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Do you know more when it matters less?

Adam Feltz and Chris Zarpentine

According to intellectualism, what a person knows is solely a function of the evidential features of the person's situation. Anti-intellectualism is the view that what a person knows is more than simply a function of the evidential features of the person's situation. Jason Stanley (2005) argues that, in addition to "traditional factors," our ordinary practice of knowledge ascription is sensitive to the practical facts of a subject's situation. In this paper, we investigate this question empirically. Our results indicate that Stanley's assumptions about knowledge ascriptions do not reflect our ordinary practices in some paradigmatic cases. If our data generalize, then arguments for anti-intellectualism that rely on ordinary knowledge ascriptions fail: the case for anti-intellectualism cannot depend on our ordinary practices of knowledge ascription.

Keywords: Epistemology; Experimental Philosophy; Intuitions; Practical Facts

1. Introduction

Imagine that you and your friend Bill are hiking in the woods. You come across a rickety old bridge over a shallow, five-foot ravine. Bill ventures safely across. Do you know that the bridge is safe for you to cross given that it is safe to cross? Imagine that the bridge spans a one hundred-foot drop. Now do you know? *Intellectualism* implies that the answer to both questions must be the same. According to intellectualism, what a person knows is solely a function of the truth-conducive features of the person's situation. *Anti-intellectualist* views claim that what a person knows is more than simply a function of these truth-conducive features of her situation. Anti-intellectualism allows for the possibility that you know the bridge is safe when it spans a five-foot drop but not when it spans a one hundred-foot drop.

Some anti-intellectualists have claimed that anti-intellectualism captures part of our ordinary practices of knowledge ascription. Recently, similar untested empirical

Adam Feltz is an Assistant Professor of Philosophy and Interdisciplinary Studies at Schreiner University.
Chris Zarpentine is a PhD candidate at Florida State University.
Correspondence to: Adam Feltz, Schreiner University, 2100 Memorial Blvd, Kerrville, TX 78028, USA. Email: adfeltz@schreiner.edu

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claims made by philosophers have been tested empirically by "experimental philosophers" across a wide variety of sub-fields including intentional action (e.g., Cokely & Feltz, 2009; Knobe, 2006), free will and moral responsibility (e.g., Feltz & Cokely, 2009; Feltz, Cokely, & Nadelhoffer, 2009; Nahmias, Morris, Nadelhoffer, & Turner, 2006; Nichols & Knobe, 2007; Woolfolk, Doris, & Darley, 2006), philosophy of language (e.g., Machery, Mallon, Nichols, & Stich, 2004), ethics (e.g., Nichols, 2004), and epistemology (e.g., Swain, Alexander, & Weinberg, 2008; Weinberg, Nichols, & Stich, 2001). The results of such experiments are often quite surprising. Of course, this approach is not without its critics.[1] However, the results produced so far indicate that this approach holds much promise. Indeed, less formal forms of the methodology used by experimental philosophers seem to have been a part of philosophy for quite some time. For example, Goldman (1992, p. 175) reports the results of an informal survey of judgments regarding a case of putatively justified clairvoyance. Similarly, in his review of a recent anthology devoted to experimental philosophy, Frank Jackson writes: "part—*part*—of what Kripke, Putnam and Gettier were doing was some experimental philosophy" (2008, p. 2).[2]

In this paper, we apply this methodology to anti-intellectualist claims about ordinary knowledge attribution. Our results indicate that some of the empirical claims made by anti-intellectualists are not empirically supported. We conclude by discussing some philosophical implications of these results and the prospects for anti-intellectualism.

2. What is Anti-Intellectualism?

Despite the philosophical orthodoxy of intellectualism, some philosophers have recently taken up the anti-intellectualist cause. John Hawthorne (2004), for example, develops a position he calls *sensitive moderate invariantism* in an attempt to resolve the lottery paradox. Roughly put, the paradox is this: we may agree with the judgment of Kelly, an assistant professor of philosophy, that she knows she will not have enough money to undertake an African safari this year. However, assistant professors sometimes do play the lottery, and we would not agree that Kelly knows she will not win a large cash prize in the state lottery, provided she has bought a ticket. But knowing that she will not have enough money to go on safari entails that she will not win a major prize in the lottery. So, do we deny that Kelly knows she won't have enough money for a safari, or should we accept instead that she knows she will not win the lottery? Worse yet, this puzzle appears to generalize. For example, Kelly is ordinarily inclined to judge that she knows she will be in her seminar tomorrow. Call this an *ordinary proposition*. At the same time, she is not inclined to judge that she knows that she will not be hit by a bus this afternoon. Call this a *lottery proposition*. But obviously if she is hit by a bus this afternoon, she will not be in seminar tomorrow, so perhaps she does not know that she will be in seminar tomorrow. Thus, considering lottery propositions can quickly lead to general skepticism about ordinary propositions we take ourselves to know.

Before developing his own account, Hawthorne considers contextualist resolutions of the paradox. Painting with broad strokes, the contextualist proposes that the truth-value of knowledge ascriptions depends on features of the agent making the ascription (e.g., what is salient or of interest to the ascriber). Thus, holding fixed the facts about *S*, the subject of the ascription, one ascriber may judge truly that *S* knows *p* (at *t*), and another may judge truly that *S* does not know *p* (at *t*). The use of 'know' by each ascriber expresses a different relation dependent on the variations in what is salient or of interest to the ascriber.

To return to the paradox, when the possibility of winning the lottery is not salient for the ascriber, *A*, he will judge truly that Kelly knows she will not have enough money for an African safari. However, when the possibility of winning the lottery is made salient to the *A*, he can judge truly that Kelly does not know she will not have enough money to go on safari this year. Making the possibility of winning the lottery salient causes a shift in context. In the second context, 'know' expresses a different relation than in the first context.

In contrast to contextualism, Hawthorne's sensitive moderate invariantism proposes that the truth of knowledge claims in part depends on the attention and interests of the *subject* of the knowledge ascription (rather than the ascriber). On this view, 'know' always picks out the same relation. However, whether a subject knows a proposition at a time depends not only on traditional factors (e.g., whether *S* believes *p* at *t*, whether *p* is true, whether *S* has good evidence that *p*), but also on the ''attention, interests, stakes, and so on of the subject'' (Hawthorne, 2004, p. 157). On Hawthorne's view, the truth of knowledge ascriptions depends in part on practical facts about the subject, thus challenging intellectualism.

Similarly, Jeremy Fantl and Matthew McGrath (2007) argue against the intellectualist thesis they call *epistemological purism*: that any two possible subjects alike in their ''epistemic position regarding a true proposition *p*'' are also alike ''with respect to being in a position to know that *p*'' (2007, p. 558). Against this, they argue for what they call ''pragmatic encroachment'' in epistemology on the basis of the following principle:

(KA) *S* knows that *p* only if *S* is rational to act as if *p*.

Fantl and McGrath's account allows for factors besides the epistemic situation of a subject to influence whether or not she knows *p*. The stake one has in whether *p* is true can affect whether it is rational to act as if *p*. Both Hawthorne's and Fantl and McGrath's accounts are varieties of *subject-sensitive invariantism*, and both challenge what we have called intellectualism.

