



# A Bayesian framework for knowledge attribution: Evidence from semantic integration <sup>☆</sup>



Derek Powell <sup>a,\*</sup>, Zachary Horne <sup>b</sup>, N. Ángel Pinillos <sup>c</sup>, Keith J. Holyoak <sup>a</sup>

<sup>a</sup> Department of Psychology, University of California, Los Angeles, United States

<sup>b</sup> Department of Psychology, University of Illinois at Urbana-Champaign, United States

<sup>c</sup> Department of Philosophy, Arizona State University, United States

## ARTICLE INFO

### Article history:

Received 1 November 2013

Revised 9 February 2015

Accepted 1 March 2015

Available online 23 March 2015

### Keywords:

Knowledge

Bayesian reasoning

Implicit memory

Semantic integration

False memory

## ABSTRACT

We propose a Bayesian framework for the attribution of knowledge, and apply this framework to generate novel predictions about knowledge attribution for different types of “Gettier cases”, in which an agent is led to a justified true belief yet has made erroneous assumptions. We tested these predictions using a paradigm based on semantic integration. We coded the frequencies with which participants falsely recalled the word “thought” as “knew” (or a near synonym), yielding an implicit measure of conceptual activation. Our experiments confirmed the predictions of our Bayesian account of knowledge attribution across three experiments. We found that Gettier cases due to counterfeit objects were not treated as knowledge (Experiment 1), but those due to intentionally-replaced evidence were (Experiment 2). Our findings are not well explained by an alternative account focused only on luck, because accidentally-replaced evidence activated the knowledge concept more strongly than did similar false belief cases (Experiment 3). We observed a consistent pattern of results across a number of different vignettes that varied the quality and type of evidence available to agents, the relative stakes involved, and surface details of content. Accordingly, the present findings establish basic phenomena surrounding people’s knowledge attributions in Gettier cases, and provide explanations of these phenomena within a Bayesian framework.

© 2015 Elsevier B.V. All rights reserved.

## 1. Introduction

In everyday life, it is often vital that we draw accurate distinctions between what we know, and what we merely believe. Whereas knowing may license action (Hawthorne & Stanley, 2008), lack of knowledge calls for caution and consideration of more evidence. Moreover, we continually

need to evaluate *other people’s* knowledge. For example, when someone harms us, assignment of blame often involves assessing whether that person knew that their actions would have harmful consequences (e.g., Young & Saxe, 2011). Evaluating knowledge requires an understanding of what it means to know, raising an important psychological question: what is people’s concept of knowledge?

Recent psychological research on this question (Nagel, San Juan, & Mar, 2013; Starmans & Friedman, 2012; Turri, Buckwalter, & Blouw, 2014) has taken inspiration from philosophical analyses of knowledge. Philosophers once commonly accepted that knowledge is *justified true belief* (JTB; Ayer, 1956; Plato, 1961). But recently, many epistemologists have rejected this analysis in light of a

<sup>☆</sup> A preliminary report of Experiments 1 and 2 was presented at the 35th Annual Conference of the Cognitive Science Society (Berlin, August 2013).

\* Corresponding author at: Department of Psychology, University of California, Los Angeles, 1285 Franz Hall Box 951563, Los Angeles, CA 90095, United States.

E-mail address: [derepowell@ucla.edu](mailto:derepowell@ucla.edu) (D. Powell).

class of thought experiments now known as *Gettier cases* (Cohen, 1998; Greco, 2003; Lewis, 1996; Sosa, 2007; Turri, 2011; Williamson, 2002; Zagzebski, 1996). Gettier cases (named after their originator; Gettier, 1963) are situations in which an agent holds a justified true belief, but unexpected elements of the situation (allegedly) prevent the agent from truly “knowing.” Psychological investigations of people’s evaluations of Gettier cases may serve as a revealing window into people’s concept of knowledge and the basis for their knowledge attributions.

A number of different types of Gettier cases have been discussed in the philosophy literature (e.g., Fantl & McGrath, 2009; Goldman, 1976; Sturgeon, 1993; Turri, 2011). In the present paper we focus on two major classes of such cases, which respectively concern (1) the replacement of items or evidence, and (2) the presence of counterfeit objects.

In *replaced evidence* cases, an agent encounters what appears to be direct evidence for a belief, but which is actually a copy of the original evidence or a similar substitute.<sup>1</sup> For example, suppose a young man named Will commits a crime, and then covers his tracks by destroying the evidence that would have implicated him. Unfortunately for Will, his enemy Beth is aware of his crime and plants evidence to ensure that he is caught anyway. A detective investigates the crime and finds the planted evidence, which leads him to believe that Will committed the crime. The detective’s belief is true and is justified by the evidence he found. Consequently, on the JTB account of knowledge, the detective knows Will is guilty. However, many philosophers claim that the detective does not know that Will is guilty (for discussion of an analogous case, see Fantl & McGrath, 2009).

