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THE UNIVERSITY OF
ALABAMA

SCHOOL OF LAW

**More on the Conceptual and the
Empirical: Misunderstandings,
Clarifications, and Replies**

Michael S. Pardo
Dennis Patterson

Neuroethics (forthcoming)

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More on the Conceptual and the Empirical: Misunderstandings, Clarifications, and Replies

Michael S. Pardo* & Dennis Patterson**

We would like to begin our reply to our distinguished critics by thanking Neil Levy and Walter Sinnott-Armstrong for the opportunity to share our views on ethics, law, and neuroscience with readers of this journal. The editors have assembled an august group of commentators, and we are very pleased to have the opportunity to further develop our positions on timely issues of philosophy and public policy. We also thank each of the commentators for their thoughtful and challenging responses. While we acknowledge the various criticisms of our positions, we remain of the view that the impact of neuroscience on law is wildly overstated (although not by our commentators) and, further, that significant philosophical problems plague many of the arguments in the literature on law and neuroscience.

Our discussion focuses on each of the three commentaries individually. With each, we first correct a number of misunderstandings of our arguments and attempt to clarify our positions by noting several points of agreement with each of the responses. Indeed, we agree with many of views expressed—much more than an initial reading of them may suggest. We then turn to the few points of genuine disagreement. What unites both the apparent misunderstanding of our views as well as our actual points of

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disagreement is the relationship and significance of the conceptual-empirical distinction. We emphasize this theme throughout.

I. Glannon on Brains, Behavior, and Rules

There is no doubt that we draw a distinction between the empirical and the conceptual. We believe that clarity in the formation of hypotheses is absolutely essential to the production of successful and useful empirical results. When hypotheses are poorly formulated (e.g., the question or proposition to be tested is articulated unclearly), it is unlikely that useful empirical information will be forthcoming.

While we do draw the distinction between the conceptual and the empirical, we do not deny the importance of either. Yet, when it comes to behavior, Professor Walter Glannon suggests that, for us, “the empirical does much less work than the conceptual.”¹ Moreover, he states that “[f]ailure to state that neurological states are necessary (though not sufficient) for mental life and behavior underlies the limitations of their account. . . . Yet this does not imply that the dependence relation of the mind on the brain is only contingent.”² Both points require clarification: we neither deny the significance of the empirical nor do we think the relationship between mind and behavior to be merely contingent.

With respect to the first proposition, we agree that the empirical “does work” in any account of behavior.³ We do not claim that it does “much less work” than the

¹ Walter Glannon, “Brain, Behavior, and Knowledge,” *Neuroethics*, at [manuscript p. 2].

² *Id.*

³ We are puzzled by Professor Glannon’s claim, apparently advanced as a critique of our position, that “[a]n appeal to the brain alone does not make sense as a criterion of knowledge. But behavior alone is not sufficient either.” *Id.* at 7. We do not claim that “behavior alone” is a sufficient criterion for knowledge.

conceptual (we are not even sure how one could measure this). We are more concerned with revealing the significance of both types of issues—conceptual and empirical—rather than comparing the relative significance of each. Our emphasis on the conceptual arises from the fact that conceptual issues have been largely ignored in this context, while empirical issues have been subjected to more focus and scrutiny. We think both types of issues are of utmost importance and that more focused scrutiny should be devoted to each.

Our interest lies in the *kind* of work each does. This is why we disagree with Professor Glannon’s second point characterizing our views regarding the relationship of the brain to behavior. We do not claim that the relationship between the brain and behavior is contingent (in the sense that there could be no brain activity at all and still be mental life and behavior). As we have said, we do not deny that possession of a well-functioning brain is necessary to engaging in behavior *of any kind*. Rather, we meant that *particular* neurological states may or may not be necessary for particular behavior (as opposed to the same behavior depending on different brain states on different occasions or neurological differences among people), not that *no neurological states of any kind* may be necessary for a particular kind of behavior.⁴ Our larger point is that the brain

Our claim is that what constitutes “knowledge” is not dictated by the brain. Of course, particular brain states may accompany behavior deemed to evince knowledge. We agree with Professor Glannon when he states: “The subcortical cerebellum and the striatum . . . mediate procedural memory. . . Behavioral evidence is necessary to know that one can or cannot follow rules involving procedural memory.” *Id.* at 3. Indeed, nothing in our analysis is to the contrary. Similarly, we do not deny that “[k]nowing how to perform a cognitive task does not have an exact location in a specific part of the brain. But it does not follow from this that practical knowledge does not have a neurobiological underpinning.” *Id.* at 6.

