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Ability, Knowledge, and Non-paradigmatic Testimony

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Abstract

Critics of virtue reliabilism allege that the view cannot account for testimonial knowledge, as the acquisition of such knowledge is creditable to the testifier, not the recipient's cognitive abilities. I defend virtue reliabilism by attending to empirical work concerning human abilities to detect sincerity, certainty, and seriousness through bodily cues and properties of utterances. Then, I consider forms of testimony involving books, newspapers, and online social networks. I argue that, while discriminatory abilities directed at bodily cues and properties of utterances are impotent in the face of such testimony, alternative abilities facilitate the acquisition of knowledge from these sources.

Keywords: Embodied communication; epistemic luck; Gettier cases; lies; social media; testimony; virtue reliabilism

Introduction

It has been alleged that virtue reliabilism and other credit theories of knowledge cannot account for the acquisition of knowledge from testimony in certain important cases (Lackey 2007, 2009; Pritchard 2012). This is a serious allegation, especially given the social turn in epistemology. The basis of this allegation is that virtue reliabilism can only account for the existence of knowledge if the knowledge in question is attributable to the epistemic virtues of the subject. But, in many cases of testimony, credit for the transmission of knowledge belongs to the testifier, rather than the recipient. Thus, in many cases of testimony, virtue reliabilism cannot recognize the transmission of knowledge. Given the apparent prevalence of testimonial knowledge, this conclusion seems to spell doom for virtue reliabilism.

The first major project of this paper is a defense of virtue reliabilism against this line of objection. The substance of this defense is that critics who press this line of objection against virtue reliabilism underestimate the abilities typically in play when individuals form beliefs in response to testimony. Drawing on empirical work concerning lie and sarcasm detection and embodied communication, I argue that the perception of speaker sincerity, certainty, and seriousness involves sophisticated abilities on the part of the

hearer. Thus, the formation of true belief on the basis of testimony is substantially creditable to the hearer.

Having defended virtue reliabilism, I turn to the second major project of this paper. I argue that the failure to appreciate the abilities involved in successful testimonial reception promotes misconceptions about the generalizability of principles concerning the conditions under which testimony can transmit knowledge. In particular, I argue that the abilities at work when one accesses books and newspapers tend to differ from those at work in face-to-face communication. Whereas competent testimonial reception in the latter case often relies on sensitivity to bodily indicators of reliability, competent testimonial reception in the former cases typically depends on selectiveness in sources and reflectiveness concerning claims. I then introduce a related challenge for virtue reliabilism, namely the challenge of accounting for knowledge acquisition from social media testimony.

Finally, I argue that the unavailability of signs like bodily gesture on social networking platforms does not entail the irrelevance of ability to the reception of testimony on such platforms. Rather, engagement with testimony on such platforms calls for unique abilities. For this reason, virtue reliabilism can account for the acquisition of knowledge from testimony on online social networks. However, such knowledge acquisition requires the cultivation of abilities specific to this environment.

1. Credit, Virtue Reliabilism, and Testimony

According to the credit view of knowledge (CVK) knowledge that p requires that its subject deserves credit for truly believing that p . CVK is most commonly exemplified by the virtue reliabilist (VR) approach to knowledge (Greco 2003, 2007b, 2010; Sosa 2007, 2011), and hence I concentrate on VR in what follows. According to VR, knowledge acquisition requires the exercise of one's cognitive abilities. VR comes in *modest* and *robust* forms (Kallestrup and Pritchard 2012). According to modest varieties, production of true belief by the exercise of cognitive ability is not by itself sufficient for knowledge, but must be supplemented with some additional – typically modal – condition. Pritchard's anti-luck virtue epistemology (2012, 2017) is a particularly well-developed version of modest VR. According to robust VR, it is both necessary and sufficient for knowledge that the subject's true belief is substantially creditable to that subject's exercise of cognitive abilities. Robust VR is sometimes motivated by the claim that it offers a response to the Gettier problem (Greco 2021: 89–90; Sosa 2007: 42–3, Ch. 5). A Gettiered subject believes the truth through luck, rather than ability, and thus is not creditable for believing truly. But this apparent utility in addressing the Gettier problem is not the sole motivation for VR. The view also seems to account for the value of knowledge (Riggs 2009; Greco 2010: Ch. 6, 2021: 90), and takes some support from recognizing knowledge as one member of a broader kind: success from ability (Greco 2010: Ch. 1, 2012; Kelp 2011: 409–10; Sosa 2015: 9).

VR, especially in its robust form, appears to flounder in the case of knowledge transmission through testimony. Often, when knowledge is transmitted through testimony, credit for the resultant true belief belongs to the deliverer, and not to the recipient. Consequently, given that knowledge *is* routinely transmitted through testimony in those cases where the resultant true belief is not creditable to the abilities of recipient, VR is false. Or so allege critics of VR who press this line of argument. Importantly, critics do not allege that VR can *never* recognize the existence of testimonial knowledge. In some cases, would-be recipients of testimony exercise significant discretion in the

selection of sources (Lackey 2007: 353). For example, a non-expert who wishes to get an accurate assessment of the state of the international conflict may go to great pains to identify a competent and minimally biased authority on the issue. In such a case, the recipient's success is arguably due to their abilities. The question of what precisely the recipient deserves credit for in such a case is a substantive one in its own right. One suggestion conducive to VR and to reductionist approaches in the epistemology of testimony is that the agent would in such a case deserve credit for the competent inference that, given the authority's credentials, the authority is likely to be correct about the matter at hand. I highlight this issue here as its importance will emerge in section 3.

For the present, the key point is that the allegation against VR is not that the view cannot account for testimonial knowledge at all, but rather that the view cannot account for certain instances of testimonial knowledge. One way to illustrate this point is to highlight a particular case or body of cases in which knowledge is plausibly transmitted through testimony, but true belief is not creditable to the recipient's cognitive abilities. Lackey (2007: 352) offers such a case:

Chicago Visitor

Having just arrived at the train station in Chicago, Morris wishes to obtain directions to the Sears Tower. He looks around, approaches the first adult passer-by that he sees, and asks how to get to his desired destination. The passer-by, who happens to be a Chicago resident who knows the city extraordinarily well, provides Morris with impeccable directions to the Sears Tower by telling him that it is located two blocks east of the train station. Morris unhesitatingly forms the corresponding true belief.

