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Non-Traditional Factors in Judgments about Knowledge

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Abstract

One recent trend in contemporary epistemology is to study the way in which the concept of knowledge is actually applied in everyday settings. This approach has inspired an exciting new spirit of collaboration between experimental philosophers and traditional epistemologists, who have begun using the techniques of the social sciences to investigate the factors that influence ordinary judgments about knowledge attribution. This paper provides an overview of some of the results these researchers have uncovered, suggesting that in addition to traditionally considered factors like evidence and justification, a number of important non-truth-conducive factors play significant roles in determining when people ascribe knowledge. The present review focuses on four non-traditional factors: pragmatic load (in relation to contextualism and interest-relative invariantism), moral judgment, performance errors, and demographic variation.

1. Introduction

Philosophers have investigated a number of different factors when theorizing about knowledge. Analyses have primarily focused on what we might call *traditional epistemic* or *truth-relevant* conditions – those thought to increase the likelihood that a particular belief is true. As a result, epistemologists have typically considered things like justification, reliability, and evidence to be ''the right sort of factors'' that make a difference to whether or not someone knows something.

Recently, however, philosophers have also begun to consider the conditions that influence everyday knowledge ascriptions and usages of the word 'know' to be central to epistemic theorizing (for some variations on this theme, see Cohen 2004 or DeRose 2009; and Stanley 2005). This renewed interest in ordinary language has in turn inspired an exciting new wave of collaborative empirical research with experimental philosophers and traditional epistemologists using the methods and tools of the social sciences to provide the beginnings of a psychology of knowledge attribution (Schaffer and Knobe 2010; DeRose, 2011; Pinillos 2011, forthcoming; Nagel, forthcoming). Surprisingly, these researchers have discovered that judgments about appropriate uses of the word 'know' are often governed by what philosophers typically consider the ''wrong sort of factors'' – factors not previously thought make a difference to whether or not one knows. This research suggests that a large number of non-truth-relevant factors play significant roles in shaping the conditions under which people ordinarily make knowledge judgments.

The aim of this paper is to provide a review of the rapidly growing body of research in experimental epistemology exploring a variety of non-traditional factors that may influence attributions of knowledge. The review focuses on four areas of research: *pragmatic load*, *moral judgments, performance errors*, and *demographic variation*. The paper concludes with a discussion of potential new directions for future empirical research in experimental

epistemology, and the theoretical challenges that accompany this approach to the psychology of knowledge attribution.

2. Pragmatic Load (Contextualism and Invariantism)

In the experimental philosophy literature, the most widely discussed non-traditional factors are a cluster of phenomena we might label collectively as *pragmatic load*. This work, inspired by contemporary debates between popular linguistic theories like standard epistemic contextualism (DeRose 1992, 1999, 2005, 2009; Cohen 1988, 1999, 2004) and metaphysical theories of knowledge like subject-sensitive or interest-relative invariantism (Fantl and McGrath 2002, 2010; Hawthorne 2004; Stanley 2005) attempts to isolate and characterize the various *pragmatic* factors which will affect whether or not an attributor will say that a subject has knowledge.[1] Two questions that have been explored are whether or not intuitions about uses of 'know' are affected by various different non-traditional factors relevant to (i) the attributor's situation (like the salience of possible attributor error or attributor accommodation), and/or (ii) the subject's situation (like what is at stake for the person an attributor is evaluating).

Let's begin with research regarding the pragmatic factors relevant to the *salience of error* to the attributor. Philosophers have speculated that, keeping fixed all the traditional epistemic factors, attributors' desires to avoid making mistakes will discourage them from ascribing knowledge to a subject when the general possibilities for error are made salient to them (Schaffer 2006). To investigate this question, a number of researchers have designed experiments using stimuli based on DeRose's (1992) famous bank cases to see just how this factor actually influences ordinary judgment (Buckwalter 2010, 2011a; May et al. 2010; Feltz and Zarpentine 2010; Schaffer and Knobe 2010).[2] Consider the contrast between the following two vignettes used, in an experiment by Schaffer and Knobe, where error is made salient in a vivid way. Both vignettes begin as follows:

> Hannah and Sarah are driving home on a Friday afternoon. They plan to stop at the bank to deposit their paychecks. As they drive past the bank, they notice that the lines inside are very long, as they often are on Friday afternoons. Hannah says, ''I was at the bank two weeks before on a Saturday morning, and it was open. So this is a bank that is open on Saturdays. We can just leave now and deposit our paychecks tomorrow morning''.