Jason Stanley (2005) develops what he calls *interest-relative invariantism*, a subject-sensitive invariantist account in which ordinary knowledge ascriptions are sensitive to the *practical facts* of a subject's situation. The practical facts of a subject's situation are ''facts about the costs of being right or wrong about one's beliefs'' (Stanley, 2005, p. 6). Just as Hawthorne argues that for ordinary propositions that we take ourselves to know we can generate lottery propositions that we would *not* take ourselves to know that are entailed by ordinary propositions, Stanley argues that for ordinary

knowledge ascriptions, ''we can envisage someone in a higher-stakes situation (often a much higher-stakes situation), whom we would not think of as possessing that knowledge, given similar evidence'' (2005, p. 8). According to Stanley, whether *S* knows *p* depends not just on traditional epistemic factors but also on the costs (to *S*) of *S* being right or wrong about *p*. So when the costs of *S* having a false belief that *p* are low, we are likely to agree that *S* knows *p*. However, on the basis of the same evidence, when the costs of *S* falsely believing *p* are high, we are likely to think that *S* does not know *p*.

Stanley's case against intellectualism makes central appeal to our ordinary practices of knowledge ascription. Contextualists, he writes, ''have discovered many examples that suggest that whether a true belief is knowledge depends not just upon truth-conducive features of a situation, but on what is practically at stake'' (2005, p. 3). The contextualist can argue that while which knowledge relation is expressed by 'know' in any particular context depends upon the practical facts, whether a subject knows does not depend on the practical facts of that subject's situation. And so contextualists can maintain intellectualism because whether a subject knows on each of these knowledge relations is solely a function of truth-conducive features. For this reason, Stanley devotes much effort in his book to arguing against contextualism, eventually concluding that ''the evidence for contextualism rests solely upon the cases discussed'' (2005, p. 85). But, he writes: ''once we see that knowledge ascriptions are not context-sensitive in any distinctively epistemological way, we are led by such examples [i.e., the cases discussed below] to reject the common assumption that knowledge . . . is a purely epistemic notion'' (Stanley, 2005, p. 3). Stanley focuses on five cases and ''the intuitive reactions we have about these cases'' (2005, p. 5).

Thus, Stanley's case for anti-intellectualism depends on ''examples that suggest'' (2005, p. 3) that ordinary knowledge ascriptions are sensitive to the practical facts of the subject's situation. But are our ordinary knowledge ascriptions sensitive to the practical facts of a subject's situation? In this paper, we investigate this question empirically. Here we focus on Stanley because his case against intellectualism clearly depends on facts about ordinary knowledge ascriptions. Thus, we treat Stanley's claims about ''the intuitive reactions we have to these cases'' (2005, p. 5) as predictions about ordinary knowledge ascriptions.[3] Our results do not support Stanley's predictions. If our data generalize, the case for anti-intellectualism cannot depend on the sensitivity of our ordinary practices of knowledge ascription to the practical facts of a subject's situation. Ordinary knowledge ascriptions do not appear to be sensitive to these facts.

3. Experiment 1

Stanley's examples involve a series of cases in which Sarah and Hannah are driving past the bank on a Friday afternoon and notice long lines. They wonder if the bank will be open on Saturday so they can deposit their paychecks. In the *Low Stakes* case, they have no impending bills, so there is no pressure on them to deposit their checks

by Saturday. Hannah says "I know the bank will be open." In the *High Stakes* case, Sarah and Hannah have a bill coming due and little money in their account, so it is important that they deposit their paychecks by Saturday. Hannah states, "I don't know the bank will be open." In both of these cases, the bank is open on Saturday. Stanley says, "in Low Stakes, our reaction is that Hannah is right; her utterance of 'I know the bank will be open' is true. In High Stakes, our reaction is that Hannah is also right. Her utterance of 'I don't know that the bank will be open' is true" (2005, p. 5).

In both High Stakes and Low Stakes, Sarah and Hannah are aware of the practical facts of the situation. However, Stanley thinks this is not necessary for practical facts to have an effect on our ordinary practice of knowledge ascription. *Ignorant High Stakes* is like High Stakes, but Sarah and Hannah are not aware of their impending bill. Again, because the stakes are high, Stanley predicts that people are likely to say that Hannah does not know. According to Stanley, the practical facts of a situation also play a role when we assess whether a person has correctly attributed knowledge to another person. In *Low Attributer-High Subject Stakes*, Jill says that Hannah knows that the bank will be open on Saturday. Nothing is at stake for Jill, but she is unaware that Sarah and Hannah have a bill coming due. Stanley predicts that people are likely to say that Jill is wrong that Hannah knows that the bank will be open. In *High Attributer-Low Subject Stakes*, Hannah and Sarah have a bill coming due, and Hannah asserts that her friend Bill does not know that the bank will be open on Saturday. In this case, Stanley predicts that people are likely to agree that Hannah correctly thinks that Bill does not know (2005, p. 5–6; see appendix I). Stanley's predictions are summarized in Table 1.

Stanley thinks that these "examples involve ordinary knowledge ascriptions" (2005, p. 32). However, Stanley thinks that "our intuitions" in High Attributer-Low Subject Stakes are mistaken (2005, p. 98). Because the stakes are low for Bill, interest-relative invariantism "predicts that Bill does know that the bank will be open on Saturday" (Stanley, 2005, p. 97). This runs counter to Stanley's prediction of our intuition. Stanley goes on to explain away our intuition in this case (2005, pp. 101–105). He writes, "we should . . . be deeply suspicious of a theory that gives undue weight to our intuitions about High Attributer-Low Subject Stakes" (Stanley, 2005, p. 98). Thus, ordinary intuitions about this case would not directly bear on

Table 1 Stanley's Predictions

Scenario	The Predicted Response
Low Stakes	The person described does know.
High Stakes	The person described does not know.
Ignorant High Stakes	The person described does not know.
Low Attributer-High Subject Stakes	The person to whom knowledge is attributed does not know.
High Attributer-Low Subject Stakes	The person to whom knowledge is attributed does not know.

Stanley's anti-intellectualist thesis. For this reason, we did not include this scenario in our study. We proposed to test Stanley's predictions by giving his other four scenarios to ordinary folk and asking for their assessment; and that is what we did.

We gave Stanley's cases to 152 students in introductory-level philosophy classes at Florida State University who volunteered to participate in the experiment. Each participant received one of the following four cases: Low Stakes, High Stakes,[4] Ignorant High Stakes, and Low Attributer-High Subject Stakes (see appendix II). We asked them to rate the degree to which they agree with a statement regarding a knowledge claim made by one of the people described in the scenario (1 = 'Strongly Agree', 4 = 'Neutral', 7 = 'Strongly Disagree').[5] Figure 1 illustrates the mean responses.

