

## Testimonial Epistemic Rights in Online Spaces

### Draft – Please Cite Final Version

Kenneth Boyd

According to many theories of testimony, acts of testimony confer certain epistemic rights upon recipients, e.g., the right for the recipient to complain or otherwise hold the testifier responsible should the content of that testimony turn out to be false, and the right to “pass the epistemic buck”, such that the recipient can redirect relevant challenges they may encounter back to the testifier. While these discussions do not explicitly exclude testimonial acts that occur online, they do not specifically address them, either. Here, then, I will ask the following questions: do the differences between communicating in online and offline spaces affect our testimonial epistemic rights, and if so, how? While there is no singular “online space”, here I will focus on such spaces in which users communicate with one another, and in which communicated information can be vetted by other users (for example, social media). I argue that the characteristics of online testimony should make us think about testimonial epistemic rights differently, in two ways. First, whereas such rights have traditionally been conceived of as existing between the recipient and testifier, in many different types of online communication these rights exist between the recipient and a community. This is a result of the fact that online testimony is mediated, and in some cases partially determined by, a community of users. As such, testimonial epistemic rights in online spaces may be widely extended: while the original testifier still bears the brunt of responsibility for challenges, and is the primary buck-passee, all other members of the relevant community will also bear some such responsibilities. Second, the grounds of testimonial epistemic rights may differ in online spaces. Existing theories tend to ground such rights either in assurances provided by the testifier, or else norms that govern speech acts. I argue that testimony in online spaces should cause us to look to a third option, what I call norms of information sharing. The idea is that, given the highly social nature of online communication, a recipient acquires testimonial epistemic rights

in virtue of having a reasonable expectation that information that is shared and vetted by the community meets certain standards. The grounds of online testimonial epistemic rights, then, is not primarily interpersonal or norms-based, but social.

Philosophical discussions of testimony have been around a lot longer than the internet.

And while the observation that the internet has drastically changed the ways we communicate now borders on trite, differences between online and offline communication have not yet been fully appreciated in contemporary discussions of the nature of testimony. Here I want to try to fill a specific theoretical lacuna, that of the nature and grounds of *testimonial epistemic rights* online. Testimonial acts confer epistemic rights upon recipients, e.g., the right for the recipient to complain or otherwise hold the testifier responsible should the belief they formed on the basis of that testimony turn out to be false, and the right to “pass the epistemic buck,” such that the recipient can redirect relevant challenges to their belief they may encounter back to the testifier. But testimonial epistemic rights tend to be undertheorized in general, and have yet to be addressed at all in discussions of online testimony.

While there is no singular “online space,” here I will focus on a subset of online spaces in which there is communication among users, and in which communicated information is *mediated* by community members and technology, the quintessential example being social media. I argue that the characteristics of testimony in these spaces (what I will refer to simply as “online testimony” throughout) should make us think

about testimonial epistemic rights differently, in two ways. First, while testimonial epistemic rights have traditionally been conceived of as a relationship between recipient and testifier, I argue that while when testifying online these rights exist in a relationship among the recipient, testifier, and a *community*. This is a result of the fact that a community of online users partly determine epistemically relevant facts concerning testimonial acts. As such, testimonial epistemic rights in online spaces are *widely extended*: while the original testifier is still responsible for challenges and is a buck-passee, members of the relevant community will bear some of these responsibilities, as well.

Second, the *grounds* of testimonial epistemic rights may differ in online spaces. There are several competing theories concerning the grounds of *offline* testimonial epistemic rights: for example, some hold that they are grounded in our reliance on rational agents, or interpersonal relationships between testifier and recipient, or norms that govern assertive acts. I argue that the mediated nature of testimony in online spaces directs us to a different option, what I call *norms of information sharing*. The idea is that given the nature of online communication, a recipient acquires testimonial epistemic rights in virtue of having a reasonable expectation that information that is shared and vetted by the community meets certain standards. A consequence of this view is that while testimony may confer the same kinds of epistemic rights to recipients

both online and offline, they may have different grounds and extensions depending on the medium in which testimonial acts occur.