According to Lackey, the passer-by transmits knowledge to Morris in *Chicago Visitor*, even though Morris does not deserve credit for forming a true belief in that case. Credit for Morris's true belief is instead owed to the passer-by. Moreover, in Lackey's telling, the details of *Chicago Visitor* are unremarkable. Thus, whatever would prevent the ascription of knowledge to Morris in this case would apply very generally to plausible instances of testimonial knowledge. So, while VR does not rule out the existence of testimonial knowledge full-stop, VR has implausible implications in a broad range of cases.

The objection to VR can be developed into the following dilemma:

Creditworthiness Dilemma

Either the notion of creditworthiness operative in the Credit View of Knowledge is robust enough to rule out subjects from deserving credit for the truth of their beliefs in Gettier-type cases, but then neither is credit deserved in CHICAGO VISITOR-type cases; or the relevant notion of creditworthiness is weak enough to render subjects deserving of credit for the truth of their beliefs in CHICAGO VISITOR-type cases, but then so, too, is credit deserved in Gettier-type cases. (Lackey 2009: 34)

While Lackey is not explicit on the point in this excerpt, the *Creditworthiness Dilemma* can be restated to treat creditworthiness as a matter of degree.¹ The thrust of the

¹Thanks to an anonymous referee for recommending that I draw attention to creditworthiness being a matter of degree. It is worth noting, in this connection, that Lackey elsewhere emphasizes the degreeed

dilemma would then be that either subjects in Gettier-type cases and subjects in *Chicago Visitor*-type cases are both sufficiently creditable for their true beliefs to satisfy the credit condition on knowledge, or neither are (cf. Kallestrup and Pritchard 2012: 90–1). The *Creditworthiness Dilemma* undermines the appeal to Gettier cases in support of VR and CVK more generally, insofar as VR could only claim support from such cases by jettisoning the ability to account for testimonial knowledge (Pritchard 2012: 269–71). Indeed, the *Creditworthiness Dilemma* threatens to transform Gettier-style cases from support for VR to objections to it.

Modest virtue reliabilists have a ready response to the *Creditworthiness Dilemma*. On this view, the problematic attribution of knowledge in Gettier cases is blocked by appeal to an independent condition – in Pritchard’s (2012) case a safety condition – as opposed to the ability condition. The modest virtue reliabilist may thus say that both Morris and corresponding Gettiered subjects exercise cognitive ability to a sufficient degree to satisfy the ability condition on knowledge, but Morris’s belief, unlike those of Gettiered subjects, satisfies the independent anti-luck condition. The *Creditworthiness Dilemma*, then, is thus principally a challenge to those theories that, like robust VR, treat creditworthiness for true belief as both necessary and sufficient for knowledge. Thus, in what follows, I focus mainly on the threat to robust VR. For simplicity, I use “VR” to refer to this strong version of the view in what follows, unless otherwise clarified. Despite this focus, even proponents of modest VR do well to attend to the abilities involved in testimonial reception. First, forms of modest VR like Pritchard’s anti-luck virtue epistemology lack some of the simplicity of their robust counterparts. Second, even if one maintains that true beliefs owed to the exercise of cognitive ability only amount to knowledge provided that some further condition is satisfied, it is worth considering what abilities are involved in the creditworthy reception of testimony.

To better discuss the *Creditworthiness Dilemma*, and the threat it poses to VR, it will be useful to have a Gettier-style case on the table. While commentators on the *Creditworthiness Dilemma* have tended to focus on the widely-cited *Fake Barn* case (Goldman 1976; Ginet 1988), it is useful to discuss a case that more closely parallels *Chicago Visitor*. Consider the following case:

Bird Calls

Henrietta is hiking for the first time in a remote woodland area. She hears a bird call that she correctly identifies as belonging to the amber thrush² – a bird species with which she is familiar. Henrietta is not aware that a species of mockingbird found nowhere else on the planet are common in this woodland area. This species of mockingbird mimics the call of the amber thrush so closely that Henrietta would be unable to tell the difference.

Henrietta truly believes that the call she has heard belongs to an amber thrush. However, she intuitively does not know that the call belongs to the amber thrush, and this is because she could very easily have mistaken the mockingbird’s call for that of the amber thrush. Yet, on the face of things, Henrietta and Morris’s epistemic

nature of creditworthiness (Lackey 2007). Moreover, VR and CVK more generally are often presented in terms of requiring of would-be knowers that they are, to a high-degree, creditable for their true beliefs. As an anonymous referee points out, Hirvelä and Lasonen-Aarnio (2021) offer a helpful overview of this tendency in a discussion of what they label the *Cake Theory of Credit*.

²I introduce this non-existent bird species so as to avoid potential distractions concerning the similarity of various bird calls.

successes are both in large part creditable to something other than their cognitive abilities. Hence, the proponent of VR must either ascribe knowledge to Henrietta or deny it to Morris. This is the essence of the *Creditworthiness Dilemma*.

The threat of the *Creditworthiness Dilemma* is widely recognized among virtue reliabilists, and virtue reliabilists have been creative in their attempts to address it (Sosa 2007; Riggs 2009; Greco 2010, 2012, 2021; Kelp 2011, 2013a, 2013b; Pritchard 2012; Palermos 2016; Broncano-Berrocá 2018; Hundertmark and Kindley 2021). The diversity of proposals on offer underscores that nothing approaching consensus has yet been achieved concerning how the virtue reliabilist can best respond to the dilemma. To make progress in this area, it will be helpful to recall how virtue reliabilists tend to address cases like *Bird Calls*.