⁴ Whether a particular neurological state is necessary for a particular behavior on a particular occasion is an important empirical question, depending on, among other things, evidence regarding modularity, localization, and plasticity.

does not tell us how to characterize behavior (this is another way of saying that behavior is not reducible to brain states).

Our point can be further clarified by focusing on Professor Glannon’s discussion of rules and rule-following. We contend that it makes no sense⁵ to say that a rule can be followed “unconsciously.” Professor Glannon disputes this, claiming that “staying on the right side of the road when I drive is a form of rule following, and I do it without consciously thinking about it. . . . This form of procedural memory is not a purely psychological state but one that is mediated by neurobiological processes in the brain.”⁶ The question whether or not one is “following a rule” of the road (or any other rule) cannot be answered by aligning a narrow piece of behavior with a brain state. “Following a rule” is a complicated array of behaviors that include forms of action that may—but need not—be accompanied by a conscious thought about a rule.⁷ That one may not be consciously thinking of a rule while following it does not mean that one’s behavior is “unconscious.” Although Professor Glannon may not have been thinking about the right-side-of-the road rule in his example, we are also confident that he would not describe his behavior at that time as “unconscious” either (at least we hope not).

To examine whether someone is following a rule or not we must expand our focus beyond their brain states at the time of the behavior in question. In driving a car, one

⁵ When we say that an assertion lacks “sense,” what we mean is that the locution in question is so confused that it cannot be evaluated for its truth value.

⁶ *Id.* at 3.

⁷ Professor Glannon claims: “it is not brains but persons who follow rules, lie, and deceive. Persons perform these actions as social beings interacting with others. Yet failure to emphasize that persons’ brains enable these actions comes dangerously close to the substance dualism the authors claim to reject.” *Id.* at 7. As we have said: we agree that having a brain is a necessary prerequisite to engaging in human action. We do not deny this. And we agree wholeheartedly with the first part of this quote. As for the claim about “substance dualism,” however, we do not see how this follows from what we have said.

may stay on one side of the road or the other, following (or not) signs and paying attention to the actions of other drivers. If, in the course of driving his car, Professor Glannon were to move out of his lane unexpectedly, we might question him as to why he was no longer “following the rule” about making lane changes without signaling. If he explained that he was not aware of such a rule, then we would conclude that he was not following the signaling rule (we also would conclude that he was not following it during the time he stayed in his lane). If, however, the Professor were to explain that he veered out of his lane because a large tree had fallen off the back of a pickup truck, we would say that the Professor was following the rule but that under these (extreme) circumstances, his conduct amounted to a reasonable departure from the strict tenor of the rule. We would not say that the Professor violated the rule: rather, we would say that his conduct was a reasonable deviation from the rule.

Even if one were to disagree with our characterization of Professor Glannon’s driving skills, this would in no way undermine our point that the assessment of his conduct cannot be made relative to a particular brain state. The judgment of compliance is normative and must be made on reflection, not by studied “compliance” with one dimension of the norm in question. This is why we maintain that a rule cannot be followed (or violated) “unconsciously” because one could not engage in even this limited range of normative behaviors without being conscious.

II. Robins & Craver on the Significance of Empirical Bedrocks and Subpersonal Facts

Sarah Robins and Carl Craver are confident that when it comes to the incorporation of neuroscience into law, “[t]he nonsense can be brushed away from the

empirical bedrock of subpersonal neuroscience with no consequence for the discussion at hand.”⁸ We would certainly like to agree, and, in fact, we do agree to a large extent. Our only disagreement appears to lie in the question of what must be done before the nonsense can be swept away. We are not quite as sanguine as Robins and Craver that the work to be done is as simple and straightforward as they suggest.