The paper proceeds as follows. In section 1, I discuss some of the major theories of the grounds of testimonial epistemic rights, and in section 2 I outline some of the most significant differences between acts of testimony that occur online and offline. In section 3 I argue that online testimony is mediated in an epistemically significant way, and in section 4 I show how theories outlined in section 1 are unable to account for the unique epistemic features of online testimony. In section 5 I propose a view which can account for these features, what I call the *norms of information sharing* view. In section 6 I conclude by mapping out some of the potential normative consequences of accepting a view in which testimonial epistemic rights are grounded in different ways in different spaces.

## 1. THE GROUNDS OF TESTIMONIAL EPISTEMIC RIGHTS

Say you ask me who won the baseball game between the Blue Jays and the Royals last night, and I tell you it was the Blue Jays. You don't have any reason to think that I'm lying, you know that I'm typically reliable when it comes to baseball information, etc.,<sup>1</sup> so you believe what I tell you. But it turns out I was wrong, and the result is that you've

---

<sup>1</sup> This "etc." should be taken to encompass any additional qualifications that you think need to be met for me to have a justified belief on the basis of a mundane, everyday instance of testimony.

acquired a false (if still justified) belief. In addition to your justified but false belief, you also seem to have acquired certain *rights*. For instance, although you believe something false, you have the right to *blame* me, or otherwise hold me accountable, for your false belief. You may also have acquired some additional rights, depending on what you've done since we talked. Say that before you found out that your belief was false, you passed the information I told you on to someone else. If this third party had information or concerns that you didn't, they might challenge the truth of your testimony. However, since you got your information from *me*, you are also within your right to *defer those challenges* to me: for example, you can respond to your challenger by saying, "Don't blame me, Ken was the one who said so!"

Since these are rights that have to do with the status of one's beliefs acquired via testimony, I'll call them *testimonial epistemic rights*. They sometimes go by different names in the literature: what I am referring to here as a right to "defer challenges," others have referred to as a right to "pass the epistemic buck," and a right to "blame" is sometimes referred to as a "right to complain."<sup>2</sup> I call them *epistemic rights* because they pertain to rights one has regarding one's beliefs, and to distinguish them from rights one has *all things considered*. For example, it may be that the act of deferring challenges causes one moral harm, or violates some other kind of norm, and thus while

---

<sup>2</sup> For recent work on epistemic rights conferred by testimony, see Moran (2005), Goldberg (2006, 2011, 2015), McMyler (2011, 2013), Nickel (2012, 2013), Faulkner (2011), Baker and Clark (2018), among others.

one still possesses the *epistemic* right to defer challenges, one does not possess this right all things considered.<sup>3</sup>

Conferring epistemic rights is also arguably *characteristic* of testimony as an epistemic source; in other words, testimony is *the* epistemic source in which one acquires epistemic rights to blame and pass the epistemic buck, rights one does not acquire when, for example, one forms beliefs via perception, memory, or inference. This is perhaps because when we rely on non-testimonial sources we are ultimately figuring things out for ourselves, while when we rely on testimony, we necessarily rely on the work that someone else has done to figure something out for us.<sup>4</sup> This is not to say that forming beliefs via other epistemic sources does not ever result in one having other types of rights to blame. For example, say that you go to the park and see what appear to be cherry blossoms in bloom, and so you form the belief that there are cherry blossoms in the park on the basis of perception. What you don't know is that I've installed convincing-looking cherry blossom holograph emitters as part of an elaborate art exhibit, and so your belief is false (although justified). In this case, it seems that you

---

<sup>3</sup> While some classify what I am calling epistemic rights as *moral* rights (Vermaire 2020), I worry that this obfuscates the issue, precisely when it comes to considering what one's rights are all things considered. It is also not obvious that, say, acquiring a false belief constitutes any *moral* basis for blame or passing the buck.

<sup>4</sup> A reductionist about testimonial justification might balk here, in that they believe that testimonial justification is reducible to other forms of justification, and that ultimately it is still sources attributable to the recipient that produce it—i.e., perception and inference. Regardless, even reductionists will have to admit that testimony is such that it necessarily originates in someone else. For a discussion of arguments concerning the reductionism/nonreductionism debate and the characteristic nature of testimonial epistemic rights, see Baker and Clark (2018).

have *some* kind of right to blame me for the fact that you believe something false. But the blame is of a different kind: you can blame me for creating the conditions that have led to your acquiring a false belief—I am *causally* to blame, or perhaps *morally* to blame, depending on the circumstances—but not in the sense that I have done shoddy epistemic work for you—I am not *epistemically* to blame.

