



The Role of Certainty

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Abstract

I argue that we can achieve certainty about some empirical propositions. When someone is having a migraine and attending to it, she can be certain that she is in pain. I show that examples intended to undermine claims of certainty or to raise doubts about the reliability of introspection do not touch such cases. Traditional foundationalists have held that epistemically certain beliefs can serve as the basis for all one's other justified beliefs. This is not so, because those beliefs that are certain are spread too thinly to serve as broad justificatory foundations. Certainty has a different role. The best explanation for the existence of epistemically certain empirical beliefs is experientialism, the view that nondoxastic sensory experiences can justify beliefs. Experientialism then offers a framework for showing how the stream of sensory experiences can provide an adequate basis for the justification of our ordinary beliefs about the external world.

1 The Critics of Certainty

Epistemically certain propositions have been seen as the bedrock upon which any justification for ordinary empirical propositions must rest. C. I. Lewis' well-known claim, "If anything is to be probable, then something must be certain," had already been given a more specific articulation by Leibniz: "If immediate inner experience is not certain, we cannot be sure of any truth of fact" (Lewis 1946, 186; Leibniz 1981, 238).

"Certainty" is one of a family of terms, including "infallibility," "indubitability," "incorrigibility," and "self-presentation," that have had evolving and overlapping meanings. I take beliefs to deserve the "certainty" designation if they can survive skeptical challenges in ways that other beliefs appropriately described as items of knowledge cannot. Sufficient conditions for certainty in this sense will be offered in what follows.

Foundationalism languished in the last half of the twentieth century, in part because of claims that *no* empirical propositions could be certain. This critique of certainty has become the conventional wisdom, from Quine's "No statement is immune to revision"

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(1951, 40) to Dennett's "There is no proposition about one's own or anybody else's conscious experience that is immune to error, unlikely as that error might be" (2002, 13). While foundationalism has enjoyed a recent revival, most revivalists have articulated modest versions of the theory that do not rely on claims of empirical certainty. I will argue, however, that establishing such certainty can provide important support for the foundationalist program—just not in the way traditionally imagined.

There has been general agreement on both sides of the certainty debate that introspective beliefs about conscious experience are the best candidates for epistemically certain propositions, if any are to be found. Recent critics of certainty have appealed to a number of empirical studies indicating a sometimes surprising degree of error regarding a person's introspective judgments. However, it is far from clear that this evidence entails that there are no epistemically certain empirical propositions.

Examples challenging certainty often rely on instances of perceptual inattention or inability to attend (for example, Dennett 2002, 15–16, points to the unnoticed lack of color sensations at the edges of one's visual field) or hypothesized individuals who have bizarre semantic confusions about the scope of sensation concepts (for example, Lehrer, 1974, 95–96, on confusing pains and itches). Other critics note elements of phenomenal experience that are typically not immediately graspable—for example, the traditional speckled hen problem wherein it is not immediately evident how many speckles there are in one's visual field. Also noted are cases that require reliance on long-term memory or complex comparative judgments (for example, Dennett again 2002, 14–15, with an example pertaining to the comparison of original and recent taste preferences over the years, and Churchland, 1988, 78, imagining a person who has not felt pain for decades, suddenly re-experiencing the sensation). In another oft-cited example, a sensation initially feels like its opposite. Told that one's throat is going to be cut by a knife or touched by a burning piece of metal, one can for a few seconds seem to feel something hot when an icicle is drawn across one's throat.

Schwitzgebel (2008) offers a number of challenges to the reliability of introspective beliefs. He points to the unreliability of judgments about one's emotional states. Am I always correct when I sincerely deny that I am angry? He notes that, contrary to common belief, "visual experience does not consist of a broad, stable field, flush with precise detail, hazy only at the borders" (Ibid., 256). We are misled to the mistaken introspective belief by the unnoticed rapid movement of our eyes. In fact, more careful attention reveals that "the center of clarity is tiny, shifting rapidly around a rather indistinct background" (Ibid.).

Note, however, the complexity of the judgment about one's visual field being made in Schwitzgebel's example. It is a general judgment about the overall nature and scope of our visual introspection rather than an ordinary perceptual or introspective judgment. It is not the sort of thing we usually think about at all, and there is no reason to believe that any unreliability here undermines the reliability of more typical and simple introspective reports, such as that I am in physical pain or that I seem to see something red. As for beliefs about our emotions, these are often quite complex. Emotions like anger and hate have a cognitive component that can make introspective reports about them prone to error, especially given common cultural admonitions to children that it is unacceptable to harbor such "negative" emotions.¹

¹ On the cognitive component of emotions, see Nussbaum (2001).

Eugene Mills pinpoints the sorts of cases these criticisms significantly omit:

It is old news that an *unrestricted* thesis of phenomenal infallibility founders on compelling counter-examples. Still, over [a] restricted range—of attentive, reflective claims to the effect that an ordinary, well-lit patch looks red—infallibility seems strikingly plausible.²

Mills is surely right that those who defend a strong epistemic status (whether called certainty or infallibility) for propositions about one's experiences must make some qualifications about the types of propositions that can have this status. If the early modern philosophers really did hold that *all* mental properties and states are entirely open to introspective awareness and to epistemically certain judgment, then that is clearly an overstatement.³ But the defense of certainty does not require such an unqualified view. That a person may lack certainty about her experiences in the sorts of cases noted above, where conceptual competence or perceptual conditions are sub-optimal, or where relatively complex comparative judgments are called for, does not entail that she lacks certainty about her experiences in every situation. Specifically, simple introspective judgments about occurrent sensory experiences, under conditions of perception in which a person is conceptually competent and attentive to those experiences, and in which there are no issues about how to categorize borderline-area sensations, remain prime candidates for the formation of epistemically certain contingent beliefs, not touched by prominent objections. Examples include beliefs expressed by "I am in pain," "I am being appeared bluely to," and "It at least seems to me that there's a red object in front of me."⁴

² Mills (2002, 385). See also Horgan and Kriegel (2007). The latter paper is similar to one section of the present paper in offering responses to claimed counterexamples to certainty or infallibility. Horgan and Kriegel's account of a "bracketing mode of presentation of phenomenal character" (Ibid., 128), used in their defense of a restricted infallibility thesis, seems problematic. It relies on the idea of a mode of presentation in which the truth or falsity of a subject's background presuppositions does not affect the phenomenal content of the belief relating to that mode of presentation. But when presuppositions *do* affect phenomenal content, it would seem that Horgan and Kriegel's analysis could not be applied. And there may be many such cases—cognitive penetration regarding color perception, psychological attitudes toward memories of past pain experiences, and so on. The present paper discusses a wider range of counterexamples and addresses cases such as cognitive penetration where background beliefs do affect phenomenal content.

³ "As to the fact that there can be nothing in the mind, in so far as it is a thinking thing, of which it is not aware, this seems to me to be self-evident" (Descartes 1988, 130). Such passages have suggested that early modern philosophers are committed to the idea that a subject has introspective certainty regarding all his mental states. But, at least in Descartes's case, this cannot be squared with his claim that some mental states, including but not limited to emotions, are confused: "The passions are to be numbered among the perceptions which the close alliance between the soul and the body renders confused and obscure" (Ibid., 229). Passions are kinds of "thoughts" (Descartes's broad term for mental states), but they lack clarity and distinctness in at least some of their aspects. Thus, Descartes, at least, could not have held the view that every mental state or subjective experience is certain in every respect, in spite of some ambiguous language that perhaps led to the doctrine being attributed to him.