With regard to subpersonal facts, Robins and Craver state that:

The fact that subpersonal mechanisms are necessary for (or even simply correlated with) personal-level abilities and states is sufficient to raise legitimate concerns about how these findings can, should, and will be applied in civil, criminal, and military contexts.⁹

And they add that:

[S]ubpersonal facts might be perfectly relevant to whether a person can consent, act for reasons, and be held responsible for his or her actions. Such a project will require genuine collaboration among philosophers, legal scholars, neuroscientists, and clinicians. It should be a focus of research in neurolaw. It could not even be taken seriously if Pardo and Patterson are right.¹⁰

We admit to being perplexed by these comments. Are they criticisms of our views? We do not see how. Robins and Craver emphasize the importance of the subpersonal level, an importance they think we deny. But we do not dispute this

⁸ Sarah K. Robins & Carl F. Craver, “No-Nonsense Neurolaw,” *Neuroethics*, at [manuscript p. 1].

⁹ *Id.* at 3.

¹⁰ *Id.* at 5.

importance for any of the issues they discuss, nor for a host of others.¹¹ As we argued above, conceptual and empirical claims are logically distinct, and good empirical work depends on clear concepts and well-articulated hypotheses. Although we emphasized the conceptual aspects, we, of course, recognize that sound empirical evidence regarding neuroscientific facts may be relevant and probative for drawing inferences about personal-level states. No real dissent can be glimpsed until one says precisely *how* subpersonal facts are taken into account in making judgments regarding the personal-level states that are the concern of law and ethics (e.g., intent, consent, rationality, knowledge, and responsibility). We focus briefly on the discussion by Robins and Craver of lie detection and “locked-in syndrome” to illustrate these general points.

With regard to lie detection, we agree with Robins and Craver that lying and deception (as well as sincere assertions) may be correlated with brain activity and that—depending on the details regarding such correlations—brain activity may be probative evidence in juridical contexts.¹² Moreover, they appear to agree with us that “brains do

¹¹ In our main article, for example, we wrote that “particular neurological states . . . may be a necessary condition of various mental activities” and that “we do not contest that neuroscience may illuminate how these activities depend upon the brain and how damage or defects in the brain may affect one’s mental activities.” Michael S. Pardo & Dennis Patterson, “Minds, Brains, and Norms,” *Neuroethics*, at [manuscript p. 2]. Similarly, with regard to memory and knowledge, we wrote that “[t]his is not to suggest that certain brain states and synaptic connections are not necessary” and that “understanding these conditions is an important avenue of neuroscientific research.” *Id.* at 22. Likewise, in another article we have made similar points, concluding that our analysis “in no way implies that neuroscience cannot make valuable contributions to law” and that “neuroscience may contribute greatly” by indentifying necessary conditions for various mental activities and capabilities and by providing “good inductive evidence” of such activities and capabilities. Michael S. Pardo & Dennis Patterson, “Philosophical Foundations of Law and Neuroscience,” *Univ. of Illinois Law Review* (forthcoming 2010), at [proofs p. 140], available at <http://ssrn.com/abstract=1338763>.

¹² In our main article, we noted with regard to lie detection that “neuroscientific evidence might reveal that certain brain activity is inductively well-correlated with this behavior.” “Minds, Brains, and Norms,” at 23. We agree that this might serve the basis for probative juridical evidence. We also recognized this point in “Philosophical Foundations of Law and Neuroscience,” at 120. And one of us has discussed in more detail the evidentiary and constitutional issues this proposed evidence raises. Michael S. Pardo, “Neuroscience Evidence, Legal Culture, and Criminal Procedure,” 33 *American Journal of Criminal Law* 301 (2006).

not lie.”¹³ Despite our agreement on these points, however, our commentators maintain that “this is an empirical matter, not something that can be derived from the ordinary use of the terms ‘lie’ and ‘deception.’”¹⁴ Although we agree that the relationship between brain activity and lying is an empirical matter, the question whether or not someone is lying has both empirical and normative aspects. We draw the conclusion that someone is lying (a matter of fact) in virtue of the meaning and use of the word “lie.”¹⁵ The latter (i.e., the meaning of the word) is not given by the brain but rather is constituted by the complex behavior that provides criteria for “lying.” The reduction of mind (or meaning) to the brain does not go through in this context because brain activity does not play this normative role. To put it another way, the behavioral criteria serve a normative role in providing the *measure* for what constitutes lying, a role not played by brain activity. It is this neglected conceptual aspect that we were drawing attention to, and the confusions that can arise when it is neglected, not the role that brain activity may play as inductive evidence of lying in particular instances.

