**WINO Epistemology and The Shifting Sands Problem**

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By making plausible the Diversity Thesis (different people have systematically different and incompatible packages of epistemic intuitions), experimental epistemology raises the specter of the shifting sands problem: the evidence base for epistemology contains systematic inconsistencies. In response to this problem, some philosophers deny the Diversity Thesis, while others flirt with denying the Evidence Thesis (in normal circumstances, the epistemic intuition that p is prima facie evidence that p is true). We propose to accept both theses. The trick to living with the shifting sands problem is to expand epistemology’s evidential base so as to include scientific evidence. This evidence can provide principled grounds on which to decide between incompatible intuitions. The idea of resolving inconsistencies in an evidential base by adding more independent lines of evidence is commonplace in science. And in philosophy, it is simply Wide Reflective Equilibrium. We contend that the idea that epistemology would depend crucially on scientific evidence seems radical because many traditional epistemologists practice reflective equilibrium that is WINO, Wide In Name Only. We suggest five different lines of scientific evidence that can be, and have been, used in support of non-WINO epistemological theories.

Contemporary epistemology gives a prominent role to intuitions about whether, in a certain situation, S knows that p or S is justified in believing that p. Most analytic epistemology proceeds on the assumption that intuitions are a source of evidence in philosophy, just as observations are a source of evidence in science. In normal circumstances, the intuition that p is prima facie evidence that p is true. Philosophers working under the banner of experimental epistemology bring the methods of science to bear on epistemological theorizing. Much of their work has involved investigating whether non-philosophers share philosophers’ intuitions about philosophically important cases. This has raised considerable debate about the proper role of intuitions in philosophy. In general, analytic epistemologists are considerably more sanguine than experimental epistemologists about whether intuitions are an unproblematic source of evidence for philosophical theorizing.

Our goal in this paper is to provide a framework for understanding the role of intuitions in epistemology that will do the apparently impossible: It will be acceptable, in principle at least, to most experimental epistemologists and to most analytic epistemologists who are critical of experimental philosophy. The paper will proceed as follows. In section 1, we introduce some evidence for the diversity thesis: Different people appear to have systematically different intuitions about cases that are crucial to epistemological theorizing. This raises the shifting sands problem: How is epistemological theorizing supposed to proceed given this apparently inconsistent evidential base? The most natural approach to the problem is to try to narrow the evidential base—to eliminate many of these intuitions as irrelevant. In section 2, we propose to address the shifting sands problem by expanding the base of evidence relevant to epistemological theorizing. This defangs the shifting sands problem by adding non-intuitional evidence that can provide us with a principled way to decide which intuitions to reject and which, if any, to retain. This strategy is not radical. It is really nothing more than wide reflective equilibrium (WRE), which takes normative principles to be justified when they are brought into coherence with our particular judgments about cases and our best relevant background theories, including empirical theories. In section 3, we explore some ways in which scientific evidence has been fruitfully brought to bear on epistemological theorizing. Facts about cognitive ethology, the social functions of epistemic categories, and various parts of cognitive science have all been used to construct epistemological theories that genuinely meet the standards of WRE. In section 4 we conclude that a robust naturalism that incorporates many distinct lines of evidence is the best way to overcome the shifting sands problem in epistemology.

1. Experimental Epistemology and the Shifting Sands Problem

The most important general result of experimental epistemology is that different people have systematically different intuitions about cases that are crucial to epistemological theorizing. For example, Weinberg, Nichols and Stich (2001) presented the following Gettier-style example to Western and non-Western participants.

Bob has a friend, Jill, who has driven a Buick for many years. Bob therefore thinks that Jill drives an American car. He is not aware, however, that her Buick has recently been stolen, and he is also not aware that Jill has replaced it with a Pontiac, which is a different kind of American car. Does Bob really know that Jill drives an American car, or does he only believe it? (2001, 443)

Most Westerners had the intuitions that Western philosophers do, namely that Bob only believes that Jill drives an American car. But a majority of East Asians and South Asians had the intuition that Bob really knows that Jill drives an American car (2001, 443). This is a challenge for any approach to epistemology that takes intuitions to be evidence: When Westerners intuit that p while East Asians intuit that not p, whose intuitions are right? Do we have evidence for p only? Evidence for not p only? Evidence for both?