⁴ Some defenders of certainty (for example, Klein 1981) argue that ordinary propositions about the external world can be certain. But most philosophers sympathetic to empirical certainty think that such propositions are vulnerable to skeptical evil demon scenarios. Schwarz posits absolute certainty for a special class of "imaginary" propositions (analogous to imaginary numbers in mathematics), which do not represent cognitively transparent features of occurrent sensory experiences, but which can influence an agent's subjective probability function with respect to the status of ordinary external-world propositions (2018, 775, 779–80). Schwarz's account is necessitated by his assumption that beliefs that do transparently represent sensory experiences cannot be certain. My argument that we can have such certainty makes it unnecessary to introduce this additional machinery.

2 Sufficient Conditions for Certainty: Two Principles

When I was 13 years old, I tried to impress a friend with my ability to leap medium-sized objects in a single bound. I failed to clear one, and came down on the other side, bracing my fall onto the concrete floor with my hands. Both wrists were badly sprained. The aspirin I was given that night was not adequate to the task. I still remember the sleepless night when I could think of little else but the pain.

Sometimes it can take a bit of reflection to note the existence and nature of a particular pain. In the case of the pain I experienced that night, though, it was so intrusive that it was difficult to attend to anything else. In such a circumstance, my belief expressed by “I’m in pain” was surely justified for me. This straightforward judgment about an intense experience is a good candidate, if anything is, for something I could be certain of while I was experiencing that pain. It would have been odd for someone to ask whether I was really certain I was in pain, and entirely appropriate for me to respond that I was indeed certain. Call my “I’m in pain” belief a *category* experiential belief, since it categorizes the experience as a pain.

There is another sort of belief about one’s occurrent experience that is a more controversial candidate for certainty. It is the belief expressed by, for example, “Right now, my experience is *this*” where “this” refers ostensibly to the quality of the experience attended to. An instance would be an ostensive reference to the particular hue of the color experience the subject is focusing on. In such a case, the subject is not categorizing the experience of the color as blue, say, even if he would call the color blue if he were making that sort of categorial judgment. He is simply referring to the quality of the experience he is having. Call this a *demonstrative experiential belief*.

This type of belief can be formed when, for example, the subject maximally retreats from an ordinary external-world belief like that expressed by “the box is blue” to focus on what he is experiencing, whether that experience is one of an actual blue box, a box that only looks blue because of the lighting, or a hallucination. Perhaps the color he says he is experiencing has been challenged. “The color you’re experiencing right now isn’t blue, it’s green!” In such a case, the subject might drop his concern about categorizing his experience as blue or green, and adopt a demonstrative belief to the effect that, whatever anyone may call it, he is now having *this* experience, referring to the aspect of his experience that is the object of his attention. (The subject may categorize the experience as falling within a general sensory modality, such as seeing or touching, but he does not make any commitment regarding the categorial distinctions within that modality, for example, *blue, smooth*.)

In general, an experiential belief, whether categorial or demonstrative, is a subject’s belief about a sensory experience that she herself is now having. Sensory experiences, as I am understanding them here, are nondoxastic mental states involving one or more of a creature’s sensory modalities.⁵ While these sensory experiences are themselves nondoxastic, conceptually competent adults can of course come to form beliefs *about* them. Some such beliefs are naturally directed toward the sensory experience itself, for example, beliefs expressed by “I’m in some pain” or “I’m experiencing a bright green after-image.” Others are related to propositions about external objects or their

⁵ See Section 4 below for a discussion of differing foundationalist approaches to the question whether the relevant sorts of sensory experience are conceptual or nonconceptual in content.

properties, in which the subject holds off fully endorsing the external nature of what is perceived in order to focus on the experience itself, for example, “The object in front of me appears to be blue” and “The stick looks bent.” All experiential beliefs, as understood here, are relatively sophisticated in that the subject must understand the appearance/reality distinction, be aware that appearances can be deceptive, and be referring only to the sensory experience she is having, without making any commitment about what that experience may represent externally. In the case of demonstrative experiential beliefs, the subject additionally refrains from using any categories specifying the type of experience she is having.

The following principles express sufficient conditions for certainty pertaining to these two types of experiential belief. I will defend these principles against counterexamples, which, unlike the criticisms of certainty noted above, tackle head-on cases of the type that Mills notes—cases with no issues of conceptual confusion, lack of attentiveness from the subject, or borderline classification problems. The first of these principles formalizes the idea that an empirical belief is certain for *S* when it is based on and categorizes *S*'s occurrent sensory experience such that no additional evidence *S* might acquire could undermine that belief. The second principle states sufficient conditions for the certainty of a type of demonstrative belief about *S*'s occurrent sensory experience.⁶

Categorial Certainty (CC) If *S* is having sensory experience *e* such that (i) *S* believes *p* on the basis of attending to some feature *F* of *e*, where *p* is the belief that *S* herself is now having a sensory experience of *F*, and (ii) there is no *q* such that it is concurrently possible that condition (i) obtains and that *S*'s evidence for *q* makes it more reasonable for *S* to withhold belief that *p* than to believe that *p*, then *p* is epistemically certain for *S*.

Demonstrative Certainty (DC) If *S* is having sensory experience *e* such that (i) *S* believes *p* on the basis of attending to some experiential aspect of *e*, where *p* is the belief that *S* herself is now having *this* sensory experience and where the demonstrative reference is to the aspect of *e* that *S* is attending to, and (ii) there is no *q* such that it is concurrently possible that (i) obtains and that *S*'s evidence for *q* makes it more reasonable for *S* to withhold that *p* than to believe that *p*, then *p* is epistemically certain for *S*.

If a belief *p* satisfies conditions (i) and (ii) of CC, then it has a striking property showing the great resilience of *p*'s epistemic status for *S*. It would seem an understatement to call such a belief merely reasonable, beyond reasonable doubt, or evident. That would be a failure to capture the real strength of the belief. There are many propositions that we consider beyond reasonable doubt, evident, or even known, but that do not satisfy the conditions of CC—for example, propositions about the evolution of species and about the guilt of a defendant given compelling evidence presented to a jury.

⁶ These principles are to be understood as needing only to be *true of S*, not *applied by S* to her occurrent experience. See Van Cleve (1979) and further discussion in the text below for details.

Indeed, any proposition about the external world would seem to be capable of being undermined by concurrent evidence that makes it reasonable for me to believe that I am actually a brain in a vat, that I am being toyed with by an evil demon, or that Nick Bostrom's computer simulacrum scenario is right (Bostrom 2003). If any belief about one's occurrent experiences can survive reasonable belief in such skeptical scenarios, "certainty" in regard to that belief seems to be the most appropriate appellation.