Turning to locked-in syndrome, we also find ourselves agreeing with much of what Robins and Craver write. We raised this example in the context of discussing the array of behaviors that constitute criteria for knowledge in typical cases (because those with this locked-in syndrome may have knowledge and yet not be able to engage in

¹³ Robins & Craver, *supra* at 7.

¹⁴ *Id.* at 7.

¹⁵ We agree with Robins and Craver that the judgment that one is lying in particular instances will often be a matter of “inference to the best explanation” and that subpersonal details may be part of what needs to be explained. In the context of memory, we also agree that engrams may figure in the causal explanation of how remembering is possible. As we have stressed, what enables one to remember plays no role in answering the question whether or not one remembers correctly. In the context of “remembering,” Robins and Craver claim that *both* remembering and relearning are examples of “retained knowledge.” *Id.* at 8. We simply do not understand how relearning something can be *retained* knowledge.

behavior that manifests their knowledge). We certainly agree that subpersonal level neuroscientific evidence may be relevant and highly probative for diagnosing potential victims and for drawing inferences about their mental lives. We also agree with the more general point that whenever there is a mismatch between personal-level behavior and subpersonal-level brain activity in individual cases, the subpersonal evidence may defeat the inferences that would otherwise be drawn from the behavior (e.g., that the person lacks knowledge, lacks consciousness, or is malingering). As with lies and deception, our focus was on the conceptual point that behavior of various kinds, not brain activity, provides the criteria for ascriptions of knowledge.

Indeed, the example¹⁶ Robins and Craver discuss supports rather than contradicts our point. They write:

neuroscientists have shown that some patients with total locked-in syndrome can deliberately alter their brain activity in ways that allow them to correctly answer questions posed to them about their families and homes . . . they can begin and end their responses at the arbitrary times requested by the experimenter.¹⁷

This does appear to be a kind of behavior that manifests knowledge. Robins and Craver characterize the brain activity in this context as an “artificial language . . . that [can] conform to standards of truth and intelligibility.”¹⁸ We agree. And correct assertions (in any language) are a paradigmatic way to manifest one’s knowledge. The conceptual

¹⁶ Martin M. Monti *et al*, “Willful Modulation of Brain Activity in Disorders of Consciousness,” *New England Journal of Medicine* (February 3, 2010).

¹⁷ Robins & Craver, *supra* at 6.

¹⁸ *Id.*

claim against which we were arguing identifies knowledge with brain activity that a person does not “use” as a language or otherwise “deliberately alter.”¹⁹

Finally, in their conclusion, Robins and Craver make two general statements that we are having trouble reconciling. First, they write:

There are, in addition, a host of philosophical questions about how the personal and subpersonal levels intermingle with one another and about the implications of this intermingling for our commonsense thoughts about agency, free will, and moral responsibility.²⁰

And second:

Pardo and Patterson have helped us to show just how tangential these Wittgensteinian attacks on mind-body identity are to the practical challenges raised by the inevitable applications of neuroscience to the law.²¹

There is nothing in this first quotation with which we disagree. There is much more that needs to be said on these issues and, in our view, a great deal that merits caution. This is why we find the second quotation from Robins and Craver to be inconsistent both with the first quotation and with their commentary as a whole. We agree wholeheartedly on the need for greater understanding of the “reliability and validity of available techniques for measuring the brain states necessary for person-level abilities and states.”²² But we believe there also is a need for greater understanding of how the “host of philosophical

¹⁹ *Id.*

²⁰ *Id.* at 11.

²¹ *Id.* at 11-12.

²² *Id.* at 11.

issues” generated by the “intermingling” of personal and subpersonal levels, and the implications of this intermingling, relate to the personal-level states and activities that are the focus of law. Some of this work will be conceptual: understanding the “available techniques” for measuring the “brain states necessary” for, e.g., intent or knowledge requires some understanding of whether what is being measured is intent or knowledge or whether it is something else.²³ Along with empirical work, we think far more conceptual work needs to be done to understand the practical ways in which neuroscience can and cannot contribute to law.²⁴ Hence, we are not as sanguine as Robins and Craver about the lack of need for philosophical work in this area.