While the distinction between different kinds of blame is easy to state, it's not always easy to determine what kinds of rights we, as recipients of testimony, possess (this is an issue I will return to in section 4). To help clarify the issue, what is needed is a theory of the *grounds* of testimonial epistemic rights: we need to figure out in virtue of *what* a recipient acquires testimonial epistemic rights. Despite their importance as a characteristic of testimony, testimonial epistemic rights are generally undertheorized in the literature. One potential reason is that it's not clear where, exactly, they fit within existing debates. For instance, given that they are characteristic of testimony, we might think discussion of testimonial epistemic rights belongs in theories of the metaphysics of testimony, i.e. in debates about what constitutes a testimonial act. One might also think, though, that given that testimonial epistemic rights are *epistemic* in nature that they should be part of discussions of testimonial justification. Indeed, some theories of testimonial epistemic rights portray them as being tied up with theories of testimonial justification, while others separate them.

An example of a latter view comes from Goldberg (2006), who argues that “what generates the hearer’s right to pass the epistemic buck is not any testimony-specific epistemic principle” but is instead “generated rather by the key features at play in cases in which one rational being relies on the authority of another rational being, in the course of shaping its beliefs” (134). This view is meant to underscore the difference between reliance on *agents* and reliance on *instruments*, which are things that we appeal to for information but are not subject to the demands of rationality in the way that agents are. Given that agents are subject to such demands, we are entitled to expect them to fulfill said demands when relying on them for information. The view that Goldberg (2006) defends thus grounds testimonial epistemic rights in the reliance on rational agents:

Agent: In relying on a rational being’s testimony, one is relying on that being to have lived up to her relevant epistemic responsibilities. (136)

Goldberg argues that a benefit of this view is that it accounts for the distinctiveness of testimony as an epistemic source without having to take a stance on the debate between reductionism and nonreductionism (i.e., the debate as to whether testimonial justification is reducible to justification from other sources, or whether it is a *sui generis* source, respectively). On this view, one’s testimonial epistemic rights are grounded on the expectation that a testifier has fulfilled their “epistemic responsibilities”—whatever



those should consist of—which makes no commitments about how testimonial beliefs are justified.

Another, related view grounds testimonial epistemic rights in the testimonial *act* itself. For example, Fricker (2006) argues that rights to believe testimonial acts are a “public good” (598): a testifier cannot simply pick and choose upon whom one confers epistemic rights, and thus it is in virtue of the nature of the act itself that such rights are conferred upon anyone who receives it. Goldberg (2015) presents a similar view: on this account, it is the fact that assertive acts are *norm-governed* that makes it such that those who are on the receiving end of such acts acquire epistemic rights. For example, one much-discussed view holds that knowledge is the norm of assertion, i.e., that one ought only to assert what one knows:<sup>5</sup> if one accepts this view, the argument goes, then anyone who is on the receiving end of such an act has the right to expect that the asserter knows what they are asserting. Let’s call these views *act* views of testimonial epistemic rights:

*Act.* Testimonial epistemic rights are conferred upon anyone who is a recipient of an act of testimony in virtue of the norms that govern that act.

Like *agent*, *act* assumes no particular theory of justification in positing a theory of the grounds of testimonial epistemic rights: regardless of how testimony justifies, *act* says that it is the norms that govern the testimonial act itself which ground said rights.

---

<sup>5</sup> Much has been written about the norms of assertion. See, e.g., Brown (2008), Adler (2009), Turri (2016), Tebben (2021).

Other views conceive of the relationship between rights and justification as more closely related. For example, *interpersonal* theories of testimonial justification state that justification is conferred as a result of the relationship between testifier and recipient, one in which a testifier offers their assurance to their audience, or otherwise guarantees their audience that the content of their testimony is true.<sup>6</sup> In addition to justifying, the assurance or guarantee that is provided by a testifier may also ground testimonial epistemic rights. For instance, according to such views, it is precisely because I took responsibility for the truth of what I told you when I testified that you are entitled to defer challenges to me, and blame me if your belief ends up being false. In this way, testimonial acts are able to confer rights in virtue of their involving a commitment, and commitments are the kinds of things that establish a normative relationship that entails rights to blame and pass the buck.