There is no statistically significant difference between Low Stakes and High Stakes, although there is a numerical shift in the predicted direction,[6] and there is no statistically significant difference between Low Stakes and Ignorant High Stakes.[7] However, we did find a statistically significant difference between Low Attributer-High Subject Stakes and Low Stakes,[8] and we found a statistically significant difference between Ignorant High Stakes and Low Attributer-High Subject Stakes.[9]

Our results do not demonstrate the pattern of ordinary knowledge ascriptions predicted by Stanley. He predicted that most people will agree that Hannah knows in Low Stakes and that in the other three cases most people will disagree that the person in the scenario knows. But in High Stakes, 43.5% disagreed to some extent with the statement that Hannah knows, and in Ignorant High Stakes, 39% disagreed to some extent. Therefore, while most people have the predicted intuitions about Low Stakes and Low Attributer-High Subject stakes, we do not find evidence for the overall pattern of intuitions predicted by anti-intellectualism.

In light of these results, defenders of anti-intellectualism might maintain that observing the pattern of intuitions Stanley predicts is not critical. Rather, to establish

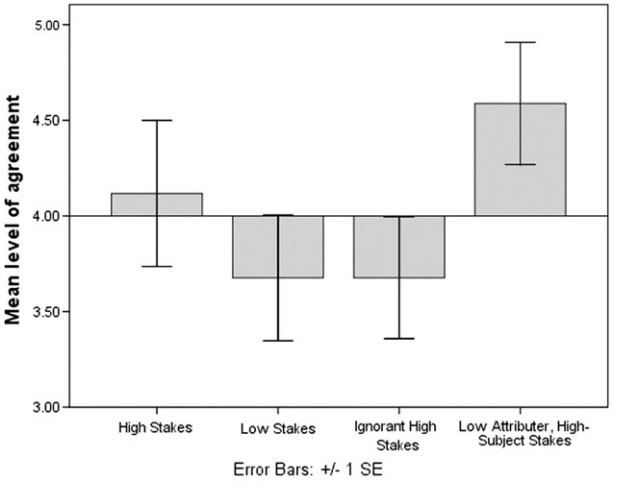

Figure 1 Results of Experiment 1.

anti-intellectualism all that is required is to show that practical facts have *some* effect on ordinary ascriptions of knowledge. If so, then whether a person knows is not solely a matter of truth-conducive factors and practical facts may play some role. We did find a statistically significant difference between Low Stakes and Low Attributer-High Subject stakes. Also, there is a numerical shift in the predicted direction between Low Stakes and High Stakes. These results offer support for the thesis that practical facts *do* have *some* effect on ordinary ascriptions of knowledge. To address this potential line of reply, we ran a follow-up study.

4. Experiment 2

We believe that an alternative pair of hypotheses explains the results of Experiment 1 much better than the hypothesis that ordinary knowledge ascriptions are sensitive to practical facts. First, we hypothesized that the difference in people's intuitions about High Stakes and Low Stakes is an artifact of how Stanley describes the cases. In particular, the statement "Sarah points out that banks do change their hours," appears in High Stakes but not in Low Stakes. This statement makes salient a possible justification defeater that might account for why more people ascribe knowledge in Low Stakes than in High Stakes. Second, we hypothesized that the difference in people's responses between Low Stakes and Low Attributer-High Subject Stakes is the result of an *attributer effect*: people are more reluctant to agree with third-person knowledge attributions than first-person attributions.

The attributer effect hypothesis is supported by our results in at least three ways. First, the only significant differences we found were between third-person and first-person cases: (a) between Low Attributer-High Subject Stakes and Low Stakes and (b) between Low Attributer-High Subject Stakes and Ignorant High Stakes. Second, the practical facts of Low Attributer-High Subject Stakes and Ignorant High Stakes are the same. If only the practical facts and traditional epistemic features influenced the results in these cases, then on Stanley's view there should be no difference between these two cases. But there is a significant difference. Finally, there is a significant difference between Low Stakes and Low Attributer-High Subject Stakes but not between Low Stakes and High Stakes.

We ran a follow-up study to test our two hypotheses. First, we developed a pair of cases without the potential confounding factors that appeared in Stanley's original cases. The only differences between our cases are the stakes. If ordinary knowledge ascriptions are sensitive to the practical facts of a situation, then we should observe a difference between these cases. Second, we tested our attributer effect hypothesis by developing a case that involves attribution of knowledge to a third person.

In the follow-up study, we used the following three scenarios:

> *Minimal Low Stakes*: Bill, Jim, and Sarah are hiking and they come to a ravine. There is a bridge five feet over the ravine. Bill sees Sarah and Jim cross the bridge, and Bill says to Jim, "I know that the bridge is stable enough to hold my weight."

> *Minimal High Stakes*: Bill, Jim, and Sarah are hiking and they come to a ravine. There is a bridge one hundred feet over the ravine. Bill sees Sarah and Jim cross the bridge, and Bill says to Jim, ''I know that the bridge is stable enough to hold my weight.''
>
> *Attributer*: Bill, Jim, and Sarah are hiking and they come to a ravine. There is a bridge five feet over the ravine. Bill sees Jim and Sarah cross the bridge, and Jim says to Sarah, ''Bill knows that the bridge is stable enough to hold his weight.''

The only difference between *Minimal High Stakes* and *Minimal Low Stakes* is the height of the bridge. If the results of our test of Stanley's original cases were due to confounding factors, then we should find no difference in people's attributions in the minimal cases. Likewise, if the statistically significant results we found in our test of Stanley's original cases were due to the attributer effect, then we should find a significant difference between cases describing first-person and third-person knowledge attributions.

In our follow-up study, 119 students in introductory-level philosophy courses at Florida State University volunteered to participate in the experiment. Each participant was given one of either Minimal High Stakes, Minimal Low Stakes, or Attributer (see appendix III). They were asked to rate the degree to which they agree with a statement regarding a knowledge claim made by one of the people described in the scenario (1 = 'Strongly agree', 4 = 'Neutral', 7 = 'Strongly disagree'). Figure 2 displays the mean results.

These results clarify our first experiment. In the simplified cases, the only relevant difference between Minimal High Stakes and Minimal Low Stakes is the practical facts. Anti-intellectualism predicts that people should be less likely to attribute knowledge to Bill in Minimal High Stakes than in Minimal Low Stakes. But we do not find this. In fact, there is no statistically significant difference between Minimal

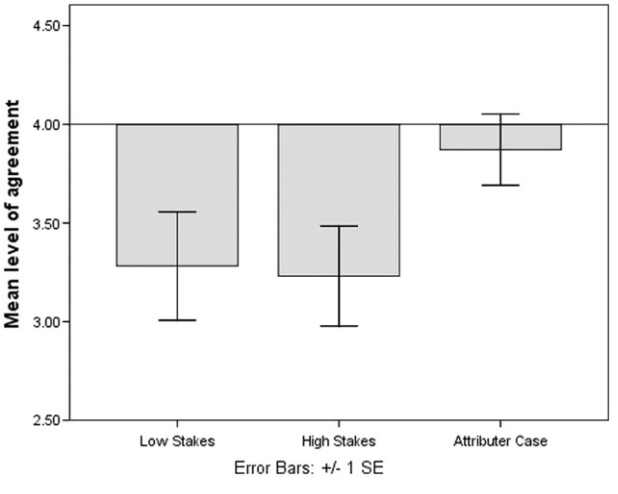

Figure 2 Results of Experiment 2.