Consider another striking example of epistemic diversity. In Knowledge and Practical Interests, Jason Stanley argues for anti-intellectualism, which holds that whether a true belief is a genuine case of knowledge depends not just on truth-conducive factors but also on the practical costs of one’s belief being right or wrong (2005). His argument for this thesis relies on “the intuitive reactions we have” about a series of cases. In each case, Hannah and Sarah are driving home from work on Friday and wondering whether the bank will be open on Saturday so they can deposit their paychecks. In the high stakes case, it is imperative that they deposit their checks before Monday because they have an important bill coming due. In the low stakes case, there is no such bill coming due and so there is no such imperative. Stanley believes that “the intuitive reactions we have” to these cases are different. When the stakes are high, Hannah and Sarah do not know that the bank will be open on Saturday; but when the stakes are low, they do know that the bank will be open on Saturday (2005, 5).

Intuitions play a central role in Stanley’s epistemological theorizing: “my central interest is to evaluate accounts that make as much sense of these intuitions as possible” (2005, 13). Despite their apparent centrality, Stanley contends that “the role of these intuitions is not akin to the role of observational data for a scientific theory. They are instead intended to reveal the powerful intuitive sway of the thesis that knowledge is the basis for action” (2005, 12). It’s not clear to us how to interpret Stanley here. If the emphasis is that intuitions aren’t like observational evidence in some way, we can grant that. But it is crucial for Stanley’s argument that we have anti-intellectualist intuitions. Stanley’s “central interest is to evaluate accounts that make as much sense of these intuitions as possible.” But if our intuitions are that the costs of being wrong about p don’t matter to whether S knows that p, then Stanley’s anti-intellectualism is not going to make “much sense of these intuitions.” Our intuitions in high-risk and low-risk cases are crucial evidence for Stanley’s anti-intellectualism.

In fact, studies seem to confirm that Stanley’s epistemic intuitions are not generally shared. When presented with the Hannah-Sarah bank examples, the pattern of people’s intuitive responses did not support Stanley’s claims about ordinary intuitions. People were not less likely to attribute knowledge to Hannah and Sarah as the stakes got higher (Feltz & Zarpentine 2010, 688). To guard against the possibility that ordinary folks weren’t properly understanding the example, Feltz and Zarpentine tried out three additional cases. In one, the question was whether a truck driver knew that his truck would make it over a “rickety wooden bridge.” In the low stakes case, the bridge spanned a “three foot ditch”; in the high stakes case, it spanned a “yawning thousand foot drop” (2010, 692-3). Even in this case, in which the stakes were made vivid, people’s intuitions about knowledge were not influenced by the stakes. Feltz and Zarpentine conclude that practical facts do not play a fundamental role in ordinary knowledge ascription (2010, 694). Another study by May, et al. (2010) found similar results. The crucial point here is not simply that people occasionally have different particular epistemic intuitions. The point is that different people appear to have different packages of epistemic intuitions—different sets of reasonably coherent epistemic intuitions. Stanley has anti-intellectualist epistemic intuitions; many other people don’t.

Merely because some folks don’t share Stanley’s anti-intellectualist intuitions, it doesn’t follow that Stanley is wrong about knowledge. And just because people in some cultures don’t share our Gettier intuitions, it doesn’t follow that our Gettier intuitions are wrong. The real problem is more general, and it arises when we conjoin two propositions.

Evidence Thesis: In normal circumstances, the epistemic intuition that p is prima facie evidence that p is true.

Diversity Thesis: Different people have systematically different and incompatible packages of epistemic intuitions.

These two theses imply what we will call the shifting sands problem: the evidence base for epistemology apparently contains systematically inconsistent packages of intuitions.[[1]](#footnote-1) Our epistemological theories rest on shifting sands rather than firm bedrock. This problem gets its bite when we note that epistemological theories are highly sensitive to intuitional evidence (Weinberg, Nichols & Stich 2001, 432).

Sensitivity Thesis: Other things being equal, significantly different and incompatible packages of epistemic intuitions will support significantly different and incompatible epistemological theories.

The sensitivity thesis makes the shifting sands problem especially acute. Epistemology’s evidence base consists of incompatible packages of intuitions, which support incompatible epistemological theories. So how can epistemic theorizing proceed? The most natural way to escape this predicament is to narrow the evidential base—to eliminate many of these packages of intuitions as irrelevant to philosophical theorizing. There are two ways to do this. One can deny the Diversity Thesis and insist that there is only one correct package of epistemic intuitions (e.g., Sosa 2009, Ludwig 2007). This strategy faces a tough problem: How to identify whose intuitions are the right ones, the ones on which to build our epistemological theories. This problem might turn out to be quite delicate as well. There is some evidence that Western men and women tend to have different intuitions about some philosophically important cases, including Gettier cases (Buckwalker and Stich 2010). If this is true, do we privilege men’s or women’s intuitions? And on what grounds? Perhaps there is a way around this problem. But this is not an easy—or quite frankly a comfortable—predicament to be in. A second way to tackle the shifting sands problem is to deny the Evidence Thesis, the idea that intuitions count as prima facie evidence for philosophical theories. While some experimental epistemologists seem to flirt with this strategy (e.g., Swain, et. al 2008, Weinberg 2007), it is not viable. That’s because experimental epistemology appeals freely to intuitions. As Jesse Prinz (2008) has noted, experimental philosophy is a democratization of the traditional, intuition-based approach to philosophical theorizing. It broadens philosophy’s evidential base by eliciting intuitions from non-philosophers as well as philosophers. So to deny that intuitions serve as evidence for epistemology is to deny the relevance of experimental epistemology to epistemology. These are not meant to be the final words on these attempts to defeat the shifting sands problem. For the purposes of this paper, however, we are going to explore what we take to be a more promising approach.