First, it is worth recalling Pritchard's (2009) distinction between *intervening luck* and *environmental luck*. In cases of the former, luck corrects for the misdirection of competent belief-forming processes that would otherwise produce false beliefs. The original Gettier cases (Gettier 1963) involve intervening luck. VR is well-suited to explaining why cases of intervening luck do not amount to knowledge, as in such cases the absence of luck would leave the subject with a false belief. But virtue reliabilists have greater difficulty with cases like *Bird Calls*, which involve environmental luck. These cases pose a challenge, as the luck in this case does not "correct for" an otherwise false belief. Instead, it is a matter of luck in such cases that the subject's belief-forming processes are directed toward a non-misleading target. For instance, it is a matter of luck that Henrietta hears an amber thrush rather than a mockingbird that would mimic the thrush's call. In short, there is a sense in which the subject's true belief is substantially due to cognitive ability in cases of environmental luck but not cases of intervening luck.

Virtue reliabilists have responded to this case in various ways. Some propose to add a modal condition to the VR account of knowledge (Pritchard 2012; Kelp 2013a, 2013b). Sosa (2007) proposes to allow that environmental luck *is* consistent with knowledge. Others deny that cognitive abilities account for true belief in cases like *Bird Calls*, and thus that the virtue reliabilist must recognize knowledge in such cases (Greco 2010: 76–80). For example, one might argue that, precisely because Henrietta lacks the ability to distinguish between the calls of amber thrushes and the mockingbirds that mimic them, she lacks knowledge in *Bird Calls*. This is the strategy I adopt here. However, the peril of this strategy is that it appears to lead one head-on into the *Creditworthiness Dilemma*, as similar remarks might well apply to Morris. Lackey suggests just this, writing that:

Morris could have plausibly approached a competent-looking liar or a directionally challenged speaker in much the same way that he did an honest, knowledgeable, Chicago resident when asking for assistance in finding the Sears Tower. But if Morris's behavior is equally compatible with all of these outcomes, then it is clear that he is not reliably discriminating reliable sources of testimony from unreliable ones in the robust sense under consideration. (Lackey 2009: 31–2)

In short, Morris seems as likely to be duped by liars or incompetents as Henrietta is to be duped by mockingbirds. Either both exercise cognitive abilities in such a way as to be worthy of credit, or neither does.

Confronted with *Chicago Visitor*, the proponent of VR has several options. First, she might concede that the view has the full range of implications that Lackey ascribes to it, effectively accepting that testimonial knowledge is rarer than is typically thought. Second, she might allow that Morris has knowledge in *Chicago Visitor*, while insisting

that Morris exercises cognitive abilities in such a way as to distinguish himself from Henrietta and to therefore deserve credit. Alternatively, one might argue that the case is underspecified. Given an elaboration of the case, it will emerge that either Morris lacks knowledge but also does not sufficiently exercise cognitive abilities to warrant credit or that Morris has knowledge but only because he exercises sufficient cognitive abilities. After considering the prospects for the second strategy, I develop this third strategy at length in section 2.

2. Abilities and Testimonial Reception

To begin, it will be helpful to explain why, in *Chicago Visitor*, it is rather plausible that Morris does not deserve credit for his true belief concerning the location of the Sears Tower. It is relevant in this connection that Morris asks the first adult he sees and that Morris accepts that passer-by's answer unhesitatingly. It thus seems that Morris is, respectively, *non-selective* and *nonreflective*.

One bold strategy for defending CVK would be to insist that non-selectiveness and non-reflectiveness contribute to the acquisition of true belief from testimony (cf. Michaelian 2010), and hence that a recipient of testimony may deserve credit for the formation of true belief in virtue of these tendencies. This response might be encouraged by a Reidian optimism concerning testimony. Famously, Reid suggests that the successful transmission of knowledge is facilitated by two complementary principles, the *principle of veracity* and the *principle of credulity* (Reid 1983: 94–5). Whereas the former principle asserts the tendency of human beings to speak sincerely, the latter principle asserts the tendency of human beings to believe testimony. The latter principle might be derided as a principle of gullibility (cf. Fricker 1994), but it has been argued that gullibility may be the best epistemic policy (Michaelian 2010). That gullibility promotes the aim of forming true beliefs is suggested by empirical work indicating the relative infrequency of lies. While Reid's assertion that even liars tell one hundred truths for every falsehood (1983: 94–5) is likely overly optimistic, recent studies suggest that lies are quite uncommon³ (DePaolo *et al.* 1996; Serota *et al.* 2010). The infrequency of lying is also suggested by the Kantian theoretical consideration that the practical utility of lies depends on their relative infrequency.

The optimistic outlook on testimony would suggest that the disposition toward trust is highly conducive to the formation of true beliefs. Morris's apparently blind trust, then, might be regarded as a sort of epistemic virtue that entitles Morris to credit for his resultant true beliefs. This point is best brought out by comparing Morris to a highly suspicious epistemic agent. Such an agent would likely be deceived less often than Morris but would also have far fewer true beliefs. Indeed, supposing that lies are relatively uncommon, one might think that Morris would have far more true beliefs than his counterpart, at the cost of only a modest increase in false beliefs. Thus, when Morris's epistemic manner is compared with that of an especially suspicious agent, it becomes relatively plausible that Morris's true beliefs formed through testimony are creditable to him.

This bold strategy faces difficulties, however. Where Morris forms false beliefs based on testimony, these false beliefs can also plausibly be explained by his lack of

³One might critique the studies cited here on principled grounds, by noting that these studies depend on individuals' reports of their own lying behavior. The appearance of a self-undermining quality to the use of self-reporting to investigate lying behavior should not be overstated, however, as even habitual liars would have little incentive to lie within the context of the studies.

selectiveness and reflectiveness. Supposing the same tendencies cannot ground both Morris's creditworthiness for epistemic success and his blameworthiness for epistemic failure, it is worth looking elsewhere for a defense of VR.