The first vignette then continues:

> **Sarah replies, ''Ok, that sounds good. Let's go on Saturday''.**

The second continues like this:

> **Sarah replies, ''Well, banks do change their hours sometimes. My brother Leon once got into trouble when the bank changed hours on him and closed on Saturday. How frustrating! Just imagine driving here tomorrow and finding the door locked''.**

In this experiment, participants were given one of these two vignettes and asked to rate their level of the agreement with the claim, ''Hannah knows that the bank will be open on Saturday''. What Schaffer and Knobe found is that participants made quite different judgments in these two cases. Those who are given the first (low error) case typically agree that Hannah knows that the bank will be open on Saturday, whereas those given the second (high error) case typically disagree.[3] Yet it seems that the difference between these two cases is only whether or not Sarah questions Hannah's belief that the bank will be open.[4] From such results, it appears that these researchers have corroborated the

philosophical intuition whereby the level of possible error made salient to the attributor does indeed play an important role in people's willingness to attribute knowledge.

Another pragmatic attributor effect is known as *accommodation*. While it was Lewis (1979, 1999) who first identified this factor, only recently has empirical evidence been collected demonstrating its role in knowledge attribution. As an epistemic contextualist, Lewis holds not only that the proper interpretation of a knowledge ascribing or denying sentence changes with the conversational context, but also that the standards imposed by those contexts can be fixed in part by the very utterance of a knowledge assertion or denial. Once operationalized, this principle predicts that attributors will often accommodate subjects by shifting the standards it takes in order to know something in a way that is sensitive to the actual knowledge claims that subjects utter.

To test this prediction, Buckwalter (2011b) gave people a number of different cases very similar to the bank cases used by Schaffer and Knobe (2010). All the truth-relevant factors remained the same within each case. The only difference across these cases was what the subject claimed at the end of the vignette. Some of the vignettes ended with:

(1) Hannah says, ''I was just here, **I know** that the bank will be open on Saturday''.

Others ended with:

(2) Hannah says, ''Maybe you're right, **I don't know** that the bank will be open on Saturday''.

Participants who read the vignettes ending in (1) were asked whether or not they thought that Hannah's knowledge claim was true. Those who read the vignettes ending in (2) were asked whether or not they thought that Hannah's knowledge denial was true. Since all the other details of the case remained the same, if Lewisian accommodation plays absolutely no role in attributor judgments then we would expect participants to decide what Hannah knows, and then give different answers when asked about the truth of (1) and (2), since Hanna's knowledge assertion and knowledge denial cannot both be true. If, on the other hand, attributors seek to accommodate subject's knowledge statements, then we might expect them to be more likely to judge that both Hannah's knowledge assertion, in (1), and knowledge denial, in (2) to be true. That is exactly what was found. Overall people generally regarded both (1) and (2) to be true. Such results begin to suggest that accommodation is an important component in determining when speakers will attribute knowledge.

Thus far, we have considered the experimental evidence in favor of the claim that knowledge attributions are affected by error salience and accommodation. A number of philosophers have also maintained that knowledge attribution is highly sensitive to a subject's *practical interests* (Hawthorne 2004; Stanley 2005; Hawthorne and Stanley 2008).[5] Again, holding fixed all the other epistemic details of the case, it is often said that people will be much less likely to ascribe knowledge when what is at stake for a subject is high, than when it is low. However, actually detecting this effect for subject stakes under properly controlled experimental conditions has proven remarkably difficult. Consider, for example, the study by Feltz and Zarpentine (2010) in which participants were presented with one of the following two cases manipulating what is at stake for a subject of the vignette:

> John is driving a truck along a dirt road in a caravan of trucks. He comes across what looks like a rickety wooden bridge over a ***[three foot/yawning thousand foot drop]***. He radios ahead to find out whether other trucks have made it safely over. He is told that all 15 trucks in the caravan

made it over without a problem. John reasons that if they made it over, he will make it over as well. So, he thinks to himself, 'I know that my truck will make it across the bridge'.