III. Nadelhoffer on the Criteria for Lies and Deception

Thomas Nadelhoffer engages directly with our conceptual claims regarding lies and deception.²⁵ Before we turn to his arguments, however, we first wish to correct two misunderstandings of our position. As with our replies above, we think these clarifications will reveal more agreement with Nadelhoffer than his commentary

²³ For example, consider the conceptual questions raised by whether Libet’s studies were measuring intent (and, if so, what kind of intention) or something else. See Alfred R. Mele, *Effective Intentions: The Power of Conscious Will* (2009). We think these conceptual questions about intent, like the empirical subpersonal questions, are of practical significance (and not “tangential”) if neuroscience is used to inform legal issues of intent.

²⁴ Moreover, these conceptual issues sometimes interact with quite specific doctrinal questions. For example, the constitutional privilege against self-incrimination under the Fifth Amendment applies to evidence of a “testimonial” nature but not to “physical” evidence. Therefore, is a brain scan that shows activity correlated with lies or deception “testimonial” or “physical”? And does the distinction depend on a particular conception of mind? For an argument that the distinction depends on an untenable Cartesianism see Susan Easton, *The Case for the Right to Silence* 271 (2d ed. 1998). For an argument that the distinction does not depend on a problematic conception of mind, and that the privilege ought to apply to brain scans that provide evidence of the content of a defendant’s propositional attitudes see Michael S. Pardo, “Self-Incrimination and the Epistemology of Testimony,” 30 *Cardozo Law Review* 1023 (2009).

²⁵ Thomas Nadelhoffer, “Neural Lie Detection, Criterial Change, and Ordinary Language: A Commentary on Pardo and Patterson,” *Neuroethics*.

suggests. First, on the specific issue of lie detection, Nadelhoffer contends that because of our conceptual objections, we “can entirely side-step the methodological, moral, and legal objections that ordinarily crop up in discussions about neural lie detection.”²⁶

Although we contend that there are conceptual problems with inferences drawn in this context, we recognize the importance of these other issues, and (as discussed above) we acknowledge that neuroscientific evidence might serve as probative evidence of lies or deception. Second, and more generally, Nadelhoffer contends that we must explain how “it is possible for language to change in light of scientific progress even though the criteria that govern how we can meaningfully talk about the world are fixed.”²⁷ This is not our position. We acknowledge that language is fluid and that concepts can and do change based on scientific progress (and much else); we also do not object to scientists, lawyers, philosophers, or anyone else coining new terms or extending or limiting the uses of existing terms or concepts.²⁸ Our objections arise in situations in which inferences are drawn that appear to presuppose our current concepts (e.g., of lying, deception, or knowledge) and that also appear to betray the current criteria for the application of these concepts.

These clarifications take us to the heart of Nadelhoffer’s objections regarding lie detection. He raises two separate objections. The first objection—the “changed criteria” objection—states that developments in neuroscience may cause brain states to replace behavior as the criteria for lies or deception. Nadelhoffer cautions that “yesterday’s

²⁶ *Id.* at 6.

²⁷ *Id.* at 14.

²⁸ For numerous examples of conceptual change in light of scientific developments see Mark Wilson, *Wandering Significance: An Essay on Conceptual Behavior* (2006).

impossibilities have a way of becoming tomorrow's platitudes."²⁹ He notes that in areas such as medicine, physics, and chemistry, scientific developments have also brought with them conceptual changes in the criteria for the application of concepts. At one point, the molecular level did not feature in the criteria for "water," but now it does. He also raises the example of the flu. He argues that were once criteria—e.g., "sore throat, fever, shivering, coughing, and the like"—are now "demoted to the status of mere symptoms."³⁰ Thus, it may be possible to successfully ascribe the condition to someone even when they do not suffer from the symptoms. The analogy with neural lie detection is straightforward: the behavior that now constitutes the criteria for lies may be demoted to "mere symptoms" and neural states may become the new criteria (as with molecular facts and water).

As noted above, we do not take issue as a general matter with extending or changing concepts. (We can call certain brain states "lies" or "lie*" if we want to; the key questions would be why, and what would follow when we did so?) In this context, however, we do not think the analogies work because the law cares about the behavioral criteria itself, not as "mere symptoms" of something else. Consider the hypothetical case of Wendy Witness, who saw a crime take place, was questioned by the police, and is called to testify at trial. If the changes Nadelhoffer envisions were to go through, then when she said something she knew to be false to the police or on the witness stand her statements would not necessarily be "lies," they would be "mere symptoms" that may or not be lies depending on what is going on in her brain. On the flipside, she may have lied

²⁹ Nadelhoffer, *supra* at 2.