An alternative approach, in line with the second strategy mentioned above, is to insist that Morris is, despite appearance, selective and thus deserving of a significant degree of credit in this case. One respect in which Morris appears to exercise selectiveness is that he asks an adult, and not a child, or a dog, or a parking meter, for that matter (Lackey 2007: 353; Kelp 2011: 429; Kallestrup and Pritchard 2012: 89; Palermos 2016: 313). However, while Morris plausibly displays some degree of selectiveness, the tendency to not ask certain obviously inappropriate sources for answers is consistent with a real risk of asking unreliable testifiers, including habitual liars (Lackey 2007: 353–4).

One might alternatively or additionally argue that Morris is deserving of credit by arguing that Morris is plausibly reflective after all (cf. Palermos 2016: 313–14). To see this, one might imagine what would happen if the passer-by had told Morris that the Sears Tower was located deep underground. We might then imagine different reactions Morris might have. He might laugh and ask again for a serious answer. Or he might react with credulity, and ask where to buy a ticket for the underground elevator. What Morris *would do* in such a case arguably has some bearing on whether he knows in the original case insofar as it has some bearing on whether he is reflective.

By itself, the response described in the above paragraph does not appear to affirm Morris's deservingness of a significant degree of credit. That Morris's skepticism would be triggered by especially outlandish answers does not show that he is sufficiently reflective to avoid easily forming false beliefs on the basis of testimony. However, this response illustrates the important point that what Morris *would do* in a range of related cases has some bearing on whether he deserves credit in *Chicago Visitor*.

It seems that neither the appeal to Morris's selectiveness nor the appeal to his (likely) reflectiveness is sufficient to conclude that, in *Chicago Visitor*, Morris's true belief is sufficiently due to his exercise of cognitive ability. However, there is a third capacity that Morris might exercise to deserve credit: he might be *discriminating* (Fricker 1994; Kelp 2011: 429–30). The claim that recipients of testimony deserve credit for the formation of resultant true beliefs in virtue of the discrimination they exercise has been defended by Riggs (2009). Riggs offers the following brief overview of some respects in which we exercise this sort of discrimination in ordinary cases of testimony:

While the person is talking, we watch to see if they show signs of being hesitant or unsure. We notice if they behave in certain ways that indicate they are lying (the ever-notorious “shifty eyes”). (Riggs 2009: 211)

Riggs does not use this line of reasoning to defend the attribution of credit to Morris – in fact he suggests that Morris ought not be ascribed either credit or knowledge. However, he does note that the fact that uncertainty or dishonesty would be noticed if present is enough to ground the attribution of credit even in a case in which suspicions are not raised. Is this enough to ascribe sufficient credit and therefore knowledge in *Chicago Visitor*?

The answer might be thought to hang on whether Morris does indeed exercise the relevant discriminatory capacities (cf. Greco 2007b: 63). On this issue, details of the case pull in two directions. On the one hand, Lackey writes that Morris forms his belief without hesitation. This might be taken to suggest that Morris is both nonreflective and

non-discriminating. But, on the other hand, Lackey suggests that there is nothing remarkable about the *Chicago Visitor* case. However, as I now argue based on existing empirical work, Morris's non-exercise of these and related capacities would make the case exceptional.

A large body of empirical work suggests that ordinary human communicators possess some ability to recognize indicators of noncredible testimony. A piece of testimony might be noncredible for a range of reasons. It might be sarcastic or otherwise made in jest. It might be a lie. It might be made with substantial uncertainty. Whether a piece of testimony is noncredible in virtue of falling into one of these categories might be indicated by a range of signs. These include the speaker's intonation, facial expressions, gestures, and other body language. That communicators are sensitive to such signals ought to be unsurprising, as intonations and subtle movements play an important role in disambiguating otherwise ambiguous expressions. Consider the expression *the restaurant is that way*. Whether the audience interprets this expression as a question or an assertion, and as indicating one direction or another, may depend on the speaker's intonation and subtle head movements. In short, successful communication in face-to-face contexts is not just a matter of exchanging explicit messages via utterances, but involves attention to subtle bodily movements and properties of those utterances. Empirical findings suggest that ordinary human communicators show an impressive facility to use such signs to identify unreliable testimony.

The detection of lies has received the lion's share of attention among epistemologists of testimony, and has been subjected to substantial empirical investigation, so let us begin there. As noted above, Riggs (2009) alludes to the attention to "shifty eyes" in making the case that recipients of testimony exercise discrimination. Shifty eyes fall among indicators like nervousness (Vrij and Fisher 2020) and averted gaze in the folk theory of how lies manifest themselves. Empirical studies complicate this folk picture (Shieber 2012; Fricker 2016: 99). First, many empirical studies suggest that neither laypersons nor individuals specifically trained in lie detection are reliable detectors of lies (Bond Jr. and DePaolo 2006, 2008). In fact, these studies consistently show that the rate at which experimental subjects accurately classify lies and non-lies is around 55%. This evidently unimpressive figure might be interpreted as a challenge to Rigg's proposal for defending the CVK. After all, if individuals barely surpass chance in the ability to distinguish between lies and sincere assertions, it might seem that discriminatory abilities do not provide a basis for the assignment of credit to testimonial recipients.

However, this pessimistic conclusion is too quick. First, a number of critiques have been leveled against the use of evidence collected in artificial settings to draw conclusions about lie detection in real-world settings (Buckley 2012). Artificial settings tend to exclude interaction between senders and recipients of testimony (Bond Jr. and DePaolo 2006: 220) and often do not make accessible the full range of behavioral clues that might be indicative of lying or sincerity. Further empirical work suggests that a range of behavioral cues might in principle allow for a rate of lie detection that vastly exceeds the ~55% figures (Hartwig and Bond Jr. 2014). A further general basis for skepticism concerning the pessimistic empirical conclusions in this area is that experimental work tends to confront subjects with a dramatically higher rate of lies than they would encounter in ordinary life. As I noted above, however, individuals are strongly inclined toward credulity. This is an inclination that serves them well in ordinary contexts, but may promote error in experimental contexts in which the incidence of lies is inflated. By way of comparison, consider that the susceptibility of

ordinary perceivers to visual illusions largely confined to experimental contexts would not be taken to impugn the perceptual abilities of such perceivers in general⁴ (Fricker 2016: 96–7). Indeed, because successful lie detection amounts to overcoming the machinations of other intelligent agents – a non-issue in typical cases of perception – it is to be expected that even skilled lie detectors will encounter greater difficulties than skilled perceivers. This point can be illustrated with an analogy. Set against a formidable opponent, even an excellent boxer may land only around 20% of punches. Such an apparently low rate of success would not indicate that those punches the boxer *does* land are not attributable to ability – an unskilled boxer would likely land no punches against a professional. Likewise, in the arena of deception and deception-detection, even a superficially low rate of success at the latter may be indicative of substantial ability.