High Stakes and Minimal Low Stakes.[10] The results of our second study suggest that practical facts *do not* play a role in ordinary knowledge attributions. These results also support our attributer effect hypothesis. Considerably fewer people agree that the person knows in the Attributer case (33%) compared to the percentage of people who think that the person knows in Minimal Low Stakes (54%) or Minimal High Stakes (56%).[11] Thus, we have good reason to think that what explains the results of the Low Attributer-High Subject Stakes in our first study is the *attributer effect* and *not* the practical facts.[12]

5. Experiment 3

One worry with our follow-up study might be that there is no room for the practical facts to play a role. Bridges are normally constructed with iron, steel, concrete, or heavy timber—all of which are sufficient to hold a normal person's weight. If our participants assumed that the bridges are stable, then the difference in practical facts between our minimal cases would not affect ordinary knowledge ascriptions regardless of how high the bridge is. If this is the case, then anti-intellectualists would not *expect* these cases to provide evidence for their thesis.[13]

To address this worry, we ran a third experiment. We minimized possible confounding factors in Stanley's original cases by creating the following two scenarios:

> *Simplified High Stakes*: Hannah and her sister Sarah are driving home on a Friday afternoon. They plan to stop at the bank on the way home to deposit their paychecks. Since they have an impending bill coming due, it is very important that they deposit their paychecks by Saturday. Hannah notes that she was at the bank two weeks before on a Saturday morning, and it was open. Hannah says to Sarah, 'I know that the bank will be open tomorrow'.
>
> *Simplified Low Stakes*: Hannah and her sister Sarah are driving home on a Friday afternoon. They plan to stop at the bank on the way home to deposit their paychecks. Since they do not have an impending bill coming due, it is not very important that they deposit their paychecks by Saturday. Hannah notes that she was at the bank two weeks before on a Saturday morning, and it was open. Hannah says to Sarah, 'I know that the bank will be open tomorrow'.

In *Simplified Low Stakes* and *Simplified High Stakes*, the only difference is the practical facts of the situation. In Simplified High Stakes, it is very important for Hannah to deposit her check because she has a bill coming due. In Simplified Low Stakes, with no bill coming due, it is not very important for Hannah to deposit her check. In Stanley's original cases, ''our intuition in High Stakes [is] that Hannah does not know that the bank will be open'' (2005, p. 129) and, ''In Low Stakes, our reaction is that Hannah is right; her utterance of 'I know the bank will be open' is true'' (Stanley, 2005, p. 5). These simplified cases are versions of Stanley's original cases without the possible confounding factors, so if Stanley is right, most people should think that Hannah knows in Simplified Low Stakes but does not know in Simplified High Stakes.

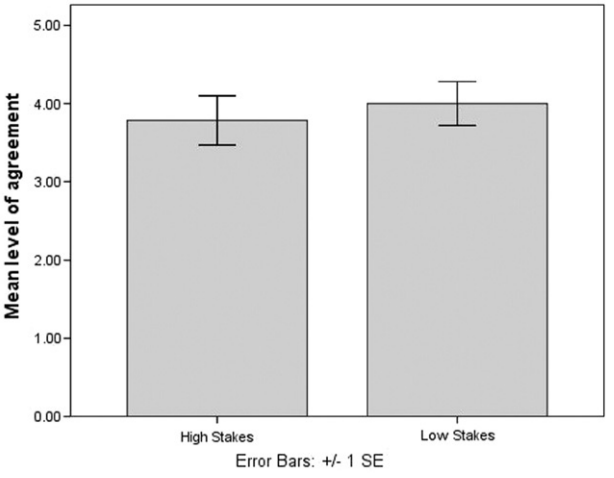

Figure 3 Results of Experiment 3.

Eighty-three undergraduates in introductory-level philosophy classes at Florida State University volunteered to participate in the experiment. Each participant was given one of either Simplified High Stakes or Simplified Low Stakes (see appendix IV). They were asked to rate the degree to which they agree with a statement regarding a knowledge claim made by one of the people described in the scenario (1 = 'Strongly agree', 4 = 'Neutral', 7 = 'Strongly disagree'). Figure 3 displays the mean results.

If anti-intellectualism is right, we should expect people to judge that Hannah knows in Simplified Low Stakes but does not know in Simplified High Stakes. This pattern of responses is not found. Again, there is no statistically significant difference in responses.[14] These results confirm the results of our second experiment suggesting that practical facts do not play a role in people's ordinary practice of knowledge ascriptions.

6. Experiment 4

Perhaps our revision of Stanley's original scenarios still does not make the practical facts salient. It is easy to miss the cost to Hannah of having a false belief in Simplified High Stakes. If the practical facts are not salient to the participants, then we would not expect to find significant differences in participants' responses. To make the practical facts more salient, we ran another experiment using cases suggested by Jason Stanley (personal communication):[15]

> *High Stakes Bridge*: 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 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.

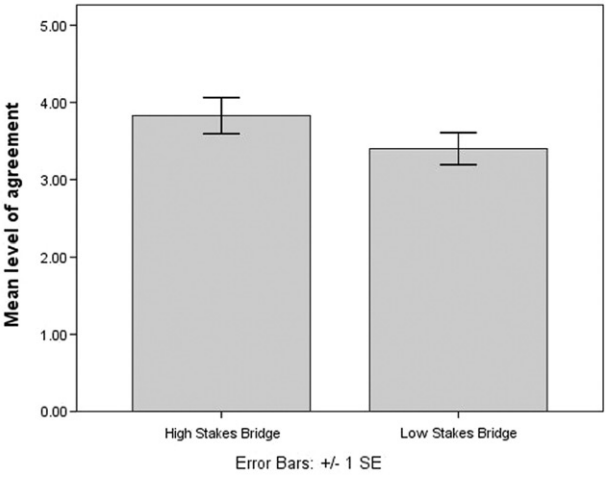

Figure 4 Results of Experiment 4.

> 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.'
>
> *Low Stakes Bridge*: 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 ditch. 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.'

The only difference between *High Stakes Bridge* and *Low Stakes Bridge* is that in the former the bridge spans a 'yawning thousand foot drop' while in the latter the bridge is over a 'three foot ditch'. Obviously, John falsely believing his truck will make it across the bridge in High Stakes Bridge is very costly—certain death—whereas the costs in Low Stakes Bridge are likely some minor injuries and embarrassment. If practical facts are to play a role in ordinary knowledge ascriptions, we should expect them to play a role here where the costs of having a false belief are so high.

One hundred and forty students in lower level geography, criminal justice, and political science classes at Florida State University volunteered to participate in the experiment. Each participant was given one of either High Stakes Bridge or Low Stakes Bridge (see appendix V). They were asked to rate the degree to which they agree with a statement regarding a knowledge claim made by one of the people described in the scenario (1 = 'Strongly agree', 4 = 'Neutral', 7 = 'Strongly disagree'). Figure 4 illustrates the mean results.