Participants were then asked to agree or disagree with the claim, ''When John thinks to himself, 'I know that my truck will make it across the bridge,' what he thinks is true''. If the practical interests of the subject's situation influence attributor's judgments about what that subject knows, we would expect knowledge ratings to differ when the cost of being wrong is small (a three foot drop) and when there is a great deal at stake (a yawning thousand foot drop). What Feltz and Zarpentine found, however, is that the stakes of the case made no statistically significant difference in attributor judgments. In both the low and the high stakes case, the majority of participants agreed that the subjects knew that the truck would make it across the bridge.

Since this original experiment, a number of further studies have attempted to investigate attributor sensitivity to subject stakes in this way with mixed results. Using variations on the footbridge case, as well as versions of the bank cases discussed earlier, Feltz and Zarpentine (2010) continue to replicate this null finding. Neither was Buckwalter (2010, 2011a) able to detect the predicted effect. May et al. (2010) do find a small statistically significant difference in knowledge ratings by stakes, though they go on to speculate that since this difference was on the side of agreement with the knowledge attribution in both cases, ''a person's practical interests affect our confidence in attributing knowledge, but this difference does not determine whether we do credit her with knowledge''. And lastly, related research by Phelan (2011) suggests not only that subject stakes have only a marginal effect on knowledge attribution, but also on people's evaluations of a subject's evidence.

In fact, the only evidence in the experimental epistemology literature suggesting a non-negligible effect for subject stakes is found in Pinillos (forthcoming).[6] Pinillos speculates that the reason why previous researchers had difficulty detecting stakes effects is that participants in prior stakes experiments were not actually holding fixed all the truth-relevant factors of the vignettes, but instead, were assuming different amounts of evidence between cases. In order to test this hypothesis, he proposes a new experimental paradigm referred to as ''evidence-seeking experiments''. Using this new design, Pinillos asks participants how much evidence subjects in low stakes and high stakes situations must collect before they have knowledge. Consider the following two low stakes and high stakes cases:

> Peter, a bright college student, has just won a contest sponsored by his bank. The prize is a **chance to win some movie tickets**. In order to win the tickets and as a publicity stunt, Peter is given a whole day to correctly count all the pennies in a jar located at his local branch. The jar contains around a hundred pennies. **Peter wants the passes but it's not a big deal at all if he doesn't get the correct answer.**

> Peter, a bright college student, has just won a contest sponsored by his bank. The prize is a chance to win a **very large sum of money**. In order to win the money and as a publicity stunt, Peter is given a whole day to correctly count all the pennies in a jar located at his local branch. The jar contains around a hundred pennies. **It turns out there is a lot at stake for Peter. Peter is fully aware that if he answers correctly, he will win the prize and thereby be able to pay for his mother's life-saving operation (which they couldn't afford otherwise). So it's really important that Peter count the pennies correctly since his mother's life is at stake.**

After reading one of these cases, participants in an experiment were given a sentence completion task: ''Peter must count the pennies in the jar at least _____ times before he

comes to know the correct answer''. What Pinillos discovered was that participants indicated that subjects in the high stakes case needed to collect more evidence (median answer was 3.5 penny counts) than subjects in the low stakes condition (median answer 2 penny counts). Here, and in subsequent similar sorts of ''evidence-seeking'' experiments, Pinillos continues to find the same basic effect. Participants judge that more evidence needs to be collected by subjects in order to know in high stakes cases than in low stakes cases.[7]

At this writing, there is a lively debate about how best to interpret these findings. One way, of course, is to claim they demonstrate the role that subject stakes play in participant's attributions of knowledge by showing that more evidence must be collected in high stakes situations in order for a subject to know. However, others have challenged this interpretation and suggested that these results do not reflect knowledge's intrinsic sensitivity to subject stakes. Rather, they contend, the experiments illustrate a special case of a general fact about what behavior is required for the attribution of a range of mental states in high and low stakes situations. These theorists have shown that repeating Pinillos' exact experiments but substituting the words 'believe', 'hopes', or 'guesses' in place of the word 'knows' still produces the same pattern of results above, suggesting that the differences discovered in evidence collecting experiments are perhaps not due to something specific to people's concept of knowledge (Buckwalter 2011a; Buckwalter and Schaffer, in preparation; Schaffer 2011). All agree, however, that further experimental evidence is needed to determine the precise role that the practical interests of a subject play in attributions of knowledge and other mental states.

