its most substantial contribution being that questions as to whether particular beliefs carry *a priori* or *a posteriori* justification is now clearly defined.⁴¹

⁴⁰ One could define reliability according to the actual world, by appeal to counterfactuals that hold true for this world, without needing to appeal to other possible worlds where the counterfactuals for this world are not true (i.e. the antecedent conditions do not obtain). On a possible worlds account of counterfactuals, it will be the closest possible worlds (and not all logically possible worlds) that are referenced for the truth conditions of the counterfactuals regarding reliability of the actual world.

⁴¹ For helpful feedback and conversation, I would like to especially thank Richard Fumerton.