2. Living with Shifting Sands

Rather than narrow the base of evidence for epistemology, we propose to take the opposite tack and expand it. This dissolves the shifting sands problem by providing many different lines of evidence that can serve as a basis for privileging some intuitions over others. This doesn’t undermine the Diversity Thesis—different people have different intuitions. And it doesn’t undermine the Evidence Thesis—intuition is still a defeasible source of evidence for epistemology. It undermines the sensitivity thesis. Epistemological theorizing should not be particularly sensitive to intuitional evidence because there is so much other evidence our epistemological theories must capture. In this way, the shifting sands problem is defanged. We don’t deny that there are shifting sands, we deny that they are a serious problem.

Trying to resolve inconsistencies in a base of evidence by adding more independent lines of evidence is not a radical or a new strategy. In science, many bodies of evidence contain putative inconsistencies. Different laboratories deliver different findings; different scientists make different observations; and not all of these findings and observations can be true. One good way to resolve these inconsistencies is to look at a wider array of evidence to determine whether the weight of all the evidence favors one way of resolving the inconsistency over another. If we only have one source of evidence for our epistemological theories—intuitions—an inconsistency in that evidence is a serious problem. But adding many new lines of evidence dilutes the significance of those inconsistencies. This strategy does not guarantee that we can control the shifting sands problem. A robust fund of non-intuitional evidence provides the resources to wash out the inconsistencies in people’s epistemic intuitions—sometimes, usually, perhaps even always. But not necessarily always. Is this enough to contain the problem? We think so. It is quixotic to expect philosophical methods to give us guarantees of success. Ultimately, we judge the quality of methods in philosophy like we judge engineers—not by their earnest guarantees but by the quality of their results.

We propose to defang the shifting sands problem by expanding the evidential base for epistemology so as to include scientific evidence. We will explore what sort of scientific evidence is relevant to epistemological theorizing in section 3. But the general idea that the evidence base for epistemology should include science should seem familiar to philosophers. It is, in essence, wide reflective equilibrium. Nelson Goodman first proposed the idea of reflective equilibrium as a method to justify deductive inferences. We begin with a set of deductive inference rules and particular deductive inferences we endorse. We then justify those rules and the cases they subsume by bringing them into harmony. “A rule is amended if it yields an inference we are unwilling to accept; an inference is rejected if it violates a rule we are unwilling to amend” (Goodman 1965, 64). Narrow reflective equilibrium aims to justify our epistemological claims by bringing two sets of propositions into harmony, our general epistemological principles and particular epistemological judgments. Wide reflective equilibrium (WRE) adds one more set of propositions to the brew—“a set of relevant background theories” (Daniels 1979, 258). WRE takes normative principles to be justified when they are brought into coherence with our particular judgments about cases and our best relevant background theories, including empirical theories. WRE describes exactly how we propose to dissolve the shifting sands problem.

For many years, naturalists have argued that epistemology’s evidential base should be expanded to include empirical evidence. The argument from shifting sands is the most recent—and we think quite powerful—attempt to expand epistemology’s evidential base. But one way traditionalists have responded to such arguments is to insist that the naturalist is raising an unnecessary ruckus. Most traditional epistemologists accept wide reflective equilibrium, and it explicitly takes epistemology’s evidential base to include science; and so the naturalist is insisting on something she’s already got (DePaul 1998, Feldman 2001, Levy 2005). We want to embrace the contention that this attempt to dissolve the shifting sands problem is old hat. The naturalist need not demand that epistemology’s evidential base be opened up to scientific evidence because most traditional philosophers already embrace WRE as a reasonable approach to justifying epistemological principles. The naturalist’s attempt to dissolve the shifting sands problem is not radical. It drops naturally out of a very traditional approach to doing epistemology. Traditional analytic epistemologists should accept it with aplomb.