We did not find the pattern of responses predicted by the anti-intellectualist. Given the high cost of John having a false belief in High Stakes Bridge, anti-intellectualism predicts that significantly more people will say that John does *not* know in High Stakes Bridge than in Low Stakes Bridge where the costs of being wrong are only

minor injuries and embarrassment. In Low Stakes Bridge, 27% of participants said that John does not know. However, in High Stakes Bridge, where the cost of being wrong is a certain and horrifying death, 36% of participants disagreed—a statistically insignificant difference of 9%.[16] Thus, we found no evidence that the practical facts in High Stakes Bridge have an effect on ordinary ascriptions of knowledge. These results, with the results of our previous studies, reinforce the conclusion that anti-intellectualism does not accurately describe our ordinary epistemic practices.[17]

Finally, we performed an analysis using all of data involving high and low stakes to increase statistical power.[18] Increasing the sample size improves the chances of finding a conventionally significant effect. In the present set of experiments, performing this analysis was important because some of the analyses indicated that with a large enough sample a conventionally significant difference of stakes would be found.[19] Collapsing all data sets (except the Attributer case) resulted in 454 participants in a high stakes condition and 185 in a low stakes condition. Combining all high and low stakes cases, we found a significant difference.[20] Even though the difference in responses is statistically significant, it does not appear to provide support for anti-intellectualism. First, the mean responses for high stakes ($M = 3.91$) and low stakes ($M = 3.52$) cases moved in the right direction, but they were both on the agreement side of neutral. In other words, there is not a qualitative difference in knowledge attributions as a function of stakes. Second, the effect size approaches triviality at 0.01. The small effect size indicates that the variance in knowledge attributions explained by the stakes, however real, is very small. Therefore, the results of this analysis suggest that the practical facts in these situations do not qualitatively change knowledge attributions and they are not likely to be a fundamental or important feature of our ordinary knowledge attributions.

7. Discussion

Our results suggest that the ordinary practice of knowledge ascription is not sensitive to the practical facts of a person's situation in any important way. In the course of four experiments using a variety of situations with practical facts of varying levels of severity, we have found little evidence that the practical facts play an important role in knowledge ascriptions. Indeed, to the extent that the practical facts appear to play an important role in ordinary knowledge ascriptions, our alternative pair of hypotheses better explain the data. First, it appears that some of the results are artifacts of Stanley's cases. Second, our data suggest that an attributer effect may play a role in some people's ascriptions of knowledge.[21]

The attributer effect is consistent with some psychological research that indicates that there are many asymmetries between mental state attributions to the self and to others. Jones and Nisbett (1972) found that people often view the behavior of others as caused by their internal and stable dispositions, while at the same time seeing their own behavior as constrained by situational features. Similar asymmetries exist across a wide range of judgments. Compared to others, people tend to think: (a) more

optimistically about their own futures (Weinstein, 1980), (b) that their own actions are more generous or selfless (Epley & Dunning, 2000), (c) that they know others better than others know them (Park, Choi, & Cho, 2006; Pronin, Kruger, Savitsky, & Ross, 2001), and (d) that they are less susceptible to the pressures of social conformity (Pronin, Berger, & Molouki, 2007). Importantly, a wide body of research indicates that people view themselves as less susceptible than others to a host of cognitive and motivational biases, a phenomenon known as the *bias blind spot* (Pronin, 2006, 2008; Pronin, Gilovich, & Ross, 2004; Pronin & Kugler, 2006). The existence of other first-person/third-person asymmetries lends greater plausibility to the hypothesized attributer effect.

Our understanding of the processes by which people attribute knowledge, belief, and other mental states to other individuals and themselves is still at an early stage. Thus, it would be premature to draw any definitive conclusions. It could be that self-other asymmetries in knowledge attributions rely on different proximal cognitive processes. Alternatively, it could be that the asymmetry in knowledge attribution to the self and to others depends on the same proximal cognitive processes (Bem, 1972; Nisbett & Wilson, 1977; Saxe, 2008). Further research using higher fidelity methods (e.g., process tracing or protocol analysis, Cokely & Kelley, 2009; Ericsson & Simon, 1980, 1993) is needed to see how knowledge attribution fits into our increasing understanding of human cognition.[22]

A worry might arise based in the controversial nature of the experimental philosophy methodology utilized here. Stanley's view seems to depend on our having certain intuitions (see section 8), but systematic investigation may not provide empirical evidence for these intuitions. One might suggest, as Ludwig (2007) does, that some experimental philosophy studies do not get at *genuine* intuitions. In his view, genuine intuitions must derive from an individual's *competence* with the concepts involved. This would problematize reliance on the assumed intuitions. However, Ludwig has certainly not provided a complete account of competence that could be used to evaluate the validity of subjects' responses. Additionally, Stanley neither offers, nor appeals to, any such account—he merely appeals to "our intuitions." The only assumption we make is the plausible one that our subjects are competent language users—at least with respect to the terms used in the scenarios and questions.[23]

Moreover, our studies represent a rather modest use of experimental philosophy. Even some critics of experimental philosophy could accept the usefulness of experimental philosophy in this role. For example, Ludwig writes "experimental philosophy . . . provides a check on one's assumptions about the conformity of one's own responses to those of others and especially those who have not been trained in philosophy" (2007, p. 154). Similarly, Sosa says "it is of course helpful to be shown how intuition can go astray in unfavorable conditions" (2007, p. 105). As suggested in the introduction, in this respect, experimental philosophy seems no more problematic than traditional philosophical methods.

8. Prospects for Anti-Intellectualism?

In the light of our evidence, what are the prospects for anti-intellectualism? Stanley is very clear that:

> The role of these intuitions is not akin to the role of observational data for a scientific theory. The intuitions are instead intended to reveal the powerful intuitive sway of the thesis that knowledge is the basis for action. Someone who denies that we have many of these intuitions is denying the pull of the link between knowledge and action. (2005, p. 12)

So, the intuitions which he predicts are not data for his theory. (Recall that, as discussed in section 3 above, Stanley himself rejects some of these intuitions.) Rather, they are ''intended to reveal the powerful intuitive sway of the thesis that knowledge is the basis for action'' (Stanley, 2005, p. 12). Nevertheless, the arguments Stanley presents in *Knowledge and practical interests* rely heavily on these intuitions. Stanley begins the (2007a) précis of his (2005) book by claiming: ''our intuitions about whether someone knows that p vary even fixing the intuitively epistemic features of that person's situation'' (2007a, p. 168), and throughout the book he appeals to ''the kind of intuitions'' concerning the cases he has presented (2005, pp. 22–25), ''ordinary intuitions about knowledge ascriptions'' (2005, p. 32), an ''account of the cases described'' (2005, p. 74), the ''explanation of these intuitions'' (2005, p. 84), ''the various intuitions discussed'' (2005, pp. 96–104), and ''the intuitive connections between knowledge and action, revealed in certain intuitions we have'' (2005, p. 179). In fact, the overall argumentative structure of his book is driven by the intuitions he thinks that most people have about the cases he presents (see appendix I). For this reason, we chose to investigate whether ordinary knowledge ascriptions reflect the pattern predicted by Stanley about his examples.