All but the most eliminativistic of qualiaphobes will allow that beliefs of the sort described in CC—exemplified by "I'm experiencing pain" or "I'm experiencing red in my visual field"—can secure a successful reference and be justified for the subject. The main controversy concerns whether such beliefs attain the status of certainty.

DC raises questions about the nature of the demonstrative experiential beliefs it describes—specifically, whether they could have nontrivial content or secure successful reference. Critics might worry that any such beliefs are tautologous: "I am having the experience I am having." Philosophers influenced by Wittgenstein might maintain that there can be no private language and no epistemically significant private ostension of sensations or other inner experiences as is required by the sort of belief or belief-candidate described in DC. But careful descriptions of beliefs of this sort by Brie Gertler, David Chalmers, Benj Hellie, and Daniel Stoljar have helped make the existence and contentful nature of such beliefs plausible.⁷

Since demonstrative experiential beliefs, like all beliefs, are propositions containing concepts, the question arises what sort of concept is employed when a subject forms a demonstrative belief about her experience. Chalmers (2003, 235) designates as a "direct phenomenal concept" one capable of fulfilling this role:

The clearest cases of direct phenomenal concepts arise when a subject attends to the quality of an experience, and forms a concept wholly based on the attention to the quality, 'taking up' the quality into the concept. . . . [A direct phenomenal concept is] a concept whose content is based entirely on the character of the experience.

In the case I described above, where it has been challenged whether the hue the subject is experiencing is really blue, the subject can form a direct phenomenal concept by attending to the specific hue that he is experiencing at that moment. Per Chalmers, the concept's whole content just is that specific hue. What I am calling a demonstrative experiential belief, then, is a belief employing such a direct phenomenal concept.⁸ In the case under discussion, the content of the belief would be that the subject himself is

⁷ See Gertler (2001), Chalmers (2003), Hellie (2004), Stoljar (2016). Many expressions of demonstrative beliefs, following Nagel (1974), are in terms of what the experience is *like*. Following Gertler (2001, 320–21), I dispense with the term "like" in my characterization, to avoid any suggestion that a comparative judgment is being discussed.

⁸ My use of the phrase "demonstrative experiential belief" corresponds to what Chalmers calls a "direct phenomenal belief" (2003, 236). Chalmers holds that a direct phenomenal concept (identified at this stage of his argument as the concept *R*) "is not a demonstrative concept in the usual sense" (Ibid., 229). So he would not want to call a belief incorporating that concept a demonstrative belief. Chalmers's reasons for wanting to avoid such terminology concern ontological matters that are not at issue here.

now experiencing *C*, where *C* is a direct phenomenal concept that has as its content the hue that is now the object of the subject's focal attention.

In Chalmers's analysis, a phenomenal concept rigidly designates the experienced quality attended to, for example, a determinate hue.⁹ The experiential belief taking up that concept is informative because it is not true in all possible worlds, even ones otherwise quite similar. The belief refers determinately because the concept, as a rigid designator, fixes the hue. So there is nothing tautologous or uninformative about the belief expressed by "My visual experience right now is *this*."

By way of illustration: When I was a kid my brother and I had a dispute about the color of the family car. I was flummoxed by his insistence that our green car was blue. I stared at that car, focusing on its color, long enough and frequently enough that to this day I can—I think accurately—recall its hue as I experienced it. In fact, my brother was neither blind nor obnoxious. Subjects with normal vision vary significantly regarding the effect of external stimuli on their determinations of unique or pure hues (those hues experienced as having no admixture of other colors). An external stimulus that systematically produces the experience of pure blue in one subject might systematically produce an experience of greenish blue, or even pure green, in another.¹⁰ Clearly, my brother and I differed enough in this regard that an object that appeared green, albeit tinged with blue, to me, appeared blue tinged with green to him. In another possible world in which my visual apparatus responded to stimuli just as my brother's did, I would have experienced a different hue—the one he experienced in the actual would—and I would have agreed that the car was blue. In the actual world, when I dropped my concern about how the color was to be categorized and focused on the hue as I was experiencing it, my demonstrative experiential belief regarding that hue was informative—it marked a different experiential fact and employed a different direct phenomenal concept from the one that would have been involved in the slightly different possible world where I experienced colors as my brother did.

Here there is nothing tautological about my demonstrative belief. It meaningfully distinguishes my actual experience from alternative possibilities. Nor is there any reference to a private language. "This" is a perfectly fine word in a public language. If I may use it to ostensively refer to an external object singled out, in my immediate environment, from nearby objects, why cannot I use it to single out a particular afterimage out of an array of such images occurrently presented to me, or a particular patch of color from the many presented in my visual field, when I am focusing on the color sensation itself and not the external object causing it?

I believe that both categorial and demonstrative experiential beliefs are contentful and can satisfy the conditions of CC and DC, respectively. If this is so for instances of *either* type of belief, this suffices for establishing the existence of epistemically certain empirical propositions. In the next section, I will consider counterexamples to paradigm cases of these beliefs, such as my categorial belief, in the case of my sprained wrists, that I am in pain, and a demonstrative belief that might be expressed as "I am now

⁹ Following Chalmers, my treatment of rigid designators is to be understood as picking out the same object in all epistemically possible worlds, not all logically or metaphysically possible worlds. See Chalmers (2003, 228, 268–71), for details on how he would analyze the intensionality of a belief containing a direct phenomenal concept.

¹⁰ Reported in Hardin (1988, 39).

having *this* experience,” where the subject is attending to the hue of an occurrent visual experience.

3 Proposed Counterexamples and Responses

Critics of the certainty of experiential beliefs have largely focused on categorial beliefs, so I will turn to these first. While many such critics have cherry-picked their examples to focus on perceptual or introspective conditions that are less than ideal for certainty, a few examples do challenge even the seemingly most straightforward categorial judgments about one’s sensory condition, where a conceptually competent, attentive subject makes a categorial judgment about her sensory experience in which borderline classification issues and other complications are absent.

3.1 Autocerebroscopes in Light of a Complete and Adequate Theory

One of the older such examples is the autocerebroscope argument. Suppose that a scientist has designed a cerebroscope successfully correlating brain states and sensory experiences. The scientist, using the machine on herself, encounters an anomaly. Her subjective experience of color or pain differs from the experience the machine says she should be having. The claim of the autocerebroscope argument is that her justification for believing that she is experiencing green or that she is in pain is defeated, even if her subjective and attended-to experience is of bright green, or of strong pain.

I believe that Sydney Shoemaker is right that the argument for defeaters in such cases does not sufficiently respect the first-person perspective. Regarding the claim that a machine readout could defeat one’s belief that one is in pain, Shoemaker notes (1996, 163):

While I am willing to allow that there are circumstances in which a sincere self-ascription of pain can be mistaken, I am not willing to allow that someone might be in excruciating pain and yet that it might seem to him, when he reflects in a calm and unflustered way on his state, that he feels no pain at all. . . . And yet that is what would have to be possible if the seeming evidence of the autocerebroscope were overriding in such a case.