At this point, have we reached a tentative, consensus framework for addressing the shifting sands problem? While there are still many details to be hashed out, can most experimental and analytic epistemologists perhaps agree that the shifting sands problem can be tamed by WRE? In principle, yes. But here’s the rub. Despite widespread support for WRE among traditional philosophers, we have been unable to document a single case in which a traditional analytic epistemologist has used scientific evidence to support a theory that yields a profoundly counterintuitive result. Informal surveys of well-known epistemologists have not netted a single example of an epistemologist embracing a counterintuitive result for the sake of scientific evidence. (Weatherson [2003] defends a theory of knowledge as justified true belief, despite its counterintuitive results in Gettier cases. But he does not appeal to scientific evidence in support of this counterintuitive theory.) In practice, traditional epistemologists proceed according to NRE—they attempt to bring into harmony their epistemic principles and their judgments about particular cases. Scientific evidence plays no role. Many traditional philosophers today practice Wide Reflective Equilibrium in name only. In the U.S., Republican politicians who are deemed not to be conservative enough are called RINOs, Republicans In Name Only. When a philosopher embraces WRE but does not actually use any scientific evidence in support of her epistemological theory, that instance of reflective equilibrium is WINO, Wide In Name Only. In practice, WINO epistemology is nothing more than narrow reflective equilibrium. As such, it falls victim to the shifting sands problem.

3. Against WINO Epistemology: The Case for Genuine Wide Reflective Equilibrium

Timothy Williamson criticizes wide reflective equilibrium as being excessively vague (2007, 244). It gives no guidance about how scientific theories, or what scientific theories, are to be brought into harmony with epistemological principles and particular epistemological judgments. Without at least some direction about how science is to be used as evidence for an epistemological theory, wide reflective equilibrium is no more than narrow reflective equilibrium and a promissory note. The charge of vagueness can be answered. Naturalistic philosophers have brought empirical research to bear on epistemological theorizing in a number of different and interesting ways. Some will have abstract doubts about whether science can serve as evidence for normative, epistemological theories (“No ‘ought’ from an ‘is’!”). Fair enough. But the best way to allay doubts about the possibility of naturalistic epistemology is to just do it.

3.1. Cognitive Ethology

Hilary Kornblith (2002) takes knowledge to be a natural kind that earns its keep by playing a central role in scientific explanations. Knowledge, for Kornblith, is the natural kind referred to by cognitive ethologists when they ascribe knowledge to non-human animals—as well as the kind we refer to when we ascribe knowledge to our conspecifics. Cognitive ethology seeks to understand the cognitive states and processes of non-human animals in their natural conditions. Consider the plover using a broken-wing display to lure a potential predator away from its nest. Explaining the broken-wing display requires appeal to a number of the plover’s beliefs, for example, beliefs about the location of the predator and the nest. These beliefs will often be true. Kornblith recognizes that in order to explain the individual plover’s behavior, we need only appeal to the plover’s true beliefs. But cognitive ethologists often appeal to knowledge in their explanations of such intelligent non-human animal behavior: the plover knows that the intruder is potentially dangerous, the plover knows where the nest is, the plover knows where the predator is. What scientific explanation requires that we ascribe knowledge to the plover?

The ascription of knowledge to the plover is needed, not to explain individual behavior, but to explain the general cognitive capacities of non-human animals. The plover’s cognitive capacity to produce true beliefs about salient features of its environment is a result of natural selection. Evolution explains the existence of the plover’s reliable belief-forming mechanism. And the operation of this mechanism, in the right sort of environment, explains the plover’s coming to true beliefs about its surroundings. “It is the focus on this adaptation of these cognitive capacities to the environment that forces us to explain the possibility of successful behavior, and it is the explanation of successful behavior that requires the notion of knowledge rather than mere belief” (2002, 57). Cognitive ethologists ascribe knowledge to instances of reliably produced true belief. Knowledge is a posit of cognitive ethology and it refers to reliably produced true belief. Nature, for Kornblith, is a reliabilist.

Kornblith presents an ingenious example of WRE. He delivers a theory of knowledge that is based on both intuitions and empirical evidence—in particular, on evidence about animal behavior, animal capacities, and their biological and psychological causes. What’s more, this line of evidence can help to alleviate the shifting sands problem. Consider the finding that people in different cultures have different intuitions in the following Truetemp case (Weinberg, Nichols & Stich 2001, 439).

One day Charles is suddenly knocked out by a falling rock, and his brain becomes re-wired so that he is always absolutely right whenever he estimates the temperature where he is. Charles is completely unaware that his brain has been altered in this way. A few weeks later, this brain re-wiring leads him to believe that it is 71 degrees in his room. Apart from his estimation, he has no other reasons to think that it is 71 degrees. In fact, it is at that time 71 degrees in his room. Does Charles really know that it was 71 degrees in the room, or does he only believe it?