While interpersonal theories come in all shapes and sizes, we can call these kinds of views in general *interpersonal* theories of testimonial epistemic rights:

*Interpersonal.* Testimonial epistemic rights are conferred in virtue of the relationship between testifier and recipient (i.e. in which a testifier assumes responsibility, makes a commitment, etc., to the recipient).

Different theories of the grounds of testimonial epistemic rights will result in those rights being extended to different recipients, and in different ways. For example,

---

<sup>6</sup> See for instance, Hinchman (2005), [AU: There is no Moran 2006 in the references; there is a Moran 2005. Please advise. – Should be 2005] Moran (2005), McMyler (2011, 2013), Lawlor (2013).

according to *interpersonal*, recipients who have received a guarantee or commitment from the testifier will acquire testimonial epistemic rights; according to *act*, however, such rights will extend to any recipient of the act, regardless of their relationship with the testifier. Depending on how we conceive of the responsibilities of a rational agent and the norms of testimonial acts, *agent* and *act* may also dictate that testimonial acts confer testimonial epistemic rights to different parties in different circumstances. For example, if knowledge is the norm of assertion (say) but the demands of rational agenthood fall short of having a responsibility to know, *act* will again end up conferring testimonial epistemic rights in more situations than *agent*.<sup>7</sup>

I will look at these theories of testimonial epistemic rights in more detail in what follows. Before getting there, I want to note some tacit assumptions about testimony that have been made so far. First, while testimony is often portrayed as a speech act, it can take the form of written words and potentially other forms of concretized assertive acts (e.g., gesturing); I take it this is uncontroversial. Second, while testimony is often discussed in terms of actions occurring between individual testifiers and recipients, it need not: most obviously because one can testify to multiple recipients simultaneously, and perhaps less obviously because non-individual agents in the form of groups are plausibly capable of testifying, as well. Third, although seldomly stated explicitly,

---

<sup>7</sup> Interestingly, since *act* says nothing about *who* is performing the act of testimony, it also does not, in principle, preclude non-agents from being testifiers (e.g., it allows for the possibility of there being instruments that are capable of testifying, contra *agent*).

testimony is generally presented as acts that occur “offline”; i.e., between individuals face-to-face, or in words written down in a physical book, etc.

*Online* testimony, however, is clearly a common occurrence. Online testimony is likely not omitted from many contemporary discussions on purpose, but simply because there is an assumption that the nature of testimony is fundamentally the same regardless of whether one is online or offline. But this assumption, I argue, is too quick. This is because when considering the relevant epistemic features of testimony offline, the default assumption is that it is a *binary* relationship: there is a testifier who bears epistemic responsibilities by testifying, and a recipient or recipients who acquire testimonial epistemic rights. However, this is not necessarily the case, I will argue, when it comes to testimony in online spaces (or at least certain online spaces): such spaces are *mediated* in an epistemically relevant way, in that testimonial acts originate in agents, but for which a community of users (and possibly technological factors) is also epistemically relevant. The relevant epistemic relationship for online testimony thus consists of three relevant parties: testifier, medium, and recipient. This difference, I argue, gives us reason to think differently about the grounds of testimonial epistemic rights in online spaces.

## 2. ONLINE TESTIMONY

At first blush, there is no need to develop a specific view of online testimony. It seems that people perform and receive testimonial acts online much in the same way that they do offline: e.g., talking to you face-to-face is not much different than talking to you via webcam, microphone, and meeting software, and reading words written in a physical, offline medium is not that much different from reading social media posts, comment sections, blogs, etc. If testimonial acts are essentially the same online as offline, then theories of testimonial justification and testimonial epistemic rights would also apply just as much online as they do offline.

This is not to say that the world of online testimony is perfectly analogous to the offline. There are debates, for example, about whether certain acts made possible (or at least more prominent) by social media constitute assertive acts. For instance, Marsili (2021) considers acts of "retweeting," but argues that they do not constitute assertive acts (although see Rini [2017] for a potentially different interpretation). Retweets are unique to the Twitter platform, which makes them unique online acts, even if they do not qualify as assertions but rather just things-one-can-do-with-words. Other online actions may also be up for debate in terms of their status as assertive acts: for instance, acts of "liking" or reacting to posts have some communicative value, although it's not clear whether they can rise to the level of assertions. Other than some of these idiosyncratic online acts, though, is there anything about the online world that would lead us to believe that testimony somehow works differently there? I argue that there is,

but that we need to make some distinctions to see how. First, we need to figure out what it means to talk about the “online world.”