As the preceding remarks make clear, the empirical evidence of a human ability to detect lies is mixed, and it is not altogether clear how to interpret such results or to what extent they translate to real-world settings. These findings are consistent with, but certainly do not offer decisive support for Riggs's (2009) suggestion that recipients of testimony deserve credit for the exercise of abilities to detect indicators of lying. However, there is a stronger empirical case to be made for the assignment of credit to testimonial recipients. As Riggs suggests, testimonial recipients monitor not only for sincerity, but for certainty (2009: 11). Here the empirical evidence is clearer – there is strong evidence that certainty and uncertainty are indicated by speaker intonations and bodily movements, and that such signs are reliably recognized by testimonial recipients (Roseano *et al.* 2016). For example, Swerts and Krahmer (2005) conducted a pair of studies indicating that participants reliably produced auditory and visual indicators of uncertainty in responses to questions and that other participants were reliably able to pick up on these cues (see also Brennan and Williams 1995). The authors found an interesting range of visual cues, including smiles, changes in gaze, eyebrow raises, and movements of the mouth to be associated with uncertainty. Auditory indicators of uncertainty included relatively slow responses, pauses, and rising intonation (see also Smith and Clark 1993). The authors found that participants were reliably able to detect uncertainty using either audio or visual cues, but were most effective when able to access both types of indicators. In a related study, Borràs-Comes and colleagues (2011) likewise found that participants were able to detect uncertainty using audio and visual cues but that, in cases of conflict, gestural cues were assigned greater weight than prosodical indicators.

A further discriminatory ability that is routinely exercised in the consumption of testimony is the recognition of seriousness. Competent recipients of testimony distinguish between statements with evidential weight and those made sarcastically or otherwise in jest. For the sake of simplicity, I focus here on sarcasm. As with lies and uncertainty, sarcasm may manifest itself in a range of perceptually available cues (Attardo *et al.* 2003). Empirical studies suggest that ordinary communicators are highly reliable at recognizing sarcastic utterances (Rockwell 2000). Research in developmental psychology suggests that, early in life, the detection of sarcasm is especially dependent on intonation, rather than background knowledge (Capelli *et al.* 1990). In short, sarcasm – like lies and uncertainty – is often signaled by auditory cues and ordinary human communicators demonstrate the ability to pick up on these cues. While communicators'

⁴Greco (2010: 77) makes the related point that struggling in especially unfavorable environments does not impugn one's abilities in favorable environments.

abilities are far from infallible, this imperfection does not detract from the credit that is rightly attributed to recipients of testimony.

Thus far in this section I have defended the compatibility of VR with a broad range of testimonial knowledge by highlighting some of the abilities commonly operative in cases of testimonial reception. One potential concern for this defense of VR is that, insofar as it appeals to the abilities of testimony recipients, it may seem to exclude children from the ranks of those who possess testimonial knowledge (cf. Lackey 2007: 354). Many epistemologists would likely find this problematic, as it seems plausible that children are especially dependent on testimony for knowledge. It is important not to overstate the force of this objection. What children need for practical purposes are true beliefs, not necessarily knowledge. Moreover, as I will argue in section 3, there are principled reasons to think that children are typically more constrained in their abilities to acquire testimonial knowledge than adults. Still, it is worth noting here that the present objection underestimates the abilities of children as testimony recipients (Sperber *et al.* 2010). Children, like adults, use physical cues to monitor for deception (Rotenberg and Sullivan 2003). Additionally, in a study involving 3–5-year-old-children, Hübscher and her colleagues (2017) found that children undergo significant changes in their abilities to detect uncertainty during these ages. The abilities employed by child recipients are not restricted to those concerning discrimination. Young children also display selectivity and reflectiveness (Harris *et al.* 2018). Such children are sensitive to features relevant to the reliability of testifiers, including the testifier's access to written information (Robinson *et al.* 2013), the testifier's relevant expertise (Aguiar *et al.* 2012) and the testifier's track record (Hermes *et al.* 2015; Ronfard and Lane 2018). Children likewise display reflectiveness by, for example, resisting claims of the existence of mythical creatures (Woolley and Ghossainy 2013). Indeed, even 2-year-olds have been shown to verbally reject blatantly false statements (Pea 1982). In short, children regulate the intake of testimony with discrimination, selectiveness, and reflectiveness. The proponent of VR may thus maintain both that the acquisition of knowledge from testimony requires the exercise of ability and that children have such knowledge.

To conclude this section, let us revisit *Chicago Visitor* and *Bird Calls*. Recall that, according to Lackey, the case's core features are non-remarkable. Lackey uses the alleged representativeness of *Chicago Visitor*, together with the lack of a basis for attributing knowledge to Morris in that case to argue that recipients of testimony routinely fail to deserve credit for what they come to know. The empirical work discussed here complicates this argument. In addition to monitoring for sincerity, recipients of testimony typically monitor for subjective certainty and seriousness. In short, many abilities contribute to the successful determination as to whether or not to accept testimony in ordinary cases. Thus, either *Chicago Visitor* is remarkable insofar as its protagonist fails to engage in the sort of monitoring that is typical of testimonial recipients or Morris does engage such discrimination and hence deserves credit for his true belief. More generally, and ultimately more importantly, the argument from testimony against VR fails to appreciate the sophisticated suite of abilities that are operative in ordinary cases of testimonial reception. These abilities are imperfect, but are sufficient at least to distinguish between accurate testimony and a broad range of inaccurate claims. In contrast to Morris, and to recipients of testimony more widely, Henrietta lacks a corresponding ability to distinguish between the calls of amber thrushes and of their mimics.