REALLY KNOWS  ONLY BELIEVES

Different people have different intuitions about this Truetemp case. While both Westerners and East Asians were more likely to say that Charles only believes that it is 71 degrees in the room, the minority of Westerners who judged that Charles really knows was considerably larger than the minority of East Asians who judged that Charles really knows. Whose intuitions are correct? Prima facie, Kornblith’s theory gives us an answer: the minority in both groups is in this case right. Charles really knows that it is 71 degrees in the room.

Many philosophers will rebel against this judgment because their intuitions scream that Charles only believes that it is 71 degrees in the room. But anyone genuinely committed to WRE cannot unthinkingly kowtow to their intuitions. Kornblith’s approach to epistemology is an achievement because it adds a new line of evidence, facts about cognitive ethology, to epistemology’s evidence base. Kornblith’s theory accounts for most people’s epistemic intuitions most of the time and it accounts for facts about cognitive ethology. But Kornblith’s theory does not capture most people’s intuitions in Truetemp cases. Then again, if the diversity thesis is true, no epistemological theory can capture everyone’s intuitions all the time. So the failure of Kornblith’s theory to capture our intuitions in the above case is not, by itself, a good reason to reject the theory. Any theory must be judged in terms of how well it accounts for the totality of evidence. The ability of Kornblith’s theory to account for facts about cognitive ethology might more than compensate for its failure to account for our intuitions in Truetemp cases. In this way, Kornblith’s WRE approach reduces the impact of intuitions on epistemological theorizing, and so provides a line of evidence that can potentially be used to overcome the shifting sands problem.

3.2. Cognitive Psychology

In Epistemology and the Psychology of Human Judgment (2005), Michael Bishop and J.D. Trout identify certain areas of cognitive science, behavioral economics, and predictive modeling that offer explicit epistemological recommendations about how people ought to reason about certain kinds of problems. For example, Carroll et al. (1982) recommend a simple-to-use model for reasoning that is more reliable than parole boards in predicting recidivism among potential parolees who were convicted of violent crimes. The simple-to-use model is better than standard ways of coming to parole judgments on thoroughly non-subtle grounds: the model is cheaper, more reliable, and leads to a safer society with fewer violent criminals on the streets. Bishop and Trout call this diverse range of explicitly normative studies Ameliorative Psychology.

This move, contending that parts of cognitive science are normative, is crucial to the research program proposed by Bishop and Trout. They can appeal to these normative, epistemological judgments in science to build their epistemological theory without worrying about having to broach the is-ought divide. Bishop and Trout contend that underlying the epistemic judgments of Ameliorative Psychology is a normative framework that evaluates reasoning. They call this normative framework Strategic Reliabilism, and it holds that “epistemic excellence involves the efficient allocation of cognitive resources to robustly reliable reasoning strategies applied to significant problems” (2005, 71). Strategic Reliabilism recommends reasoning strategies that are reliable across a range of cases, relatively easy to implement, and address significant problems. Strategic Reliabilism needs to be understood as embracing a very wide conception of reasoning, where any cognitive system that typically produces beliefs can be evaluated. Bishop and Trout envision Strategic Reliabilism rendering two sorts of practical epistemic judgments:

1. Its conservative judgments identify a reasoner’s causally operative reasoning mechanisms that can’t be changed or are so epistemically excellent (compared to alternatives) that they should not be changed.
2. Its revisionary judgments identify replacement cognitive mechanisms and strategies—new ways of reasoning that the reasoner should be using to think about the world.

A lot of our cognitive machinery is hard to change, and so this part of the applied component will be—and has been—fruitfully investigated and described by psychology. As for the revisionary judgments, we still have a lot to learn. But we already know quite a bit (Bishop & Trout 2008, 1062).

Although the evidence on which Strategic Reliabilism is built consists of reasoning strategies we can choose to adopt or not adopt—that’s what Ameliorative Psychology is about—the application of the theory is not limited to such voluntary reasoning strategies. It can apply to all belief-forming mechanisms, including relatively fixed input systems like visual perception.

While the approach adduced by Bishop and Trout is unorthodox, it can be seen as quite traditional. Rather than develop an epistemological theory that accords with some group of people’s epistemic intuitions, they propose an epistemological theory that accords with the normative judgments of Ameliorative Psychology. It is akin to narrow reflective equilibrium in that it tries to harmonize general and specific epistemic judgments. What makes this brand of reflective equilibrium wide is that those epistemic judgments come from science, from Ameliorative Psychology. As a result, this approach provides a way to decide between the shifting sands of different people’s epistemic intuitions. It should be noted, however, that Strategic Reliabilism is a theory of what counts as good reasoning, and so it is only directly relevant to judgments about good reasoning. There is some evidence that different people have different intuitions about what counts as good reasoning (Stanovich 1999). And Strategic Reliabilism provides a way to avoid the shifting sands problem in these cases (see Bishop & Trout 2005, 123-133).