Shoemaker’s point is supported by noting the interacting complexities among the sensory experiences, the theory correlating these with brain states, and the machine design. Such complexities point to the realistic possibility that the theory is incomplete or that some part of the machine has been poorly designed or has malfunctioned. These considerations offer plausible explanations why machine readouts may be mistaken. It seems a hard row to hoe to find a correlative equally plausible explanation why experiential beliefs in the case described by Shoemaker, or my sprained wrists case, might be mistaken. When the subject is attending to a clear visual experience of green, the possible concurrent evidence she could have that her autocerebroscope report says that she is experiencing red would not be sufficient to undermine her belief that she is experiencing green. The likelihood of theoretical or machine error when there is such a

discrepancy between the experience and the machine readout means that it is not more reasonable for the subject to withhold belief about her experience than to continue to maintain the belief.

Suppose an objector tried to further press this case and hypothesize that the theory correlating machine readouts with specific subjective experiences has been shown to be as complete and adequate as any that humans might come up with. In such a case, another kind of response becomes appropriate: Assuming we could ever achieve such confidence in a scientific theory of this nature, it is reasonable to think that—the science having gotten the correlation right—the anomaly proposed in the alleged counterexample cannot arise.¹¹

3.2 Cognitive Penetration

The phenomenon of cognitive penetration could be used to challenge the certainty of experiential beliefs. The most relevant examples involve experiments in visual perception suggesting that background knowledge can affect the hue perceived. When different shapes are cut from the same uniform orange paper, subjects are inclined to perceive shapes of characteristically red objects—a heart, an apple—as redder than shapes not associated with red—an oval, a square, a mushroom.¹² The critical suggestion would be that perceived hue depends on higher-order thinking in a way that the subject is not aware of and that the subject can hardly be certain of a belief about hue perception given such an unexpected etiology. But this phenomenon does not in fact challenge the certainty of relevant cases of hue perception, which concern experiential beliefs, not beliefs about external objects. The situation may be compared with the disagreements about the color of my family's car discussed above. In that case, due no doubt to slight differences in how my brother's and my visual systems are organized, there are causal precursors to and explanations for our experiential differences. Nevertheless, my experience fixed a specific hue distinct from my brother's. There is no difference in the case of cognitive penetration, except that the causal explanation for perceived hue comes from prior cognitive learning, in this case cultural knowledge.

3.3 Dreams and Encounters with Alien Neurosurgeons

Eric Schwitzgebel notes (2008, 253) the possibility that one might, in a dream, judge erroneously concerning what colors one is experiencing:

¹¹ This is a more qualified articulation of a point made by Pappas (1975). Bailey (1979) rightly notes that Pappas's argument in support of the incorrigibility of subjective reports of sensations makes the overly general claim that in order for a future scientific theory to count as confirmed or well-established, conflicts between observations and theory will not in fact arise. Pappas's response to Bailey (1980) does not appear to me to engage with Bailey's criticism. Pappas ought to have narrowed the scope of his claim so that it referred only to the sort of hypothetical (and unlikely) theoretical development I note in the text.

¹² For a detailed description of experiments suggesting cognitive penetration, see Macpherson (2012). For general discussions see *Ibid.*, Siegel (2012), Silins (2016), and Wu (2017). These discussions focus on the problem cognitive penetration presents for the justification of beliefs about the external world or scientific hypotheses. My concern by contrast is with the influence of cognitive penetration on the justification of experiential beliefs.

In dreams we make baldly incoherent judgments. . . . I think I can protrude my tongue without its coming out; I think I see red carpet that's not red; I see a seal as my sister without noticing any difficulty about that. . . . If you admit the possibility that you are dreaming, I think you should admit the possibility that your judgment that you are having reddish phenomenology is a piece of delirium, unaccompanied by any actual reddish phenomenology.

Dream arguments traditionally have been meant to create doubts about the reality of the external world or specific external-world beliefs. In the present case, by contrast, a successful counterexample would have to undermine the reasonableness of an experiential belief. I do not believe Schwitzgebel's proposed counterexamples succeed in doing this.

Antecedent conditions of CC and DC only apply if *S* is having a sensory experience, engaging with focused attention on that experience, and believing a proposition directed toward some aspect of that experience. In addition, the subject of the experience has to be in an epistemic state such that she can have evidence for beliefs, have that evidence be potentially undermined by counterevidence, and so on.

In dreams, it is questionable whether one has the intentional attitudes of attention and belief and whether one can be in the requisite epistemic state. If these conditions are not compatible with *S* being asleep and dreaming, then the antecedents of CC and DC are not satisfied, and no counterexamples to them can be generated. Concerning Schwitzgebel's specific examples, it is not clear that there can be any contentful judgment that I can protrude my tongue without it coming out or that I see a red carpet that is not red. Perhaps in dreams there are only images of strings of words rather than the formation of any actual propositional attitudes, at least in the case of such putative beliefs as these.¹³

But suppose that the requisite intentional and epistemic states do occur in dreams, at least in some kinds of dreams. After all, many people say they have experienced extremely detailed and lucid dreams in which, for example, a colored object is scrutinized with care. Arguably, the belief that one is having an experience of red might be an actual belief state in some such dreams, just as legitimate a belief as one formed in a waking state. Similar considerations might apply to the belief that one is in pain. Since the conditions for CC require that the subject, in this case the dreamer, be attentive to his occurrent sensory experience, and that the belief at issue must be based on that attention, these intentional conditions also must be satisfied in a dream in order for the proposed counterexample to be in play. The defender of the dream counterexample would then maintain that all the preconditions of CC are fulfilled, and yet the dreamer cannot be certain of any proposition, on the grounds that there is defeating evidence the dreamer could have, such as the possibilities Schwitzgebel presents, that would make it more reasonable for the dreamer to withhold belief concerning his sensory experience than to retain that belief.

This objection does not work. If we grant the dreamer the genuine intentional states described above, it is arbitrary and unmotivated to then deny the dreamer the right to have epistemic standing regarding what is attended to. Granted the premise that the dreamer forms the belief that he is now having an experience of red based on actual attention to how things seem to him, there is no reason to deny that the dreamer does

¹³ See Sosa (2005) for a defense of the imagination model of dreaming, according to which genuine beliefs are not formed in dreams.

have an experience of red and that he can be certain of this. The possibility that somehow he is judging deliriously that he is experiencing reddish phenomenology, unaccompanied by any actual reddish phenomenology, is as evidentially remote to this sort of dreamer as it is to the waking person.

Moving from dream cases to waking (if fanciful) ones, Schwitzgebel offers another reason to doubt introspective reports based, again, on an attempt to exploit a belief/experience divide. He imagines malevolent neurosurgeons from Alpha Centauri directly producing in one a belief that one is having a sensory experience of a certain kind, a belief that is false because the alien doctors have suppressed the experience itself (2008, 253–54). Schwitzgebel's presentation of this case suggests that we should consider its implications supposing the Alpha Centaurians somehow succeed in creating this belief/experience cleavage. But if this were so, the antecedent conditions of CC would not be satisfied. The Alpha Centaurian's unfortunate human subject is no longer epistemically whole and is arguably incapable of having *any* justified beliefs. At any rate, he is not able to form any experiential beliefs on the basis of his occurrent sensory experience, since by hypothesis he is not now having any such experience.