3. Moral Judgments

Our epistemic judgments concerning what someone knows often play a role in determining our moral judgments about how much blame or responsibility he or she deserves. For instance, suppose we were all trying to figure out whether or not President Nixon did anything wrong at Watergate. One natural way to proceed with the investigation would be to first find out if Nixon had any previous knowledge about the break-ins, and then second, decide things like his level of culpability for the crime or the punishment he deserves on the basis of what he *knew*.[8] However, recent work in experimental philosophy has suggested that this pattern of attributing knowledge and then making an evaluative judgment on its basis can also be reversed. A number of experiments have demonstrated that an attributor's prior *evaluative judgments* of a subject's actions, and in particular their moral judgments, can influence subsequent attributions about what that subject knows (Beebe and Buckwalter 2010; Beebe and Jensen, forthcoming; Buckwalter 2011b).[9]

This effect, the ''Epistemic Side-Effect Effect'', was first demonstrated by adapting the two cases first used by Knobe (2003) in a well-known study of intentionality judgments. Participants were asked to read one or the other version of the following vignette:

> The vice-president of a company went to the chairman of the board and said, ''We are thinking of starting a new program. It will help us increase profits, and it will also [**help/harm**] the environment.'' The chairman of the board answered, ''I don't care at all about [**helping/harming**] the environment. I just want to make as much profit as I can. Let's start the new program.'' They started the new program. Sure enough, the environment was [**helped/harming**].

Participants were then asked:

Did the chairman know that the new program would [**help/harm**] the environment?

What Beebe and Buckwalter found is that moral considerations can affect people's intuitions about what the chairman knew. Even though there is identically strong evidence in both help and harm conditions that the chairman's action would bring about a certain side-effect, participants were still significantly less likely to agree that the chairman knew his action would bring about that side-effect when the effect is good, and more likely to attribute knowledge when the result was bad. Subsequent research has replicated this effect in an impressive number of cases, and demonstrated similar effects for both aesthetic and prudential wrongness (Beebe and Jensen, forthcoming). This suggests that people's general evaluative judgments feature importantly in their application of the concept of knowledge.[10]

These effects of evaluative judgment on participant responses are so strong that they can challenge familiar philosophical wisdom about Gettier cases.[11] Buckwalter (2011b) presented participants with Gettier cases like the following:

> The mayor of a small town is trying to decide whether or not to sign a new contract with a local corporation. The math is all very complex, but all his economic strategists think that there's a relatively good chance that one outcome is that it will [**create/cut**] jobs for workers in the community. The mayor says, ''All I really care about is campaign contributions, not people's jobs, and I am sure to get millions from the corporation if I agree.'' So, he decides to sign their contract. The corporation, however, didn't take any chances. They secretly switched the contract with a totally different one right before the mayor signed it. By changing all the fine print, in some cases the opposite of what the mayor thought he was signing, the corporation could be sure it got what it wanted. Sure enough, shortly after the mayor signed the contract, a number of members of the community [**got/lost**] jobs, and the mayor received a huge donation to his reelection campaign.

Participants were then asked if they agreed or disagreed that the mayor knew that by signing a contract he would [create/cut jobs]. The result was that even though the mayor's belief is true only by luck, participants were still much more likely to agree that the mayor knew about the outcome when it was bad than when it was good. In fact, participants in this experiment *strongly* agreed that ''bad'' Gettier subjects did indeed have knowledge.[12]

So, evaluative judgments about these cases seem to play an important role in either attributing or not attributing knowledge to Gettier subjects. These Gettier data suggest that not only can non-traditional factors like evaluative judgment crucially impact knowledge attribution, but also that they may even be capable of superseding the influence of traditional epistemic principles (like doxasitic justification, or basing one's belief on the right sort of reasons) by completely overturning traditional intuitions in these theoretically important cases.