Strategic Reliabilism is a theory of good reasoning, but the shifting sands problem that has received the most attention in epistemology has been concerned with knowledge. Does Strategic Reliabilism have anything to contribute to theorizing about knowledge? Perhaps. Consider the following principle:

(Reasoning-Knowledge Link 1) If belief B was arrived at by poor reasoning (where ‘reasoning’ is broadly construed), then prima facie B is neither justified nor an instance of knowledge.

If this principle is plausible, then it provides a link between judgments about good reasoning and knowledge. Any belief produced by a reasoning strategy that Strategic Reliabilism counts as poor is prima facie neither justified nor knowledge. Here is another principle that might make Strategic Reliabilism relevant to theories of knowledge.

(Reasoning-Knowledge Link 2) If belief B was arrived at by reasoning that meets a certain standard (where ‘reasoning’ is broadly construed), then prima facie B is justified and, if B is true, it is an instance of knowledge.

This principle provides another link that can help the Strategic Reliabilist make justification and knowledge judgments. Any belief produced by a reasoning strategy that Strategic Reliabilism counts as at least good is prima facie justified and, if true, knowledge. (Note that this principle takes Gettier cases to count as knowledge. This is one reason the principle says that good reasoning and truth are only prima facie evidence for knowledge). If these principles are plausible, then Strategic Reliabilism offers at least some potential to help resolve the shifting sands problem for theories of knowledge. And like Kornblith’s theory, Strategic Reliabilism suggests that a naturalist devoted to WRE will perhaps need to cast a wary eye on our non-reliabilist intuitions.

3.3. The social functions of epistemological categories

In recent years, a number of philosophers have tried to expand the evidence base of epistemology to include the social function of epistemic categories (e.g., Brandom 1994, Williams 2000, Alston 2005, Weinberg 2006). The general idea is that if (say) knowledge serves an important social function, then such facts can provide a solid evidential base on which to build a theory of knowledge. Edward Craig’s influential, Knowledge and the State of Nature (1990), adopts this social function approach. Craig begins by asking what role knowledge plays in our lives and “what a concept having that role would be like, what conditions would govern its application” (2). Given that we need true beliefs about our environment in order to successfully interact with it, we must be able to identify reliable sources of information. Craig proposes that the purpose of our concept of knowledge is to “flag appropriate sources of information” (11). Each of us has sources of information (e.g., sensory faculties, powers of reasoning) that can supply us with a “primary stock of beliefs” (1990, 11). We ascribe knowledge to the products of these sources of information because these sources are reliable. It is also highly advantageous for people to be able to access other people’s beliefs. But some informants are more likely to supply true belief than others. In witnessing a hit and run, the person driving the car directly behind the offending car will be a more reliable source of information than an individual napping on a bench nearby. So the driver can be said to know details of the accident that the napping individual does not. Ram Neta (2006) extends Craig’s basic approach to a wider range of categories of epistemic appraisal. Like Craig, Neta contends that our interest in social cooperation motivates an interest in flagging creditable sources of information. Different categories of epistemic appraisal are designed to flag informants that are “creditable to various levels, or in various ways” (2006, 267). Some informants are more creditable than others, and different categories of epistemic appraisal mark these differences. So, for example, if I say that you know that p, I am indicating that you are a more creditable informant than if I say that you are justified in believing that p.

There is good reason to suppose our epistemic categories have truth-linked functions. We can see these functions play out when certain social institutions are established or reformed. For example, epistemic categories play a crucial and explicit role in our judicial practices. For a person to be found guilty of a crime, the evidence for guilt must meet a certain standard (e.g., preponderance of the evidence, beyond a reasonable doubt). Many practices established by the judicial system, from law enforcement to jury instructions, are shaped with these epistemic standards in mind. Reforms to these practices are often reliabilist in nature: the practice is revised so as to achieve more accuracy. Consider eyewitness evidence. “Analysis of DNA exoneration cases since 1992 reveal that mistaken eyewitness identification was involved in the vast majority of these convictions, accounting for more convictions of innocent people than all other factors combined” (Wells, Memon & Penrod 2006, 45). As a result, psychologists have proposed new law enforcement policies with respect to lineups and some of these policies are being put into effect—though sometimes imperfectly. Some of the recommendations are: lineups should include only one suspect and at least five fillers, fillers should match the description given by the eyewitness, witnesses should be told that the suspect might not be in the lineup, and the officer administering the lineup shouldn’t know who the suspect is (Wells, Cutler & Hasel 2008, 313-314). These reforms are meant to have the effect of making guilty judgments more reliable.