In response to Neta's (2007) criticisms of *Knowledge and practical interests*, Stanley continues to place heavy emphasis on our intuitions. He claims that interest-relative invariantism ''follows from some intuitions about cases, together with the . . . claim that if one knows that p, it is rationally permissible to act on one's belief that p'' (Stanley, 2007b, p. 202). Regardless of whether ''these intuitions'' should be regarded as ''observational data,'' they clearly play a major role in Stanley's argument.

In our studies, we did not find the pattern of intuitions that would support Stanley's case for anti-intellectualism. To the extent that the results fit this pattern in our first study, our follow-up studies suggest superior alternative explanations. To briefly review, we found no statistically significant difference between Minimal High Stakes and Minimal Low Stakes, between Simplified High Stakes and Simplified Low Stakes, or between High Stakes Bridge and Low Stakes Bridge. This indicates that the results of our first study that appeared to support anti-intellectualism are artifacts generated by confounding factors. The results of our experiment involving the Attributer case provide evidence that the attributer effect explains the observed difference between Low Stakes and Low Attributer-High Subject Stakes. Lastly, our final analysis indicated a very small effect of practical facts on ordinary knowledge ascriptions.

The results of our final analysis might be seen as a victory for the anti-intellectualist. However, we should not be so hasty. In response to the criticism that our intuitions about the bank cases are ''fragile'' (Schiffer, 2007, p. 190), Stanley writes:

> The stakes examples are manifestations of the same tendency that leads us to criticize someone who acts on her belief that p, for acting without knowing that p. It is because I take this tendency to be a central rather than a peripheral feature of our concept of knowledge that I reject the possibility that our intuitions about the stakes examples are framing effects. (2007b, pp. 206–207)

Thus, it is fair to say that the anti-intellectualist means to argue that the practical facts have an *important* and *interesting* effect on ordinary knowledge ascriptions, not merely that they have some small effect. We found no evidence of a non-trivial effect.

In light of this evidence, the anti-intellectualist might attempt to find other evidence from ordinary knowledge ascriptions that substantiate anti-intellectualism. This is certainly possible. Knowledge ascriptions may be sensitive to non-truth-conducive facts about the subject in some way other than the way Stanley claims. In these instances, anti-intellectualism would still be true, just not for the reasons Stanley thinks. But given our results, the anti-intellectualist who takes this route must shoulder the burden of explaining the results of our studies that do not support the sensitivity of ordinary knowledge ascriptions to the practical facts of a subject's situation.

In the face of these results, the anti-intellectualist might try to motivate the connection between knowledge and action in some other way. If the role of intuitions is to support the thesis that ''knowledge is the basis for action,'' other arguments may be given to that effect.[24] However, if the results of our studies generalize, the case for anti-intellectualism cannot rely on our ordinary practices of knowledge ascription or our intuitions in the way Stanley suggests. Thus, putting forward other arguments for Stanley's interest-relative invariantism would appear to involve a revision of our ordinary practices of knowledge ascriptions.

There may, of course, be very good reason to revise our ordinary practices of knowledge ascription. On the other hand, as Stanley suggests, one might well argue that some other notion such as ''appropriately confident belief'' is of greater philosophical interest than ''knowledge'' (2005, p. 13). However, if the methodology utilized and defended here is sound and the results of the studies reported here generalize, the conclusion is clear: Stanley's and others' arguments against intellectualism that depend on ordinary knowledge ascription should be rejected.

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Notes

[1] For example, see Kauppinen (2007), Ludwig (2007), and Sosa (2007, 2009). Though it is beyond the scope of the present paper to respond to such criticisms, none appear to undermine the viability of this methodology. For replies to some of these criticisms, see Knobe and Nichols (2008) as well as Nadelhoffer and Nahmias (2007). We discuss one related worry in section 7.

[2] Jackson continues: ''. . . it is hard to see how one could reasonably take very seriously what we might call the standard responses to the cases Kripke, Putnam and Gettier describe . . . while thinking that it is a mistake for philosophers to make surveys of responses to possible cases'' (2008, p. 2). Jackson's view accords well with Jaakko Hintikka's (1999, p. 127) claim that intuitions begin to play a larger role in analytic philosophy starting in the mid-1960s as a result of the popularity of Chomsky's linguistics.

[3] Stanley might deny that he is making *predictions* about ordinary knowledge ascriptions. He writes, ''the role of these intuitions is not akin to the role of observational data for a scientific theory'' (Stanley, 2005, p. 12). We discuss this worry in section 7.

[4] We reversed scored this scenario because the prompt asks the participants to indicate if it is true that Hannah *does not* know. We did not change this case because we wanted to reproduce Stanley's scenarios exactly as he presents them. In the absence of evidence to the contrary, we assume that this does not affect the content of the responses. We assume that most of our subjects are sufficiently competent that, if they agree that not P, they will also disagree that P.

[5] We followed Swain et al.'s (2008) use of a Likert scale in measuring knowledge ascriptions. According to Swain et al., a Likert scale is ''a standard measure of attitude toward a proposition'' (2008, p. 142).

[6] All analyses, unless otherwise noted, used independent samples t-tests. High Stakes ($M = 4.26$, $SD = 2.14$) and Low Stakes ($M = 3.68$, $SD = 1.91$), $t(71) = 1.213$, $p = 0.23$.

[7] Ignorant High Stakes ($M = 3.59$, $SD = 1.90$), $t(71) = 0.19$, $p = 0.85$.

[8] Low Attributer-High Subject Stakes ($M = 4.75$, $SD = 1.89$), $t(72) = 2.42$, $p = 0.02$.

[9] $t(77) = 2.72$, $p = 0.01$.

[10] Minimal High Stakes ($M = 3.23$, $SD = 1.58$) and Minimal Low Stakes ($M = 3.29$, $SD = 1.76$), $t(78) = 0.17$, $p = 0.87$.

[11] There was a statistically significant difference between Minimal High Stakes and Attributer ($M = 3.87$, $SD = 1.13$), $t(76) = 2.06$, $p = 0.04$. There was a near significant difference between Minimal Low Stakes and Attributer, $t(78) = 1.74$, $p = 0.09$. And, when we combine the results of Minimal High Stakes and Minimal Low Stakes, we found a statistically significant result between the Attributer and the minimal non-attributer cases, $t(117) = 2.06$, $p = 0.04$.