4. Performance Errors

When attempting to isolate the factors that influence ordinary attribution of a concept, it is often difficult to separate those that reflect some feature of the concept at issue from those that are *performance* based, or reflect features that only serve to bias or distort the underlying concept.[13] While philosophers have drawn this distinction in a number of different ways, one factor that seems to fall straightforwardly into the ''performance'' category is effects that arise due to the *order* in which vignettes are presented.[14] However, researchers have found that participants' epistemic intuitions can vary according to which

thought experiments they read first (Swain et al. 2008).[15] In these experiments, participants were presented with a version of Lehrer's (1990) famous Truetemp case, often thought to represent an important objection to reliablism:

> One day Charles was knocked out by a falling rock; as a result his brain was ''rewired'' so that he is always right whenever he estimates the temperature where he is. Charles is unaware that his brain has been altered in this way. A few weeks later, this brain rewiring 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 71 degrees.

What Swain et al. found was that attribution of knowledge to Charles varied greatly depending on what case participants had considered prior to reading about Charles. Participants were much less likely to agree that ''Charles knows that it is 71 degrees'' when the case was preceded by what they consider a clear case of knowledge, than when it was presented after a clear case in which the protagonist did not have knowledge. These authors argue that such results demonstrating that intuitions vary ''according to factors irrelevant to the issues thought-experiments are designed to address'' may provide a serious methodological challenge to those armchair philosophers who insist on relying solely on empirically unexamined intuitions.

Research concerning the role of performance-based factors in ordinary knowledge attribution is still in its infancy. However, future work in epistemology may draw on the discovery of a number of similar effects by experimental philosophers in neighboring domains. In the experimental literature on judgments about free will, Schulz et al. (2011) show that certain types of *personality traits* may predict the intuitions that philosophers have about moral responsibility. Gonnerman et al. (2011) report that intuitions in similar sorts of cases are also significantly effected by the *font style* in which vignettes are presented. More generally, intuitions have also been shown to vary as a result of *framing* (Petrinovich and O'Neill 1996; Uhlman et al. 2009) and as a result of the influence of various *environmental factors* (Helzer and Pizarro, 2011). It remains to be seen if these kinds of effects will also influence people's judgments about knowledge.

5. Demographic Variation

In addition to the non-truth-relevant factors manipulated in the vignettes above, experimental epistemologists have discovered that epistemic intuitions are also influenced by a number of different demographic variables. This research was largely inspired by the work of social psychologist Richard Nisbett and his collaborators who found differences between East Asian (Chinese, Japanese, and Korean) and western (European Americans) participants in a wide range of areas including perceptual processing (Nisbett and Miyamoto 2005), and preferences for rule-based or association-based reasoning strategies (Norenzayan et al. 2002; Nisbett 2003). In light of these important differences in cognitive processing, a number of experimental philosophers hypothesized that adult mental state attributions of knowledge might also vary from culture to culture (Weinberg et al. 2001; Nichols et al. 2003; Buckwalter and Stich 2011b) and by gender (see Starmans and Friedman 2009; Buckwalter and Stich 2011a, forthcoming).[16]

In a series of well-known experiments, Weinberg et al. (2001) found cultural differences in a number of influential philosophical thought experiments including Truetemp, Gettier, and Zebra (for more on zebra cases, see Dretske 1970).[17] In one of these experiments they used the following Gettier case:

> 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?

They found that while Westerns typically gave the philosophical standard answer that Bob only believes that Jill drives an American car, the majority of East Asian participants said the opposite – East Asians were far more likely than Westerners to attribute knowledge to Bob. If this pattern of attribution is robust, it would seem to suggest that unlike philosophers, East Asians simply do not share the intuition that certain Gettier subjects lack knowledge.[18]

Recent research has also demonstrated that intuitions about knowledge attribution vary dramatically based on one's *linguistic background*. In two experiments, Vaesen and Peterson (2011) found that in a number of cases, knowledge judgments of participants whose native language is English are significantly different from those of participants who are native Dutch, German, or Swedish speakers. Here is one of the vignettes they used:

> Boris asks his sister Steffi whether she knows the boiling point of water. Steffi, who has a Ph.D. in chemistry, answers truly: ''Yes, I do. The boiling point of water is 100 degrees Celsius at sea level, which equals 212 degrees Fahrenheit''.