One might reasonably object that Henrietta *does* possess a parallel ability. Even though she cannot distinguish between the calls of amber thrushes and their mockingbird mimics, she can distinguish between the calls of amber thrushes and a wide range

of other sounds, including those of most other birds. Thus, one might argue, Henrietta's discriminatory abilities play just the same role in contributing to her true belief as Morris's discriminatory abilities play in contributing to his. By way of response, notice that there is a class of sounds – the calls of amber thrushes and their mockingbird mimics – that Henrietta cannot distinguish between. In contrast, there is a class of testimony – one that includes reliable testimony, outright lies, and claims made with uncertainty – between whose members Morris can (fallibly) discriminate. It is for this reason, I suggest, that it is appropriate to say that Morris's belief, but not Henrietta's, is plausibly due sufficiently to ability. One might resist this response by noting that there are other classes of testimony for which Morris's discriminatory abilities are no help at all. This includes, for example, the class that includes just reliable testimony and highly convincing lies – perhaps the lies of extremely practiced or skilled liars. This is not the place to respond in full to this objection. However, it is worth pointing out that, having arrived at this objection, we have effectively exchanged the objection to VR from testimonial knowledge for a kind of generality problem (cf. Greco 2010: 76–80). Our question is now why it is appropriate to focus on Morris's ability to distinguish between reliable and unreliable testimony belonging to a certain relatively general class, rather than his inability to distinguish between reliable and unreliable testimony belonging to a relatively narrow class. If I am correct, then fully addressing the objection to VR from testimonial knowledge would require confronting this generality problem. However, it is worth noting that the assimilation offers substantial hope for VR, especially insofar as some version of the generality problem affects all or nearly all epistemologies (Comesaña 2006).

3. Non-paradigmatic Testimony

I have thus far argued that the reception of testimony in face-to-face settings typically involves the exercise of an impressive range of discriminatory abilities. I have argued on this basis that the existence of testimonial knowledge in such humdrum cases is thus consistent with VR. If this argument is sound, one objection to VR has been disarmed. But another lurks. In defending VR by appeal to the abilities operative in face-to-face communication, it seems that I have put in jeopardy the ability to reconcile VR with non-paradigmatic but important cases of testimony. For present purposes, non-paradigmatic testimony includes a range of cases of relatively disembodied forms of communication, including those involving phone conversations, newspapers, books, and social media posts.⁵ In this section, I explain the issue and its implications for the generalizability of conclusions reached in the epistemology of testimony.

Suppose it is accepted that the formation of true beliefs through paradigmatic testimony involves considerable ability and for this reason such true beliefs can amount to knowledge on VR. This result would only go some way toward accounting for our broad range of testimonial knowledge. After all, much of the knowledge we take ourselves to possess comes to us through non-paradigmatic forms of testimony in which words are at least partially divorced from the sorts of audiovisual indicators of reliability highlighted in the preceding section. The divorce of words from such indicators comes in degrees. In phone conversations, for example, pauses and intonations are available to the audience, but body language is not. When one forms beliefs based on newspaper

⁵It should be noted that some social epistemologists, for example Pritchard (2004), adopt an alternative conception of paradigmatic testimony.

or book contents, one does so in the absence of any of the sorts of cues highlighted in the above studies concerning the perception of sincerity, certainty, and seriousness. It might thus appear that, even if VR can account for knowledge acquisition through paradigmatic testimony, VR is inconsistent with the acquisition of knowledge from sources like books and newspapers. This result would be enough to show that VR has radically revisionist, and perhaps therefore unacceptable, implications. After all, many of our beliefs about the world are derived from just such disembodied forms of testimony.

However, VR may call upon additional resources to answer this challenge. Recall from above the distinction between selectiveness, reflectiveness, and discrimination. Thus far in this section I have highlighted the relative impotence of discrimination in cases of non-paradigmatic testimony. However, even in such cases, the reception of testimony may be tempered by selectiveness and reflectiveness. Reflectiveness is practiced when one compares incoming testimonial claims against what one knows, prior to accepting those claims. A reflective audience might, for some examples, reject testimony because it fails to be plausible in light of one's background knowledge or because, given what one knows, it is implausible that the testifier possesses good grounds for the testimony in question. For an example of the latter, consider how one is likely to demur when one's non-expert friend prognosticates on the likely outcome of a future election.⁶ Reflectiveness may be increased by increasing one's background knowledge, and hence one's ability to recognize implausible or unwarranted claims as such. Often, however, we lack adequate background knowledge to be substantially reflective about the claims we read in books and newspapers. My thin background knowledge concerning Australian geography and political dynamics may be enough for me to reject certain highly outlandish claims I might read in a newspaper article concerning Australian affairs. However, there are a wide range of true and false claims that might be made about Australian events such that my background knowledge would not be enough for me to recognize the false ones as such. The familiarity of this predicament is why selectivity is especially important in the case of non-paradigmatic sources of testimony.

Insofar as a recipient of testimony exercises selectivity, this recipient plausibly deserves credit for true beliefs thereby formed. Lackey acknowledges this point, writing:

[T]here are times when cases of testimonial knowledge may be at least in part creditable to the hearer in question – I may, for instance, deliberately choose to ask you rather than another friend a question about the Civil War because of the historical information that I know you possess and she lacks. (Lackey 2007: 353)

It is unclear from Lackey's description whether this is to be understood as a face-to-face or a non-paradigmatic case of testimony. However, if the argument in section 2 is correct, selectivity is especially important in cases of non-paradigmatic forms of testimony, where the intonations, expressions, and gestures of the testifier are not available to the recipient. In such cases, it may take substantial effort to determine which newspapers, books, and so on are likely to contain accurate information. Appreciation of the difficulty of this task helps to counter the suggestion that, even where a testimonial recipient exercises selectivity, that recipient deserves only a low degree of credit for believing truly (cf. Lackey 2007: fn. 15).