For something along the lines of Schwitzgebel's scenario to work against CC, we need to imagine a subject having an apparently realistic series of experiences as of being sent to Alpha Centauri, given alien hospital garb that is even more ill-fitting than the human kind, and so on. We then imagine the subject having an experience of intense pain, say, and basing his belief that he is in pain on that experience. All this while he appears to be in the presence of aliens who insist that they have successfully bifurcated his belief and experience modules. In such a case, the subject's reasonable response can and should be that the operation has not succeeded. "Maybe what works for your Alpha Centaurian patients doesn't work in the case of us humans," he could justifiably respond to the Alpha Centaurians. "I'm attending not just to what I believe but to this throbbing sensation, and let me tell you it's still there. You'd better rewrite your textbooks on alien biological systems. Medical science is complex enough even before you get to species from other solar systems!"

One might object that if the belief/experience bifurcation is a real possibility—or even a remote one—the subject must know that such a bifurcation has not occurred in order to be certain that he is in pain. But CC does not require such knowledge. In general, the antecedent of CC need only be true of a subject in order for him to have certainty. It does not require that the subject be aware of the principle itself or know that its antecedent conditions are satisfied. The objector might insist that CC is an inadequate account of certainty because, in order for the subject to be certain, he must know these things. The question is why. To insist that an ordinary person understand an epistemic principle and be able to apply its conditions to his present experiential situation is to make an unreasonable demand about metaknowledge.¹⁴

3.4 Expert Testimony Contrary to the Subject's Sensory Experience

Earl Conee proposes a more down-to-earth counterexample. He claims that a defeating argument for any phenomenal experience can be obtained by expert testimony to the effect that the subject only *appears* to be having that experience and that studies have shown that subjects who are in just the condition our subject is in invariably believe that

¹⁴ See Section 3.6 for further discussion.

they are experiencing pain, for example, when in fact they are not doing so at all—they are in a neurological state that induces the illusion of feeling pain. Conee allows that the expert testimony need not be correct, plausible, or even coherent. But he maintains that if the subject has good reason to believe that the expert is credible and that the expert has on past occasions demonstrated the truth of extraordinary claims, then the subject's belief that she is in pain could be defeated (Conee 2005, 448–49).

I do not think this is right if the phenomenal experience is intense and non-borderline. When we ask whether the experiential belief is defeated in such a case as this, care must be taken to keep in mind that an easily classified and intense phenomenal experience (as in the case of my sprained wrists) is continually present, while the evidence denying the phenomenal experience is being weighed. It is easy to discount the force of the sensory evidence if one imagines that, say, the expert's explanation distracts the subject from the pain so that it is no longer noticed or is experienced less intensely. The expert's supposed distinction between actual and apparent experiences is, as Conee acknowledges, "decidedly dubious" (2005, 448). If the subject is really weighing the expert's implausible claim, he must understand it and not merely be overwhelmed by the expert's rhetorical powers. He must understand that the expert is saying (while the subject is experiencing intense pain), "The state you're in – it's not really pain at all." When the subject sees that this is what the expert's testimony amounts to, and compares that with his occurrent sensory experience, he has every reason to conclude that the expert and his theories are wrong. Even if the subject knows that the expert has demonstrated the truth of extraordinary claims in the past, the subject should still, as long as he is attending to his current pain, resist the particular argument now being put before him: "I know this guy has shown me amazing things in the past. But that I'm not now in pain? Too bad. I guess he got too full of himself and has gone off the deep end."¹⁵

What if the subject himself has not really thought through the implausibility of the so-called expert's claimed distinction between an actual and a merely apparent intense pain? Such a subject might be more inclined than more careful thinkers to give in to the persuasive power of an apparent expert who tries to explain that his migraine is not painful at all. But he will be epistemically remiss in doing so. This does not change our assessment of the epistemic norms. What is different is our assessment of the subject. A credulous subject is one who does not come up to the standards a good epistemic agent ought to have.

Suppose though that the subject is not even *capable* of working through the implications of what the expert is saying and weighing those in relation to his occurrent intense experience. In that case, he has not yet attained full epistemic agency. It is worth noting that those who have trouble with the appearance/reality distinction concerning simple perceptual propositions are typically children. Just as we do not think of them as having attained full moral agency, so we should not think of them as fully mature epistemic agents.

3.5 Anti-luminosity

Timothy Williamson's anti-luminosity argument appears to attack the certainty of straightforward introspective reports such as that I am in pain or that I am appeared

¹⁵ Similar considerations apply to putatively expert testimony that the subject has forgotten what "pain" means, or is applying the concept to the wrong sort of thing, and thus that what the subject is experiencing is not actually pain. And of course, in the case of demonstrative experiential beliefs, the concept *pain* is not used and questions of misapplication cannot arise.

redly to. He claims that “there is no central core of mental states” such that “if S belongs to that core, then whenever one attends to the question one is in a position to know whether one is in S” (2000, 93). In arguing for this, Williamson defines a condition C as luminous if and only if “for every case α , if in α C obtains, then in α one is in a position to know that C obtains” (Ibid., 95). Williamson’s claim is that no interesting condition—including mental states such as being in pain, or feeling cold—is luminous.

But Williamson’s anti-luminosity argument is not the threat to certainty that it might initially appear to be. His argument depends essentially on the difficulty of knowing whether (to use the example Williamson focuses on) one feels cold when one is experiencing a borderline case of being cold. This argument is more sophisticated than the attempted counterexamples that merely posit borderline-case perceptual conditions, and thus deserves separate attention.

Williamson’s definition of luminosity does not entail that if a condition is not luminous, one is *never* in a position to know that one is in that condition. Williamson acknowledges this when, in an exchange with Matthias Steup, he accepts Steup’s claim that some experiences are discernible, where, when one has discernible experiences, “one is in a position to know one has them” (Steup in Greenough and Pritchard 2009, 235). Williamson agrees with Steup that “the conclusion of the anti-luminosity argument is compatible with *most* of our experiences as of **p** being discernible experiences as of **p**” (Williamson in Greenough and Pritchard 2009, 373). An experience as of cold when one stands outside for some time without a jacket in 10°F temperatures with a twenty-mile-an-hour north wind is a discernible experience of cold. The *general* condition *being cold*, which can be true across many varying individual situations, from just noticeably uncomfortable to bitingly frigid, may well not be a luminous condition. Ditto the *general* condition *being in pain*. But this is not to the present point. That these general conditions are not luminous does not prevent specific tokens of them from being such that epistemically certain beliefs can be formed about them. Luminosity itself, or its lack, is not an interesting condition relative to the question of the certainty of some experiential beliefs.

To this point we have been considering these proffered counterexamples as challenging the certainty of categorial experiential beliefs. It is hard to see how any of them could challenge *demonstrative* experiential beliefs. Most of these counterexamples try to drive a wedge between the experience and the way the subject is categorizing it, for example, as pain or as blue. But no such categorizations are involved in demonstrative beliefs. Any successful counterexample would have to plausibly claim that in spite of the subject’s belief that an attended-to visual experience is *this*, the subject has a defeating reason to believe that the experience referred to really is not *this* at all, but something different, or nothing at all. It is difficult to see how this case could be made.