What Vaesen and Peterson discovered is that Dutch speakers were much less likely than English speakers to agree that the information Steffi provided qualified as knowledge. Equally remarkable, is the fact that this effect was discovered in a population that consisted *entirely of formally trained philosophers*, suggesting that even expert intuitions are susceptible to the effect that linguistic background has on attributor judgments. Dutch speakers, it seems, are less likely to attribute knowledge in cases where the propositions are trivially true, or are part of common knowledge. As Vaesen and Peterson note when summarizing their research, such data may ''cast doubt on the common armchair assumption that philosophical theories based on armchair intuitions are valid beyond the linguistic background against which they were developed''.

Lastly, in addition to variation by culture or native language, variation in epistemic intuition may even extend to a pair of demographic groups of great interest to philosophers: ordinary people and formally trained philosophers. More specifically, recent evidence suggests that non-philosophers might have significantly different intuitions than trained philosophers regarding the necessary conditions for knowledge.[19] For instance, epistemologists have traditionally held that propositional knowledge entails belief. However, experiments by Myers-Schulz and Schwitzgebel (forthcoming) challenge the assumption that ordinary judgments actually reflect this principle. Here is one of the cases they used:

> Kate spent many hours studying for her history exam. She's now in class taking the exam. Everything's going quite well, until she comes to the final question. It reads, ''What year did Queen Elizabeth die?'' Kate had reviewed this date many times. She had even recited the date to a friend just a few hours earlier. So, when Kate sees that this is the last question, she feels relieved. She confidently looks down at the blank space, waiting to recollect the answer. But before she can remember it, the teacher interrupts and announces, ''Alright, the class session is almost over. You have one more minute to finalize your answers.'' Kate's demeanor suddenly changes. She glances up at the clock, now flustered and worried. ''Oh, no. I can't perform well under this kind of pressure.'' Her grip tightens around her pencil. She strains to recall the answer, but nothing comes to her. She quickly loses confidence. ''I suppose I'll just have to guess the answer,'' she says to herself. With a sigh of disappointment, she decides to write ''1603'' into the blank space. This was, in fact, the correct answer.

After administering this case, Myers-Schulz and Schwitzgebel asked one group of participants about what they thought the protagonist in the story knew, and a separate group about what the protagonist believed. In response, 87% of experimental participants in the first group said that Kate *knew* that Queen Elizabeth died in 1603, while only 37% of participants in the latter group said that Kate *believed* it. Here, and across a series of vignettes, involving implicit bias, forgetfulness, and emotional responses to fiction, Myers-Schulz and Schwitzgebel find that at least between-subjects, participants attribute knowledge but not belief. Departing from professional philosophical consensus, ''the empirical evidence just presented suggests that it is not prima facie obvious that all instances of knowledge are also instances of belief''.

6. Conclusions and Future Research

This review has focused on four areas of research in experimental epistemology that demonstrate the range of non-traditional factors that have been found to influence ordinary knowledge attribution. Due to this research, and as these various experimental research programs continue to move forward, epistemologists are left with a growing series of important empirical and theoretical questions.

On the empirical side, new research in each of the areas presented will undoubtedly continue to advance our understanding of these factors. Future work in experimental epistemology may focus on the precise role of attributor stakes, the robustness of demographic variation, worries about ecological validity, and the degree of susceptibility philosophers and non-philosophers share to framing, order, and environmental effects on their epistemic intuitions.

On the theoretical side, the philosophical significance of these findings needs to be explored in detail. There are a variety of views among epistemologists concerning the relationship between an account of knowing, on the one hand, and a psychological account of knowledge attribution, on the other.[20] Should epistemic theories be expected to account for the factors that influence ordinary attributions of knowledge, and if so, which ones? Does the fact that some of these factors apparently influence the judgments of trained philosophers threaten certain methodological assumptions concerning the use of epistemic intuitions as evidence for a theory of knowledge, and if so, which ones?

As the tools of experimental philosophy become an integral and widely accepted part of research in epistemology, the hope is that approaching these empirical and theoretical questions in tandem may lead to new significant progress in the study of knowledge.