⁶It bears emphasizing that this is not an instance of selectivity – in this case, as in many cases, one does not seek out a source of information.

Selectivity is not universally practiced. We sometimes believe the contents of books and newspapers without first exercising selectivity about which books and newspapers to believe. Some of us do this more than others. If the arguments presented thus far in this paper are on track, true beliefs acquired through the non-selective reception of testimony may not involve the substantial exercise of ability on the part of the recipient. If VR is true and if the cases in question do not involve the exercise of substantial reflectiveness or discrimination, such cases do not involve the acquisition of knowledge. In short, despite the arguments made in section 2, we have arrived at the conclusion that VR *does* deny the existence of testimonial knowledge in certain cases.

But whether this conclusion is problematic is another matter. Consider an example:

*History Books*⁷

Suppose Sam is interested in the Greco-Persian Wars and decides to buy a book on the subject matter from the local bookstore. The store has two books on the topic, one by a reputable contemporary historian. The other is Herodotus's *Histories*. Recognizing no other basis for preference, Sam opts to buy the former, as it is on sale. Sam reads the first chapter and forms several true beliefs.

Do Sam's true beliefs amount to knowledge? Supposing that Sam would just as easily have formed false beliefs about Persia and its conflict with Greece on the basis of Herodotus's *Histories*, it seems not. Given Sam's non-selectivity, it seems purely a matter of luck that Sam formed true beliefs on the basis of the book he bought. This might change over time. As Sam reads on, the book's internal coherence, lucidity, and consistency with Sam's background knowledge might provide an additional, reflective basis for accepting its claims. In this case, I suggest, Sam may well deserve a high degree of credit for resultant true beliefs. But this is only due to the increased relevance of reflectiveness in accounting for the truth of Sam's beliefs. In short, the attainment of knowledge appears to track the desert of credit.

It is worth pausing at this stage to address an objection likely to be raised by socially oriented epistemologists. It might be thought that the role I have attached to selectivity fails to account for the importance of social structures in knowledge acquisition (Greene 2016; Shieber 2020; Greco 2021). Selectivity need not be achieved by individuals, but may be provided for by institutions and other features of the social context. Perhaps the most powerful version of this objection appeals to the knowledge of children. Children cannot generally exhibit meaningful selectivity concerning the quality of books, for example. Precisely because children are not selective, their knowledge acquisition relies on the selectivity of parents, teachers, and other epistemic authorities. But children can acquire knowledge from books, and hence it is not the case that knowledge acquisition from books depends on the subject's selectivity.

This objection draws attention to some important facts about knowledge and its role in social life. In my view, the best response is to bite the bullet and accept that children typically do not acquire testimonial knowledge from books alone. What follows is an attempt to make this bullet more palatable. First, note here that the claim is not that children can never acquire knowledge from books. Suppose that a child's teacher suggests that the child read a given book, in order to learn more about a subject matter. If the child infers that the book's claims are true in light of the child's warranted trust in the teacher, this is plausibly sufficient to allow the child to acquire knowledge from the

⁷For a structurally similar case, see Cath (2011: 115).

recommended book. The case at issue is instead one in which a child locates reading material without recognizing the guidance of a parent, teacher, or some similar figure. Second, consider the plausible – albeit not uncontroversial (Kelp 2011: fn. 35) – view that the function of the knowledge concept is to flag good informants (Craig 1990). Next, notice that the range of cases in which we are likely to regard children as good informants is limited. Children may well be treated as informants for questions like “where’s mom?” or “did someone feed the dog?”⁸ However, even if one knows that one’s precocious child has been independently researching frogs, one is not likely on this basis alone to treat one’s child as an informant about questions like “do frogs eat ants?”⁹ This is not to say that one would never ask one’s child such a question. One might do so to, for example, encourage the child’s curiosity. Indeed, one might even seek such information from a child. However, if one sought information in this way, one would naturally follow-up by asking how the child came across this information. In short, because one does not expect the child to engage in effective selectiveness, one would do so oneself. The child in such a case passes on knowledge,¹⁰ but is not treated as a good informant in itself. In short, the denial of certain forms of testimonial knowledge to children harmonizes with the view that attributions of knowledge flag good informants.

The critic of VR may insist that this response remains excessively individualistic, insofar as it neglects the role of parents and teachers in shaping the epistemic lives of children (cf. Goldberg 2008). What is the epistemic role of these figures, if not to facilitate childrens’ acquisition of knowledge? Simply put: the main epistemic function of parents and teachers is to facilitate childrens’ acquisition of true belief, not necessarily knowledge. In doing so, they may teach and model the activities necessary to acquire knowledge from non-paradigmatic testimony, but this may come later. The (self-consciously) sketchy account given here is thus individualistic concerning knowledge, but not epistemology writ large. Even within a deeply social epistemology, there remain guiding roles for individuals possessed of the somewhat individually demanding state of knowledge.

Let us conclude this section by reflecting on the significance of the points developed here for the epistemology of testimony. The most widely discussed topic in this area is the debate between reductionists and non-reductionists. Whereas reductionists maintain that testimonial knowledge requires that the recipient have positive reasons for accepting the testimony in question (Hume 1748 [1999]; Adler 1994; Fricker 1994), non-reductionists insist on a default entitlement to rely on testimony (Reid 1983; Coady 1992; Goldman 1999; Weiner 2003). These positions are typically treated as general, concerning the requirements for testimonial knowledge in both paradigmatic and non-paradigmatic instances. The considerations put forth in this section suggest that this binary approach is overly simple. So long as it is allowed that the exercise of discrimination is consistent with the acquisition of testimonial knowledge through a default entitlement,¹¹ non-reductionism appears especially well-suited to paradigmatic

⁸By acknowledging the authority of children with respect to certain kinds of testimony, we can arguably avoid committing epistemic injustice against children (Burroughs and Tollefsen 2016).

⁹This question is inspired by a thought experiment from Greco (2007a: 336–7).

¹⁰Some social epistemologists might object that only an individual that knows *p* can pass on testimonial knowledge that *p*. However, this view has been convincingly criticized by Lackey (1999).