3.6 Does Certainty Require Being Certain that One Is Certain?

Concerns about both CC and DC can be raised by those who would demand iterativity—certainty that the conditions for base-level certainty have been met—before a base-level experiential belief can be regarded as certain. If the subject has not reflected on conditions (i) and (ii) of CC and DC, and by such reflection achieved certainty that they obtain, then how can she be certain of *p* itself?

Such higher-level certainty is not in the cards, but the question whether one can be certain that one is having a particular sensory experience should not require an impossible-to-

achieve certainty about epistemological theories and principles. The question is whether CC and DC can be *true of* a subject, not whether the subject can *apply them* or even have given any thought to them.¹⁶ While attentiveness to the evidence one has for one's belief that *p* can be reasonably required of the subject in order for her belief to be certain, CC and DC are intended to describe the requisite attentiveness. The subject is attending to the experience as such. She understands that she is only concerned with the experience or experienced feature itself, not with anything such an experience might say about what is true of the world outside her experience, and not with what other people say they experience in a similar situation or what they think she ought to be experiencing. I have noted that this does require a certain amount of epistemic sophistication, but not to some level that cannot be reached given the capacity for evidential reasoning available to the ordinary adult, or even to the 13-year-old boy I was when I sprained my wrists.

I believe that the attentiveness required of the subject according to CC and DC is both sufficient for certainty and common enough to occur in ordinary contexts, as when doctors ask about a patient's occurrent pain or when disputes occur about colors or other sensory qualities.¹⁷ The question is not whether some stronger epistemic status can be described—perhaps one attainable only by the most adept epistemologists. Rather, it is whether an epistemic state that meets the conditions of CC or DC is of substantive interest and use. It seems clearly so, since beliefs that do meet those conditions are not susceptible to the defeat that attends to ordinary empirical propositions about the external world. Since we can say we know many of those ordinary propositions, even though they are subject to defeat, it is reasonable to use a stronger term like certainty to describe the unusual resistance to defeat of some experiential propositions.

4 Certainty and Experientialism

In this section I argue that experientialism is the best explanation for the certainty that accrues to some empirical beliefs. Experientialism is the claim that nondoxastic sensory experiences can and do justify some beliefs.¹⁸

¹⁶ See Van Cleve (1979) for the classic articulation of this distinction.

¹⁷ Speaking of the related concept of incorrigibility, Chalmers (2003, 245) argues that “intermediate accessibility requirements” may be required for incorrigible belief. The attentiveness conditions of CC and DC are intended to meet such requirements.

¹⁸ A matter of some debate among foundationalism-friendly epistemologists is whether sensory experiences must have conceptual content if they are to have justificational force. All foundationalists agree that these sensory justifiers are not beliefs, for if they were, regress would threaten. Foundationalists in the tradition of Price have held that sensations without conceptual content can justify (Price 1964; Moser 1989; BonJour 1999). Several contemporary foundationalists, reacting to criticisms from philosophers such as Sellars (1963), Rorty (1979), and Davidson (2006), have agreed with them that the purely nonconceptual cannot have justificational power. But they disagree with, for example, Davidson's claim (2006, 228) that only a belief can justify another belief. Rather, the justifying sensory experiences are not beliefs but do have conceptual content. They are, for example, “the sort of experience in which it appears to one that there is an object *a* that is *F*” (Steup 2000, 79; compare Pryor 2000, 519; Huemer 2007, 30). Both the nonconceptualist and conceptualist views agree on the essential claim that sensory experiences can justify without themselves requiring justification. I believe that the nonconceptualist can adequately respond to the natural question how something nonconceptual could justify anything conceptual. But that is a topic for another occasion. In what follows, I will speak of sensory experiences as putative nonconceptual justifiers. Appropriate changes can be made in the analysis if the conceptualist alternative is required.

If, as I've argued, some experiential beliefs can be epistemically certain, then the only plausible candidate for the justifier of such beliefs is the experience itself. For when an experiential belief is certain, no other evidential factors, including other beliefs, undermine its being justified. This can only be so because the experience is not only present to the subject, but present in an epistemically direct and straightforward way. There is an epistemically secure link between the object of the belief—a feature of the subject's occurrent sensory experience—and the belief itself. As long as the conditions noted in the antecedents of CC and DC obtain, no epistemically relevant factors can intervene to undermine the belief.

This directness is illustrated in the way the experience's presence or absence is related to the epistemic status of the relevant experiential belief, in the case of beliefs that can attain the status of certainty. A headache is the sort of thing that can come on quickly. Between $t1$ when the subject is doing fine and $t2$ shortly after she has suddenly been confronted with an intense headache—a migraine that she cannot help but attend to—the subject's sensory experience changes dramatically. And the epistemic status of the belief that she is in pain changes just as dramatically: from unjustified at $t1$ to justified at the level of certainty at $t2$.¹⁹

What can explain this dramatic change in epistemic status? Surely, it is the sensory experience itself—the pain—that explains this, and in doing so offers itself as the best candidate for the justifier of the experiential belief that she is in pain. Other beliefs cannot be relevant to the experiential belief's justification, since they cannot undermine it. Of course, other factors need to be in place in order for the subject to be justified with certainty that she is in pain. She does need to have acquired possession of the concept of pain, for example, and to have a number of background beliefs without which she could never have risen to the level of an epistemic agent. But these factors are best regarded as standing conditions that may be necessary in order for the subject to be capable of holding the belief with certainty, but that are not justifiers, at $t2$, of the belief expressed by "I'm in pain." Virtually all of the nonexperiential factors that might be epistemologically relevant are present when the subject is *not* in pain. The subject's epistemic virtues (and vices) remain the same at $t2$ as at $t1$. The same goes for her conceptual competence at wielding pain and other experiential concepts, her cognitive capacities, and the reliability of her perceptual and introspective faculties.

What we can say about virtues, conceptual competence, reliability, and background beliefs is that these are best regarded as standing conditions that do not justify the belief that one is in pain, because they are in place when one believes with certainty that one is in pain *and* when one does not so believe. What changes, and best explains what justifies, is the subject's sensory experience – the felt pain, in this case.

If this is so, then the case for experientialism has been made, and not just for sensory experiences as justifiers of experiential beliefs, but also as belief justifiers more generally. It would be quite arbitrary to acknowledge the role of experiences in justifying experiential beliefs and yet to deny experiences *any* role in the justification of ordinary perceptual beliefs about the external world. And it is arguable that experiences are capable of justifying some external-world beliefs independently of any

¹⁹ Huemer considers that some qualitative mental states like being in pain might be token identical to states of seeming to be in pain (2007, 46). If so, then in such cases the conceptualist and nonconceptualist approaches discussed in the previous footnote would come to the same thing.

nonexperiential factors contributing to that justification. Considerations similar to those noted in the case of the migraine headache can be applied to some instances of external-world beliefs.