Identifying the social functions of our epistemic categories is an empirical task. Armchair speculations about the role of epistemic categories will understandably issue in roles that hew closely to our armchair intuitions about epistemology. Given the evidence available, it would be naive to suppose that our epistemic categories don’t also serve non-truth-linked functions, including some less than savory ones. Consider some potential functions of our practices of epistemic appraisal:

* Protecting the powerful
* Marginalizing the oppressed and powerless
* Protecting the entrenched theories, myths, legends or ideologies of a culture or group

History suggests that categories of epistemic evaluation have played such roles. When the Catholic Church deemed Copernicus’s system to be “formally heretical” and ordered Galileo to abandon it, they judged the Copernican proposition to be “foolish and absurd in philosophy” (Finocchiaro 1989, 146). This certainly seems to be a case in which epistemic standards served the function of supporting an entrenched worldview that favored the powerful. In the 19th century, Paul Broca proposed evidence-based arguments that white men are by nature more intelligent than women and men of other races.

Broca himself regretted that nature had fashioned such a system (1866, p. 296). But what could he do? Facts are facts. “There is no faith, however respectable, no interest, however legitimate, which must not accommodate itself to the progress of human knowledge and bend before truth” (in Count, 1950, p. 72). (Gould 1981, 84)

Feminist scholars have argued that practices of epistemic appraisal have been used to support and maintain social institutions that deny basic rights to women and other marginalized groups (e.g., Longino 1990, Antony 1993). There is reason to believe that scientific explanations of the female orgasm have betrayed politically biased epistemic practices (Lloyd 2005). An important feature of these unsavory functions—and in fact what helps them to be effective—is that they are so often hidden from our conscious awareness. This makes it particularly important for any investigation into the social functions of our epistemic categories to get beyond armchair speculation.

A defender of the social function approach might respond to the worry that our epistemic categories have non-truth-linked social roles by distinguishing between epistemic and non-epistemic (moral, political, cultural) roles of epistemic categories. When epistemic categories are used to (say) promote the interests of the powerful or marginalize the oppressed, the norms at work here are not epistemological ones. And so they can be safely ignored in our epistemological theorizing. This attempt to neatly divide the epistemological from the non-epistemological inevitably rests on some particular conception of what counts as epistemological. And so it might well fall victim to the shifting sands problem. But there are otherproblemswith trying to keep the non-epistemic riff raff out of our epistemological theorizing.

Let’s grant for the sake of argument that there is a single conception of epistemology we can use to distinguish between the epistemological from the non-epistemological. A pure theory is an epistemological theory that accounts for our epistemological obligations, duties and concepts without appeal to any normative considerations that are non-epistemological. A mongrel theory is one that takes normative, non-epistemological considerations to be relevant to our epistemological concepts, duties and permissions. We contend that a naturalistic approach that makes use of many different lines of evidence will deliver a mongrel epistemological theory, not a pure theory. This is not as outrageous as it might sound. Many epistemological theories accept an “ought implies can” restriction. But we might want a theory that embraces a stronger restriction: “ought implies reasonably can”—an epistemological theory should not oblige one to devote an unreasonably quantity of resources to a relatively unimportant question. Any theory that accepts this pragmatic constraint on epistemological duties will inevitably be a mongrel epistemology.

There is a deeper and more interesting reason to think that a naturalistic epistemology will be a mongrel epistemology. Philip Kitcher (1990) has argued that on some occasions, the non-epistemic roles played by our epistemic practices can have beneficial epistemic consequences. The advancement of science sometimes requires diversity of thought. That’s because a theory that is suggestive but not epistemically best today might win the day tomorrow. “[W]e sometimes want to maintain cognitive diversity even in instances where it would be reasonable for all to agree that one of two theories was inferior to its rival, and we may be grateful to the stubborn minority who continue to advocate problematic ideas” (1990, 7). For example, in the 1930s, the theory of continental drift was suggestive but fraught with serious evidential and theoretical difficulties. But given what we know now, it is a good thing, epistemically, that in the 1930s a handful of talented scientists were so committed to the idea of continental drift that they devoted their considerable energy and resources to developing and defending it. Kitcher suggests that the epistemic practices of scientists can serve a wide range of goals, and some of those goals are not intuitively epistemic ones. “The very factors that are frequently thought of as interfering with the rational pursuit of science—the thirst for fame and fortune, for example—might actually play a constructive role in our community epistemic projects, enabling us, as a group, to do far better than we would have done had we behaved like independent epistemically rational individuals” (1990, 16). In many cases, science is at its epistemic best when some scientists are not, when their epistemic practices are influenced by non-epistemic factors, including moral, political and personal commitments. The epistemic advancement of science is well-served when epistemic categories have a role that promotes the “baser motives” of some scientists (1990, 6). If Kitcher is right, then any attempt to sever the epistemic functions of our epistemic practices from the non-epistemic ones will inevitably blind us to some crucial epistemological phenomena. What all this suggests is that in epistemology as in the biological world, mongrels tend to be tougher and more robust than purebreds.