³⁰ *Id.* at 9.

to the police or on the witness stand because of her brain states, regardless of whether she uttered anything false (“mere symptoms”). We think this example provides a *reductio ad absurdum* for the analogy. In our world, Wendy committed crimes in the first scenario, even if she did not have brain states that are correlated with deception³¹; she did not commit these crimes in the second scenario, even if she had brain states correlated with deception. Of course, things might change to the point where the law cares more about brain states than behavior when it comes to “lies,” but it hard to see how this is anything other than changing the subject. We take issue only with claims that presuppose the same subject.

Nadelhoffer offers a second, distinct objection. Unlike the “changed criteria” objection, this is a “current criteria” objection based on “ordinary language.” According to Nadelhoffer, our arguments based on criteria depend on the usage of (most) ordinary speakers. But, “if you were to ask people on the street,” many would concur that, e.g., knowledge is stored in the brain.³² Moreover, with the dissemination of more and more neuroscientific knowledge, many folks on the street might also concur with the view that lies and deception are likewise “in the brain.” If so, where do we get off claiming that the folk would be speaking nonsense? We think this is an interesting and serious objection. We do not have space in this reply to discuss this issue in the depth it deserves, but we conclude with an outline of some reasons why we do not think this objection undermines our claims.

³¹ She may have lied and committed perjury regardless of whether she intended to deceive anyone. For example, suppose she were threatened by the defendant and hopes the jury sees through her knowingly false testimony. See Don Fallis, “What is Lying?” 106 *Journal of Philosophy* 29 (2009).

³² Nadelhoffer, *supra* at 11.

First of all, we note that there are some common inferential errors in the application of concepts (even if speakers otherwise understand the concepts). For example, even if many people think it is more probable that “Linda is a librarian and a Democrat” than that “Linda is a librarian,”³³ this is not necessarily a criterial change in the meaning of “probable.” And many who initially make the erroneous inference will, upon reflection, acknowledge the error. Similar errors may pervade many of the concepts we discuss.

More to the point, the criteria for the application of concepts and words will not always be transparent to those who otherwise employ the concepts and words successfully in most instances. Consider, by analogy, the concept of law or the word “law” (as used in the legal context). Although “people on the street” understand the concept and how to use the word, its criteria are opaque to and a matter of dispute among not only people on the street but also lawyers, law professors, and philosophers.³⁴ Those with legal training develop skills to employ “law” and other legal concepts with more sophistication, and much of the methodology of legal argumentation involves demonstrating how certain inferences appear to betray criteria accepted elsewhere within legal practices. Our concepts of “lies,” “knowledge,” and others we discuss appear to be

³³ See Amos Tversky & Daniel Kahneman, “Extensional versus Intuitive Reasoning: The Conjunction Fallacy in Probability Judgment,” *Heuristics & Biases: The Psychology of Intuitive Judgment* 19-48 (Gilovich, Griffin & Kahneman eds., 2002).

³⁴ See Jules L. Coleman & Ori Simchen, “Law,” 9 *Legal Theory* 1 (2009). It is also the case that “people on the street” sometimes say nonsensical things about law. Consider, for example, many of the claims about whether or not a judge is “activist” (or “makes law” rather than “applies law”). Often these claims are not only false but nonsense, because no sense has been given to the term “activist.”

like law in these respects.³⁵ They involve neither simple, transparent criteria nor do they appear to be “natural kinds” to which we can defer to the relevant scientists to discover their true essence. Rather, they each involve arrays of behavior that both serve a normative, regulative role in providing a standard for the successful application of the concepts *and* an empirical, evidential role of whether that concept applies in a particular instance. Given this complexity, it is no surprise that mistaken inferences will arise. Drawing attention to this dual role and the mistaken inferences it may engender has been our primary focus.

³⁵ For an argument that, as with legal training with regard to law, philosophical training may improve one’s judgments about the application of epistemic concepts see Timothy Williamson, *The Philosophy of Philosophy* 187-95 (2007).