Think about highway driving in traffic. The driver's justified beliefs about whether it is safe to switch lanes will be constantly and unpredictably changing. Of course, the driver possesses the relevant conceptual background, the perceptual competence to judge the presence of cars and trucks, general background beliefs about the rules of the road and about the operation of her car, and the epistemic virtues associated with the ability to quickly form justified beliefs about the safety of a lane change. But these background conditions do not provide specific evidence concerning whether, at the time interval between $t1$ and $t2$ (a matter of perhaps a second or two at most), it is safe to move into the left lane. By analogy with the migraine case, the best explanation for the justification of S 's justified belief about the safety of moving into the left lane at a particular moment is arguably that S 's sensory experiences at that moment justify them. A belief that it is safe to change lanes at one particular moment might be quite unjustified a few seconds later. What makes the difference in this dramatic epistemic reversal would seem to be the different sensory array that presents itself at the later time. It is understood, of course, that the subject typically does not go through any inferential process from sensory presentation to external-world belief. But the temporal immediacy of the justified belief that there is a car approaching from the left should not obscure the way in which sensory experiences are forms of awareness that are capable of epistemically supporting perceptual beliefs.²⁰

Once sensory experiences are shown to be justifiers, this sets the stage for addressing the regress problem. Since such experiences are not the sorts of things that could be justified, they are nonjustified justifiers. They are not merely causes of belief, as critics of experiential justifiers would have it. They belong to the epistemic order. This picture provides an account of justification that does not problematically require that each justified element in a person's epistemic system have some independent justification.²¹

²⁰ What then counts as basic within this picture of justification? Some recent foundationalists think of external-world beliefs as basic. If such beliefs are justified by nondoxastic sensory experiences, then they can be basic provided they are justified only by sensory experiences and not by any independent *beliefs*. More traditional foundationalists have resisted the idea that external-world propositions can be basic items of justification because they are defeasible and are, after all, justified by something arguably more basic—the sensory experiences themselves. One might think this a terminological matter only, but there is a deeper question here connected both with the dispute about conceptualist vs. nonconceptualist accounts of sensory justifiers discussed in note 18 and with what the best developed accounts of the justification of ordinary empirical beliefs will look like. Resolution of this question thus awaits further developments.

²¹ Both the conceptualist and nonconceptualist accounts of sensory experiences can address the so-called Sellarsian dilemma, which can be represented as the problem that (1) if sensory experiences are nonconceptual, they do not need justification but are not capable of justifying, but (2) if they are conceptual they may be capable of justifying but need justification themselves (compare Sellars 1963, 132). The nonconceptualist account denies the first horn of this dilemma; the conceptualist account the second. For details on how sensory experiences understood as having conceptual content can justify without themselves requiring justification, see, for example, Steup (2000). For a detailed nonconceptualist alternative see, for example, Moser (1989, especially 97–117).

5 Foundationalism and the Thinness Problem

Earlier I noted that according to the traditional foundationalist project, the role assigned to epistemically certain propositions has been that of providing the foundations for the rest of our justified empirical beliefs. But this is not the role certainty plays in the present account.

I have argued that there are indeed some experiential beliefs that are certain and that these are justified by the sensory experiences that are the objects of the subject's focal attention. But these beliefs cannot constitute the foundation of the rest of empirical knowledge because they are spread too thinly. Most of our pertinent beliefs are not about our sensations, but about the ordinary objects these sensations inform us about. If pains, or patches of color in my occurrent visual experience, can *occasionally* be the focus of my attention *as sensory experiences*, nevertheless, it is not the normal thing. Fortunately, most of us are free, most of the time, from obtrusively intense pain. A milder pain might come and go without ever having had any attention directed toward it or any belief formed about it. And when someone is brewing her coffee, reading the committee report, or seeing his child off on the school bus, there is typically not a thought given to sensory experience as such.

We surely do have justified beliefs about what we perceive when we engage in these daily activities, but these are beliefs about coffee and committee reports and school busses rather than about sensory experiences. It is apparent that those conditions of focused attention on the sensory experience itself that are required to satisfy CC and DC do not arise often. Thus, unless some additional sources of certainty regarding empirical propositions can be articulated and defended, my account suggests that one is favored with epistemically certain beliefs only occasionally, and never in great numbers. This is foundationalism's thinness problem: empirical beliefs attaining the status of certainty appear to be spread too thinly to provide the sort of foundation that any adequate accounting of our many justified external-world beliefs would need.²²

The argument offered here in favor of epistemically certain empirical beliefs shows how the thinness problem can be addressed not directly (by an argument attempting to show that such beliefs constitute the foundation of knowledge) but indirectly. The existence of epistemically certain experiential beliefs supports experientialism. And once experientialism is confirmed in the case of epistemically certain beliefs, there can be no reasonable objection to admitting sensory experiences as at least contributing justifiers of ordinary perceptual beliefs about the external world. This opens up rich justificatory resources, for there are plenty of experiences to go around. The constant stream of sensory experiences during waking consciousness, rich and varied in content, can be drawn on as justifiers, or contributors to the justification of, any number of external-world propositions.

²² See Schwitzgebel (2008, 268n33) for his own statement of the thinness problem. The earliest suggestions that foundationalism faces such a problem are perhaps those made by Williams (1977, 174-75) and Sosa (1980, 5).

Beginning with the work of H. H. Price and continuing with that of Roderick Chisholm and several contemporary foundationalists, different specific accounts have been offered concerning just how sensory experiences (including memorial experiences) can justify ordinary beliefs about the external world.²³ The present account is not another such one. Rather it is in service to a more general defense of these efforts.

Even with these problems addressed, there may yet be no successful way of working out plausibly just how all our empirical beliefs are justified on the basis of sensory and memorial experiences. The devil is always in the details. But the criticisms noted above can be removed from the list of those objections to foundationalism that might prevent its successful defense.

6 Conclusion: A New Role for Epistemically Certain Propositions

While the specific role for certainty proposed here is surely not exactly what C. I. Lewis, or Leibniz, for that matter, had in mind when they argued for the need for certainty in an adequate epistemological system, epistemically certain propositions still have an essential place in the explanation for the justification of ordinary propositions about the world. The certainty that can be had about one's belief that one is in pain, for example, is best explained as a case in which a sensory experience justifies a belief about that experience. So experientialism—the thesis that some beliefs are justified by sensory experiences—is true. With experiences thus certified as belonging to the epistemic order of things, our ways of explaining justified beliefs become broader and more flexible. Individual experiences on their own may justify some external-world propositions, and in any case must figure as contributing justifiers of such propositions. The full story of empirical justification, of course, requires much more—an account of principles of epistemic justification as well as deeper understandings of memory, inference, belief, perception, and perceptual objects.

The account proposed here, in showing that the divide between nondoxastic sensory experiences and doxastic states can be bridged in the strongest possible way epistemically, provides a way forward in relation to two problems that have confronted traditional foundationalism. It can both address the thinness problem and offer a plausible model for the transmission—or better, the generation—of justification that stops the regress of justification.

This account of the role of certainty acknowledges that we can have epistemically certain beliefs but does not make them do more work than can be reasonably expected of them. As such, it offers a solution to some key problems that have bedeviled foundationalists from Descartes to the present.

²³ In addition to the works cited in notes for Section 4, see Chalmers (2003), Chisholm (1989), Fales (1996), Fumerton (1985), Goldman (2004), Hobson (2008), Markie (2006), McGrew (1995), and Schwarz (2018). (Since Gettier, these projects have focused on foundations for justified beliefs rather than for knowledge, given the complexities of the relation between justification and knowledge.) Siegel and Silins (2015) is a useful survey.