[12] One might think that in the attributer cases one may be in a privileged epistemic position as one may know roughly what types of bridges hold one's weight whereas one may not be in a privileged position to know what time banks open (we thank a reviewer for suggesting this alternative interpretation). While this is certainly possible, we feel that given that in Low Attributer High-Subject stakes we find lower agreement with the knowledge attribution *and* we find evidence that in at least some cases people are hesitant to agree that third-party knowledge attributions are true, we have at least shifted the burden to those who think that the results of Low Attributer High Subject stakes are due to the practical facts of the situation and not merely due to the attributer effect. Indeed, we suspect that the attributer effect is a general phenomenon—people will rate third-person knowledge attributions as less true than first-person knowledge attributions. This may be because in third party knowledge attributions one cannot be certain that the person to whom knowledge is attributed believes *anything*. If believing that p is a necessary condition for knowing that p, and we are certain that S at least believes that p in first-person cases and not in third-person cases, then we should expect that third party knowledge attributions will be judged as less true than

first-person knowledge attributions (we thank Al Mele for bringing this possibility to our attention). Future research will likely shed light on the nature of the attributer effect.

[13] We would like to thank Jason Stanley (personal communication) for bringing this worry to our attention.

[14] Simplified High Stakes ($M = 3.83$, $SD = 1.92$) and Simplified Low Stakes ($M = 3.85$, $SD = 1.73$), $t(80) = 0.04$, $p = 0.97$. It should also be noted that there is neither a significant difference between Simplified High Stakes and Minimal High Stakes, $t(79) = 1.53$, $p = 0.13$, nor between Simplified Low Stakes and Minimal Low Stakes $t(80) = 1.33$, $p = 0.19$.

[15] Thanks again to Jason Stanley for pressing this worry about our third study and for suggesting the High Stakes Bridge and Low Stakes Bridge cases. Switching to the bridge cases does raise new worries about potentially confounding factors (e.g., see note 12). However, it is not clear that the existence of such confounds would help the anti-intellectualist. Thanks to a reviewer for raising this worry.

[16] High Stakes Bridge ($M = 3.83$, $SD = 1.96$) and Low Stakes Bridge ($M = 3.4$, $SD = 1.74$), $t(138) = 1.37$, $p = 0.17$. Of note, High Stakes Bridge does not significantly differ from either Minimal High Stakes, $t(107) = 1.63$, $p = 0.11$ or Simplified High Stakes, $t(110) = 0.01$, $p = 0.99$. Likewise, Low Stakes Bridge does not significantly differ from Minimal Low Stakes, $t(109) = 0.31$, $p = 0.76$ or Simplified Low Stakes, $t(108) = 1.30$, $p = 0.19$.

[17] It is possible that the practical stakes are still not made salient to participants. It could be that in order to obtain the effect of practical facts, something would need to be at stake *for the participants*. In our studies, nothing is at stake for the participants, and hence we may not find the effect given our experimental design. We agree this may be true, and we invite further research. However, it is worth noting that Stanley thinks that *we* have the responses he predicts *to the cases as he presents them*. If his arguments depend on those intuitions, then his view appears to be unsupported.

[18] We thank Joshua Knobe for suggesting this additional analysis.

[19] Theoretically, if the t value is greater than 1, that indicates that with a large enough sample a conventionally significant difference would be found. We find t values greater than 1 in several of the experiments above.

[20] A univariant ANOVA was used in this analysis. High stakes $M = 3.91$, $SD = 1.94$, Low stakes $M = 3.52$, $SD = 1.78$, $F\ (1,452) = 4.2$, $p = 0.04$, $\eta_p^2 = 0.01$. Of course, this statistical difference must be taken with a grain of salt given that it appears that confounding factors and the attributer effect may contribute to people's knowledge ascriptions. Moreover, because this is a post-hoc test, a Bonferroni correction would result in significance level of 0.025.

[21] There is converging evidence that the practical facts do not play a role in knowledge ascriptions. In a different series of studies with a slightly different target and different stimulus materials, May, Sinnott-Armstrong, Hull, and Zimmerman (2009), did not find that practical facts influenced knowledge attributions.

[22] See also Nagel (2007) for a brief review of other potentially relevant work on 'feeling of knowing' and 'feeling of another's knowing' states.

[23] Thanks to an anonymous referee for pressing us on some of the worries in this and the following paragraph. For a discussion of the problems involved in invoking the notion of competence in debates about experimental philosophy, see Machery (2008).

[24] For related arguments which rely less explicitly on intuitions, see Hawthorne and Stanley (2008).

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Appendix I

Low Stakes: Hannah and her wife Sarah are driving home on a Friday afternoon. They plan to stop at the bank on the way home to deposit their paychecks. It is not important that they do so, as they have no impending bills. But as they drive past the

bank, they notice that the lines inside are very long, as they often are on Friday afternoons. Realizing that it isn't very important that their paychecks are deposited right away, Hannah says, 'I know the bank will be open tomorrow, since I was there just two weeks ago on Saturday morning. So we can deposit our paychecks tomorrow morning'.

High Stakes: Hannah and her wife Sarah are driving home on a Friday afternoon. They plan to stop at the bank on the way home to deposit their paychecks. Since they have an impending bill coming due, and very little in their account, it is very important that they deposit their paychecks by Saturday. Hannah notes that she was at the bank two weeks before on a Saturday morning, and it was open. But, as Sarah points out, banks do change their hours. Hannah says, 'I guess you're right. I don't know that the bank will be open tomorrow'.

Ignorant High Stakes: Hannah and her wife Sarah are driving home on a Friday afternoon. They plan to stop at the bank on the way home to deposit their paychecks. Since they have an impending bill coming due, and very little in their account, it is very important that they deposit their paychecks by Saturday. But neither Hannah nor Sarah is aware of the impending bill, nor of the paucity of available funds. Looking at the lines, Hannah says to Sarah, 'I know the bank will be open tomorrow, since I was there just two weeks ago on Saturday morning. So we can deposit our paychecks tomorrow morning'.

Low Attributer-High Subject Stakes: Hannah and her wife Sarah are driving home on a Friday afternoon. They plan to stop at the bank on the way home to deposit their paychecks. Since they have an impending bill coming due, and very little in their account, it is very important that they deposit their paychecks by Saturday. Two weeks earlier, on a Saturday, Hannah went to the bank, where Jill saw her. Sarah points out to Hannah that banks do change their hours. Hannah utters, 'That's a good point. I guess I don't really know that the bank will be open on Saturday'. Coincidentally, Jill is thinking of going to the bank on Saturday, just for fun, to see if she meets Hannah there. Nothing is at stake for Jill, and she knows nothing of Hannah's situation. Wondering whether Hannah will be there, Jill utters to a friend, 'Well, Hannah was at the bank two weeks ago on a Saturday. So she knows the bank will be open on Saturday'.

High Attributer-Low Subject Stakes: Hannah and her wife Sarah are driving home on a Friday afternoon. They plan to stop at the bank on the way home to deposit their paychecks. Since they have an impending bill coming due, and very little in their account, it is very important that they deposit their paychecks by Saturday. Hannah calls up Bill on her cell phone, and asks Bill whether the bank will be open on Saturday. Bill replies by telling Hannah, 'Well, I was there two weeks ago on a Saturday, and it was open'. After reporting the discussion to Sarah, Hannah concludes that, since banks do occasionally change their hours, 'Bill doesn't really know that the bank will be open on Saturday'.