Another type of replacement case involves the replacement of the subject of an agent’s belief, which Turri et al. (2014) have labeled “replacement-by-backup” cases. For instance, suppose a woman places a pen on a table in her apartment and then steps into the shower. Then, a burglar silently steals the pen and replaces it with another identical pen. After the burglar leaves, the woman still (correctly) believes there is a pen on her table, yet most philosophers conclude she does not know this fact (e.g., Sturgeon, 1993; Turri, 2011; Williams, 1978).

The second class of Gettier case we will consider are those due to *counterfeit objects*.<sup>2</sup> For example, imagine a mother and her young son are driving along a country road. As they drive, the mother is pointing out the window and labeling the things they see for her child’s benefit. At one point she sees a barn and says, “That’s a barn.” Unbeknownst to the mother, the residents along this strip of highway have erected several facades that look exactly like real barns. The barn she is looking at is actually the only real barn for miles, and from the road she would have no way of distinguishing between it and the facades. In fact, it was by sheer luck that she ended up pointing at a real barn.

Her belief is true, and it is justified by her perceptual experience of the barn. Yet, it has been claimed that she does not know that she is pointing at a barn (e.g., Goldman, 1976).

Though many philosophers have argued that agents in Gettier cases do not have knowledge (e.g., Fantl & McGrath, 2009; Goldman, 1976; Sturgeon, 1993; Turri, 2011; Williams, 1978), psychological investigations of laypeople’s judgments about such cases have produced intriguing, if sometimes inconsistent, results (e.g., Colaço, Buckwalter, Stich, & Machery, 2014; Nagel, San Juan, et al., 2013; Starmans & Friedman, 2012; Turri et al., 2014; Wright, 2010). Some of these findings stand in contrast to philosophers’ intuitions. Starmans and Friedman (2012) found that participants tended to attribute knowledge in “replacement-by-backup” Gettier cases almost as readily as in standard cases of justified true belief. Similarly, Turri et al. (2014) found that people also attributed knowledge to agents in counterfeit-object cases. However, Turri et al. also report an experiment in which participants distinguished between a replacement-by-backup case and a standard JTB case, contradicting the findings reported by Starmans and Friedman. Unlike Turri et al., Colaço et al. (2014) did observe differences between rates of knowledge attribution in counterfeit-object and JTB cases (although participants’ ratings appear to have weakly favored knowledge attribution for both types of cases). Finally, Nagel, San Juan, et al. (2013) examined a variety of cases, including “replacement-by-backup”, replaced-evidence, and counterfeit-objects cases. Averaging across these different cases, they found that people tended to deny that agents knew (although this claim is disputed by Starmans & Friedman, 2013). Altogether, there seem to be few points of agreement among these findings: both replacement and counterfeit-object Gettier cases have been found to elicit knowledge attributions in some experiments (Starmans & Friedman, 2012; Turri et al., 2014), but not in others (Colaço et al., 2014; Nagel, San Juan, et al., 2013; Turri et al., 2014).

Setting aside these inconsistencies, there are at least two problems with extant research on knowledge attribution. First, there is an unresolved methodological debate over the best way to probe participants’ knowledge attributions (Nagel, Mar, et al., 2013; Starmans & Friedman, 2013). Existing research has relied on explicit survey-like questions for assessing knowledge attributions, but the reliability and validity of these measures have not been established. Methodological issues thus offer one possible explanation for the lack of agreement among the findings of different researchers. Later in the present paper, we discuss these methodological issues further, and report three experiments that begin to address these concerns.

Second, there is no clear theoretical context within which to interpret empirical findings regarding laypeople’s reactions to Gettier cases, or from which specific predictions can be generated about their expected behavior. For example, only Turri et al. (2014) have drawn a clear distinction between replacement cases and counterfeit-object cases, but even these researchers have not examined how this distinction might be explained, or what this distinction implies about the lay concept of knowledge. Without any overarching theoretical framework, it is unclear how

<sup>1</sup> Elsewhere these types of cases have sometimes been referred to as “false lemma” cases (e.g., Nagel, Mar, and San Juan, 2013; Nagel, San Juan, et al., 2013).

<sup>2</sup> Many philosophers have referred to cases of this sort as “fake barn” Gettier cases (after Goldman, 1976), but we believe it is useful to introduce more general terminology that is less dependent on an incidental example.

Download English Version:

<https://daneshyari.com/en/article/7287105>

Download Persian Version:

<https://daneshyari.com/article/7287105>

[Daneshyari.com](https://daneshyari.com)