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References

- Bailey, G. (1979). Pappas, incorrigibility, and science. *Philosophical Studies*, 35, 319–321.
- BonJour, L. (1999). “Foundationalism and the external world.” *Noûs* 33, Supplement: *Philosophical Perspectives* 13, *Epistemology*: 229–49.
- Bostrom, N. (2003). Are we living in a computer simulation? *The Philosophical Quarterly*, 53, 243–255.
- Chalmers, D. (2003). The content and epistemology of phenomenal belief. In Q. Smith & A. Jokic (Eds.), *Consciousness: new philosophical perspectives* (pp. 220–272). Oxford: Oxford University Press.
- Chisholm, R. (1989). *Theory of knowledge* (3rd ed.). Englewood Cliffs: Prentice Hall.
- Churchland, P. (1988). *Matter and consciousness, revised edition*. Cambridge: MIT Press.
- Conee, E. (2005). The comforts of home. *Philosophy and Phenomenological Research*, 70, 444–451.
- Davidson, D. (2006). A coherence theory of truth and knowledge. In *The Essential Davidson* (pp. 225–241). Oxford: Oxford University Press.
- Dennett, D. (2002). How could I be wrong? How wrong could I be? *Journal of Consciousness Studies*, 9, 13–16.
- Descartes, R. (1988). In J. Cottingham, R. Stoothoff, & D. Murdoch (Eds.), *Selected philosophical writings, trans.* Cambridge: Cambridge University Press.
- Fales, E. (1996). *A defense of the given*. Lanham: Rowman & Littlefield.
- Fumerton, R. (1985). *Metaphysical and epistemological problems of perception*. Lincoln: University of Nebraska Press.
- Gertler, B. (2001). Introspecting phenomenal states. *Philosophy and Phenomenological Research*, 63, 305–328.
- Goldman, A. (2004). Epistemological foundations: Can experiences justify beliefs? *American Philosophical Quarterly*, 41, 273–285.
- Greenough, P., & Pritchard, D. (Eds.). (2009). *Williamson on knowledge*. Oxford: Oxford University Press.
- Hardin, C. L. (1988). *Color for philosophers: unweaving the rainbow*. Indianapolis: Hackett.
- Hellie, B. (2004). Inexpressible truths and the allure of the knowledge argument. In P. Ludlow, Y. Nagasawa, & D. Stoljar (Eds.), *There's something about Mary* (pp. 333–364). Cambridge: MIT Press.
- Hobson, K. (2008). Foundational beliefs and the structure of justification. *Synthese*, 164, 117–139.
- Horgan, T., & Kriegel, U. (2007). Phenomenal epistemology: What is consciousness that we may know it so well? *Philosophical Issues*, 17, 123–144.
- Huemer, M. (2007). Compassionate phenomenal conservatism. *Philosophy and Phenomenological Research*, 74, 30–55.
- Klein, P. (1981). *Certainty: a refutation of skepticism*. Minneapolis: University of Minnesota Press.
- Lehrer, K. (1974). *Knowledge*. London: Oxford University Press.
- Leibniz, G. W. (1981). *New essays on human understanding, ed. and trans. P. Remnant and J. Bennett*. Cambridge: Cambridge University Press.
- Lewis, C. I. (1946). *An analysis of knowledge and valuation*. LaSalle: Open Court.
- Macpherson, F. (2012). Cognitive penetration of colour experience: rethinking the issue in light of an indirect mechanism. *Philosophy and Phenomenological Research*, 84, 24–62.
- Markie, P. (2006). Epistemically appropriate perceptual belief. *Noûs*, 40, 118–142.
- McGrew, T. (1995). *The foundations of knowledge*. Lanham: Littlefield Adams.
- Mills, E. (2002). Fallibility and the phenomenal sorites. *Noûs*, 36, 384–407.
- Moser, P. (1989). *Knowledge and evidence*. Cambridge: Cambridge University Press.
- Nagel, T. (1974). What is it like to be a bat? *Philosophical Review*, 83, 435–450.
- Nussbaum, M. (2001). *Upheavals of thought: the intelligence of emotions*. Cambridge: Cambridge University Press.
- Pappas, G. (1975). Incorrigibilism and future science. *Philosophical Studies*, 28, 207–210.
- Pappas, G. (1980). Reply to Bailey. *Philosophical Studies*, 37, 201–202.
- Price, H. H. (1964). *Perception*. London: Methuen.

- Pryor, J. (2000). The skeptic and the dogmatist. *Noûs*, 34, 517–549.
- Quine, W. V. O. (1951). Two dogmas of empiricism. *Philosophical Review*, 60, 20–43.
- Rorty, R. (1979). *Philosophy and the mirror of nature*. Princeton: Princeton University Press.
- Schwarz, W. (2018). Imaginary foundations. *Ergo*, 5, 764–789.
- Schwitzgebel, E. (2008). The unreliability of naive introspection. *Philosophical Review*, 117, 245–273.
- Sellars, W. (1963). Empiricism and the philosophy of mind. In *Science, perception and reality* (pp. 127–196). London: Routledge & Kegan Paul.
- Shoemaker, S. (1996). *The first-person perspective and other essays*. Cambridge: Cambridge University Press.
- Siegel, S. (2012). Cognitive penetrability and perceptual justification. *Noûs*, 46, 201–222.
- Siegel, S., & Silins, N. (2015). The epistemology of perception. In M. Matthen (Ed.), *The Oxford handbook of philosophy of perception* (pp. 781–811). Oxford: Oxford University Press.
- Silins, N. (2016). Cognitive penetration and the epistemology of perception. *Philosophy Compass*, 11, 24–42.
- Sosa, E. (1980). The raft and the pyramid. In P. French, T. Uehling Jr., & H. Wettstein (Eds.), *Midwest studies in philosophy V: studies in epistemology* (pp. 3–25). Minneapolis: University of Minnesota Press.
- Sosa, E. (2005). Dreams and philosophy. *Proceedings and Addresses of the American Philosophical Association*, 79, 7–18.
- Steup, M. (2000). Unrestricted foundationalism and the Sellarsian dilemma. *Grazer Philosophische Studien*, 60, 75–98.
- Steup, M. (2009). Are mental states luminous? In *Greenough and Pritchard*, 217–236.
- Stoljar, D. (2016). The semantics of ‘what it’s like’ and the nature of consciousness. *Mind*, 125, 1161–1198.
- Van Cleve, J. (1979). Foundationalism, epistemic principles, and the Cartesian circle. *Philosophical Review*, 88, 55–91.
- Williams, M. (1977). *Groundless belief*. Oxford: Basil Blackwell.
- Williamson, T. (2000). *Knowledge and its limits*. Oxford: Oxford University Press.
- Williamson, T. (2009). Replies to critics. In *Greenough and Pritchard*, 279–384.
- Wu, W. (2017). Shaking up the mind’s ground floor: The cognitive penetration of visual attention. *Journal of Philosophy*, 114, 5–32.

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