From Stanley (2005, p. 3–5).

Appendix II

Low Stakes: Hannah and her wife Sarah are driving home on a Friday afternoon. They plan to stop at the bank on the way home to deposit their paychecks. It is not important that they do so, as they have no impending bills. But as they drive past the bank, they notice that the lines inside are very long, as they often are on Friday afternoons. Realizing that it isn't very important that their paychecks are deposited right away, Hannah says, 'I know the bank will be open tomorrow, since I was there just two weeks ago on Saturday morning. So we can deposit our paychecks tomorrow morning'.

Assume that the bank really will be open tomorrow. Please indicate how strongly you agree with the following statement:

When Hannah says, ''I know the bank will be open tomorrow,'' what she says is true.

1	2	3	4	5	6	7
Strongly Agree			Neutral			Strongly Disagree

High Stakes: Hannah and her wife Sarah are driving home on a Friday afternoon. They plan to stop at the bank on the way home to deposit their paychecks. Since they have an impending bill coming due, and very little in their account, it is very important that they deposit their paychecks by Saturday. Hannah notes that she was at the bank two weeks before on a Saturday morning, and it was open. But, as Sarah points out, banks do change their hours. Hannah says, 'I guess you're right. I don't know that the bank will be open tomorrow'.

Assume that the bank really will be open tomorrow. Please indicate how strongly you agree with the following statement:

When Hannah says, ''I don't know that the bank will be open on tomorrow,'' what she says is true.

1	2	3	4	5	6	7
Strongly Agree			Neutral			Strongly Disagree

Ignorant High Stakes: Hannah and her wife Sarah are driving home on a Friday afternoon. They plan to stop at the bank on the way home to deposit their paychecks. Since they have an impending bill coming due, and very little in their account, it is very important that they deposit their paychecks by Saturday. But neither Hannah nor Sarah is aware of the impending bill, nor of the paucity of available funds. Looking at the lines, Hannah says to Sarah, 'I know the bank will be open tomorrow, since I was there just two weeks ago on Saturday morning. So we can deposit our paychecks tomorrow morning'.

Assume that the bank really will be open tomorrow. Please indicate how strongly you agree with the following statement:

When Hannah says, ''I know the bank will be open tomorrow,'' what she says is true.

1	2	3	4	5	6	7
Strongly Agree			Neutral			Strongly Disagree

Low Attributer-High Subject Stakes: Hannah and her wife Sarah are driving home on a Friday afternoon. They plan to stop at the bank on the way home to deposit their paychecks. Since they have an impending bill coming due, and very little in their account, it is very important that they deposit their paychecks by Saturday. Two weeks earlier, on a Saturday, Hannah went to the bank, where Jill saw her. Sarah points out to Hannah that banks do change their hours. Hannah utters, 'That's a good point. I guess I don't really know that the bank will be open on Saturday'. Coincidentally, Jill is thinking of going to the bank on Saturday, just for fun, to see if she meets Hannah there. Nothing is at stake for Jill, and she knows nothing of Hannah's situation. Wondering whether Hannah will be there, Jill utters to a friend, 'Well, Hannah was at the bank two weeks ago on a Saturday. So she knows the bank will be open on Saturday'.

Assume that the bank really will be open tomorrow. Please indicate how strongly you agree with the following statement:

When Jill says, ''she knows the bank will be open on Saturday,'' what she says is true.

1	2	3	4	5	6	7
Strongly Agree			Neutral			Strongly Disagree

Appendix III

Minimal Low Stakes: Bill, Jim, and Sarah are hiking and they come to a ravine. There is a bridge five feet over the ravine. Bill sees Sarah and Jim cross the bridge, and Bill says to Jim, ''I know that the bridge is stable enough to hold my weight.''

Assume that the bridge is stable enough hold Bill's weight. Please indicate how strongly you agree with the following statement:

When Bill says, ''I know that the bridge is stable enough to hold my weight,'' what he says is true.

1	2	3	4	5	6	7
Strongly Agree			Neutral			Strongly Disagree

Minimal High Stakes: Bill, Jim, and Sarah are hiking and they come to a ravine. There is a bridge one hundred feet over the ravine. Bill sees Sarah and Jim cross the bridge, and Bill says to Jim, ''I know that the bridge is stable enough to hold my weight.''

Assume that the bridge is stable enough hold Bill's weight. Please indicate how strongly you agree with the following statement:

When Bill says, ''I know that the bridge is stable enough to hold my weight,'' what he says is true.

1	2	3	4	5	6	7
Strongly Agree			Neutral			Strongly Disagree

Attributer: Bill, Jim, and Sarah are hiking and they come to a ravine. There is a bridge five feet over the ravine. Bill sees Jim and Sarah cross the bridge, and Jim says to Sarah, ''Bill knows that the bridge is stable enough to hold his weight.''

Assume that the bridge is stable enough hold Bill's weight. Please indicate how strongly you agree with the following statement:

When Jim says, ''Bill knows that the bridge is stable enough to hold his weight,'' what he says is true.

1	2	3	4	5	6	7
Strongly Agree			Neutral			Strongly Disagree

Appendix IV

Simplified High Stakes: Hannah and her sister Sarah are driving home on a Friday afternoon. They plan to stop at the bank on the way home to deposit their paychecks. Since they have an impending bill coming due, it is very important that they deposit their paychecks by Saturday. Hannah notes that she was at the bank two weeks before on a Saturday morning, and it was open. Hannah says to Sarah, 'I know that the bank will be open tomorrow'.

Assume that the bank really will be open tomorrow. Please indicate how strongly you agree with the following statement:

When Hannah says, ''I know that the bank will be open on tomorrow,'' what she says is true.

1	2	3	4	5	6	7
Strongly Agree			Neutral			Strongly Disagree

Simplified Low Stakes: Hannah and her sister Sarah are driving home on a Friday afternoon. They plan to stop at the bank on the way home to deposit their paychecks. Since they do not have an impending bill coming due, it is not very important that they deposit their paychecks by Saturday. Hannah notes that she was at the bank two weeks before on a Saturday morning, and it was open. Hannah says to Sarah, 'I know that the bank will be open tomorrow'.

Assume that the bank really will be open tomorrow. Please indicate how strongly you agree with the following statement:

When Hannah says, ''I know that the bank will be open tomorrow,'' what she says is true.

1	2	3	4	5	6	7
Strongly Agree			Neutral			Strongly Disagree

Appendix V

Low Stakes Bridge: 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 ditch. 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.''

Assume that the bridge is safe enough for him to cross. Please indicate how much you agree with the following statement:

When John thinks to himself, ''I know that my truck will make it across the bridge,'' what he thinks is true.

1	2	3	4	5	6	7
Strongly Agree			Neutral			Strongly Disagree

High Stakes Bridge: 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 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.''

Assume that the bridge is safe enough for him to cross. Please indicate how much you agree with the following statement:

When John thinks to himself, ''I know that my truck will make it across the bridge,'' what he thinks is true.

1	2	3	4	5	6	7
Strongly Agree			Neutral			Strongly Disagree