¹¹Whereas Fricker (1994) denies the compatibility of non-reductionism with the exercise of discrimination, Goldberg and Henderson (2006) defend this compatibility.

forms of testimony, in which discrimination is likely to be effective. In contrast, as we have seen, the creditworthiness of true testimonial beliefs in non-paradigmatic forms of testimony appears to depend on the exercise of selectiveness and/or reflectiveness. Insofar as selectiveness and reflectiveness make available positive reasons to trust testimony, reductionism appears well-suited to accounting for testimonial knowledge in these non-paradigmatic cases. It should be acknowledged that this discussion of the reductionism versus non-reductionism issue is highly abbreviated. Moreover, the mapping of reductionism to non-paradigmatic testimony and non-reductionism to paradigmatic testimony will be complicated in the following section. Still, even this brief discussion suggests, I think, that the generality of epistemic principles concerning testimony ought not be taken for granted.¹²

4. Social Media, Testimony, and Discriminatory Abilities

I have thus far argued that VR can be reconciled with a broad range of testimonial knowledge. In many cases of paradigmatic testimony, the recipient deserves significant credit insofar as the recipient exercises discrimination. In cases of non-paradigmatic testimony, by contrast, creditworthiness tends to depend on the exercise of selectivity and/or reflectiveness. For example, those who acquire true beliefs from newspapers or books can be regarded as creditworthy insofar as they are selective concerning which newspapers and books to read. Yet the discussion thus far leaves an important class of testimony unaccounted for. Many individuals consume information via social media. This mode of belief formation, like belief formation from newspapers and books, leaves little place for bodily cues of reliability (Fallis 2018: 59; Boyd 2022). Can VR account for the acquisition of knowledge through such channels? Answering this question will demonstrate the flexibility of VR, while also drawing attention to some epistemically noteworthy features of social media.

It might be suggested that VR can account for knowledge acquisition via social media in the same way it accounts for knowledge acquisition via books and newspapers. Just as individuals can be selective and reflective concerning books and newspapers, individuals can be selective and reflective concerning social media posts. Insofar as individuals' tendencies to form true beliefs based on social media posts are owed to the exercise of these capacities, individuals deserve substantial credit for the resultant true beliefs. Or so one might think.

Two distinctive features of social media complicate this suggestion. First, while much of the information individuals acquire through social media comes from media organizations and personalities whose reliability can be assessed as one would assess the reliability of books and newspapers, many social media interactions involve other private users. While one might in principle attempt to determine the reliability of such users by combing through their posts and establishing facts about their track records, doing so would require enormous effort. In any case, such a process is rarely undertaken. Thus, if doing so is required for the attainment of knowledge on social media from ordinary users, few attain knowledge in this way. A second distinguishing feature of social media is that platforms often allow for individuals and groups to disguise their identities (Levy 2022). Such disguises may vary in sophistication. For example, some online trolls adopt fake personas simply to interfere with online discussions for the purpose of their own amusement (Hardaker 2010). In other cases, individuals or groups may construct

¹²For an alternative pluralistic approach to the reductionism versus non-reductionism debate, see Greco (2021).

detailed fake personas in order to advance specific, often propagandistic, aims (Chen 2015; Linvell and Warren 2020; Morrison 2021). This latter strategy may involve the establishment of networks of (partially) automated accounts (Stella *et al.* 2019). Finally, in some cases, deceptive agents may impersonate specific persons or organizations to exploit existing credibility (Zarei *et al.* 2020). All these strategies complicate the notion that individuals may assess the reliability of sources on social media in a way that closely resembles the assessment of books and newspapers.

The pervasiveness of trolls and bots on social media, together with other more pedestrian concerns about the spread of misinformation online, highlights the difficulty of forming beliefs reliably in the online context. Yet, from the perspective of the virtue reliabilist, this difficulty has a silver lining. The difficulty of forming beliefs reliably from social media posts suggests that individuals are worthy of credit when they get it right. The exercise of various abilities may contribute to this reliability. Most obviously, individuals may exhibit selectiveness. While the full assessment of a user's track record is likely to be prohibitively demanding, users of social media can and do perform simple checks of other users' profile information and recent posts in order to determine the degree of weight to place on those users' claims. As the problem of bots and trolls makes clear, doing so reliably may require a sensitivity to the signs of inauthenticity. Individuals may also exhibit reflectiveness. In the simplest case, reflectiveness may result in hesitation to form implausible beliefs based on social media posts. Reflectiveness may also take more sophisticated and personalized forms. For example, if one recognizes that one has been taken in by false conspiracy theories before, reflectiveness may involve adopting a highly critical stance toward conspiracy narratives. One may also exercise reflectiveness by taking a skeptical stance toward claims that appear *too* attractive in light of one's values (Nguyen 2021). Finally, while gestures and intonations are not typically available for would-be assessors of social media posts, it does not follow that discrimination has no role to play in the assessment of social media testimony. Just as there are folk theories of unreliability in face-to-face testimony – shifty eyes, averted gaze, and so on – there are folk theories of unreliability in online testimony. A simple rule of this sort asserts that online testimony delivered in all-caps or with missing punctuation should be assigned relatively little weight. Alternative properties of written posts may instead signal thoughtfulness and reliability. As with the folk theory of unreliability in face-to-face communication, empirical study may complicate the folk theory of unreliability in online communication. However, so long as there are detectable cues to reliability for online testimony, discrimination has a role to play, alongside reflectiveness and selectiveness, in accounting for the credit deserved by users that form true beliefs from such testimony.

5. Concluding Remarks

I have argued that VR can account for a broad range of testimonial knowledge, albeit by invoking distinct bases on which credit might be assigned to recipients of testimony. In a slogan, the strategy adopted here is “divide to account for”. Such an approach might be resisted based on a general preference for unity. However, given the radically distinct forms testimony takes – embodied and disembodied, interactive and non-interactive, offline and online – it should not be surprising that diverse abilities underlie the competent acquisition of true belief through testimony.¹³

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