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Short Biography

Wesley Buckwalter is a graduate student in the Philosophy and Cognitive Science programs at the City University of New York, Graduate Center. His current research lies at the intersection of epistemology, psychology, and cognitive science. He has authored or co-authored papers in the *Annual Review of Psychology*, *Behavioral and Brain Sciences*, *Mind & Language*, *Review of Philosophy and Psychology*, and the *Philosopher's Magazine*.

Notes

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[1] For a critical discussion of how recent experimental results might bear on these particular sorts of theories in epistemology, see DeRose (2011), Pinillos (2011), and Brown (2011). One important distinction is that some claim that the non-traditional factors presently discussed affect the conditions for *knowledge* (IRI) while others the conditions for uses of 'knowledge' (contextualism).
[2] For more on intuitions in bank cases by philosophers, see Bach (2010), Nagel (2008), Rysiew (2001), and Stanley (2005).
[3] Previous studies (Buckwalter 2010; May et al. 2010) did not detect this effect, leading Schaffer and Knobe to hypothesize that making error possibilities truly salient to attributors may require concrete and vivid examples or error (e.g. ''How frustrating!'').
[4] This finding is replicated in Buckwalter (2011a). However, some have objected that instead of simply raising error possibilities, Sarah might also be supplying extra information about the likelihood of the bank being closed, or making more salient the practical cost of being wrong.
[5] These supporters of interest relative invariantism hold that knowledge is sensitive to stakes (as features of the *ascribee's* practical situation). In contrast, however, standard contextualism typically holds that stakes can play a role in fixing the content of knowledge sentences (insofar as the truth of a knowledge ascription is sensitive to these features of the *ascriber's* speech context).
[6] Though for related research also, see Nagel (2010).
[7] Pinillos also gives evidence for certain principles connecting knowledge and action, which if true, may entail stakes sensitivity (see Pinillos, forthcoming; Pinillos and Simpson, manuscript).
[8] For more on the *social function* of knowledge attribution in assigning blame, see Beebe (forthcoming).
[9] Some of the most famous work in the experimental philosophy literature are studies showing that people's evaluative judgments can influence the application of a number of different non-epistemic concepts (for a review of these, see Knobe 2010; Knobe et al., forthcoming).
[10] This effect of evaluative judgment on epistemic judgment also showed significant gender variation (Buckwalter and Stich 2011a,b, forthcoming).
[11] Gettier (1963) cases are famous thought experiments in epistemology in which epistemic subjects have true, justified beliefs, but where (according to what is considered the standard philosophical intuition) they are said to lack knowledge. However, see Section 5 for evidence that this intuition may be culturally local.
[12] For more detailed theoretical discussion of how attribution of knowledge to ''bad'' Gettier subjects might impact discussions of JTB analyses, see Turri (forthcoming).
[13] For a related competence vs. performance debate concerning causal intuitions, see Knobe (2010) and Alicke et al. (forthcoming). But, also see Alexander et al. (2010a, b) for a discussion of the difficulties faced by this kind of distinction.
[14] Contextualism may provide one important exception to this classification. These effects might not be considered performance errors if order is included under a particular contextualist theory as one of the factors said to *rightly* influence an ascriber's speech context.
[15] For similar order effects discovered in moral intuitions, see Lombrozo (2009) and Liao et al. (forthcoming). Order has also been shown to effect the way professional philosophers form moral intuitions (Schwitzgebel and Cushman, forthcoming). Also, see recent follow-up work to Swain et al. (2008) by Wright (2010).
[16] For similar work on semantic intuitions cross-cultures, see Machery et al. (2004, 2009).
[17] Weinberg et al. (2001) not only detects cultural variation in epistemic intuition among Indian, Asian, and Western undergraduate students, but also significant variation according to *socioeconomic status*, suggesting that ''high SES subjects accept much weaker knowledge-defeaters than low SES subjects''.
[18] For some speculative challenges to these data, see Nagel (forthcoming); for replications of similar effects, see Buckwalter and Stich (2011b).
[19] For further investigation of the effect of philosophical training on Gettier intuitions, see Buckwalter and Stich (2011b). However, also see Bengson et al. (2009) for evidence suggesting that ordinary people do seem to agree with those philosophers who are intellectualists about knowing-*how*.
[20] For differing views on the proper role of ordinary language on epistemic theorizing, see Hazlett (2010) and Ludlow (2005).

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