The social function approach to epistemology is unlikely to help resolve the shifting sands problem. It might, in fact, make it worse. Adding all of the social functions of epistemic categories to epistemology’s evidential base is probably not going to make the evidence seem clearer and more consistent. But that’s no reason to ignore it. A good theory is supposed to meet the challenge of smoothly accounting for a large batch of cacophonous, hard to understand evidence. The social function evidence just makes the challenge that much tougher—and so it will make the theory that ultimately accounts for it that much more impressive!

4. Conclusion

Experimental philosophy is sometimes represented by a burning armchair, but armchair theorizing has its place in philosophy and in science. A good naturalist doesn’t burn her armchair, but she doesn’t enter it in the Indianapolis 500, either. The fundamental premise of experimental epistemology, and experimental philosophy generally, is that if a philosophical theory depends on what our intuitions are, then we should have good empirical evidence about what our intuitions are. By uncovering evidence that different people have systematically diverse packages of epistemic intuitions, experimental epistemology puts us smack dab in the middle of the shifting sands problem: How can epistemological theorizing proceed if its evidential base contains significant and systematic inconsistencies? We have argued that the best way to address this problem is to dramatically expand epistemology’s evidential base. If intuitions are the only, or even the major, source of evidence for epistemology, then the shifting sands problem is devastating. When people genuinely have different packages of intuitions, their spades turn, and there’s not much more to do to rationally resolve the differences. But if intuitions are just one of many different lines of evidence for our epistemological theories, the other lines of evidence can be used to adjudicate the inconsistencies.

A genuinely wide reflective equilibrium approach to epistemology would incorporate as evidence multiple different areas of empirical research. This is not an empty recommendation. In this paper, we have identified five different lines of empirical evidence that can be, and have been, used as evidence for naturalistic epistemological theories: (1) cognitive ethology, (2) ameliorative psychology (i.e., those parts of psychology that pass explicit epistemological judgments), (3) the social functions of our epistemic categories, (4) facts about our cognitive limitations (for any theory that adopts an “ought implies can” or an “ought implies reasonably can” restriction on epistemological judgments), and of course (5) experimental epistemology. A robust naturalism will embrace all these lines of evidence—and perhaps many more. This list is not meant to be exhaustive. There are no specific, predetermined rules for how to develop a theory on the basis of all these various lines of evidence. But we can offer consilience as a principle that works in philosophy, science, and everyday life: Whereas one or two lines of evidence, by themselves, will sometimes not provide definitive support for a theory, multiple lines of evidence will often provide mutually reinforcing support for a theory. To take advantage of consilience, we need multiple lines of evidence. There is no guarantee that every inconsistency will be resolved. But philosophy, like life, does not come with guarantees.

This attempt to dissipate the force of the shifting sands problem should not strike the traditional analytic epistemologist as extreme or unconventional. It’s just wide reflective equilibrium. If it sounds radical, that’s because the reflective equilibrium embraced by analytic philosophers is too often wide in name only. It is well past time for epistemology, and philosophy in general, to give up its WINO ways.

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1. Contextualism is not a solution to the shifting sands problem. Contextualism is the idea that the truth-value of epistemic claims change systematically depending on the context in which they are made (DeRose 1995). This is logically independent of the diversity thesis, which holds that different people in the same context have systematically different and incompatible intuitions. To support contextualism, one would need a within-subjects design (same subjects, different contexts) or between-subjects design in which different speakers were placed in different contexts. Most (but not all) of the diversity evidence consists of between-subjects design studies in which participants are placed in the same context. Of course, the contextualist might argue that in every such between-subjects study, the contexts are relevantly different. But this seems deeply implausible. Are an Asian and a Western student (or a male and a female student both from New Jersey) sitting side-by-side in a classroom filling out exactly the same surveys really in relevantly different contexts? If not, then contextualism does not solve the shifting sands problem. [↑](#footnote-ref-1)