Although when talking about the internet we often make a distinction at the level of “online” as opposed to “offline,” there is no singular homogeneous online space, at least when it comes to the possibilities for testimony. In many of these spaces there does, in fact, appear to be no relevant epistemic differences between online and offline testimony. For example, reading a book online is different from reading a physical book, but one presumably acquires just as much knowledge or just as justified of beliefs when reading either, and presumably in the same way; the mere fact that a book has been digitized has no epistemic significance. Similarly, talking to someone face-to-face is different from talking to them via video call—for instance, one might be able to acquire less information about a testifier due to constraints imposed by the technology that restricts bodily movement, and one typically experiences less “social presence” when communicating via screen, etc. (Sia et al. 2002)—but there again does not seem to be any epistemic significance when it comes to testimony delivered via speech act that travels through the air between two people and one that has to take the further steps of traveling through wires.

What is perhaps more important than identifying the characteristics of any uniform online space, then, is to consider whether there are any unique features of certain aspects of online communication that have epistemic consequences. For example,

several authors have theorized about the epistemic significance of specific websites like Wikipedia, including whether Wikipedia entries constitute acts of testimony and if so, then who is doing the testifying.<sup>8</sup> The kind of mass collaboration that is required for Wikipedia is technically possible in offline spaces, it would just be a lot more difficult. Massive group testimony may then be more *common* in online spaces than offline, but again does not seem to represent a unique feature of online testimony.

An additional feature of online communication that has received a lot of attention in work in computer-mediated communication is the potential for anonymity and *pseudonymity* (i.e., communication that takes place under the guise of a pseudonym, such as a username). Many of these discussions emphasize the negative social consequences of being able to post information online without fear of reprisal, but there are potentially epistemic consequences, as well. For instance, if one is a reductionist about testimonial justification, it may be more difficult to account for the possibility of acquiring justified beliefs on the basis of anonymous testimony, given that one does not know anything about the reliability of the testifier. Similarly, interpersonal theories of testimonial justification (which tend to be nonreductionist in nature) may also find it difficult to account for testimonial justification acquired from anonymous or pseudonymous sources: depending on how one conceives of the view, it is arguably

---

<sup>8</sup> See, e.g., Tollefsen (2009), Niederer and van Dijck (2010), and Thompson and Hanley (2017).

difficult to establish the right kind of interpersonal relationship between a recipient and testifier when the latter is completely anonymous. But again, one might think that anonymous or pseudonymous communication online is not really that much different from, say, reading a book by an unknown author offline. How one might be able to acquire justification from such a source is a detail to be worked out within a given theory; but again, the anonymity and pseudonymity that is prevalent in online spaces are perhaps not unique in terms of epistemic consequences.

There is one type of online space that does seem to have unique epistemic features, namely *social media*. It's clear that communicative acts are performed on social media: individuals post content on a given platform and it is read and received by an audience. It also seems clear that such acts rise to the level of assertions, and can confer testimonial justification and knowledge: we believe, can be justified in believing, and know the content of testimonial acts performed on social media. But many social media communications differ from traditional offline communications in that they are *mediated*.

How online testimony is mediated will no doubt be familiar. For instance, it is oft-discussed how algorithms, for better or worse, in part determine which information we receive on social media; in this sense, our information-seeking habits are mediated by technology. Information is also mediated by the relevant community, in at least two significant ways. First, community norms determine which information is permissible to



communicate on a given platform, and are enforced by programs and users. Second, community members themselves mediate online testimony by performing actions that both in part determine how information is interpreted by algorithms and adds or removes perceived credibility from information that recipients encounter. Most commonly this mediation takes the form of *endorsement mechanisms*, mechanisms that are used to signal a vote in favor or opposition to content, viz. “likes,” “hearts,” “upvotes,” etc., with the most highly endorsed information being spread to a larger number of users. Which testimony we receive via social media, then, is not solely determined by the actions of an individual testifier or recipient, but is mediated by additional communal and technological factors.

These mediators, however, along with other features of online testimony, produce a different epistemic relationship between recipients, testifiers, and testimonial acts. For example, research has indicated that when evaluating information online we are heavily reliant on endorsement, with information that has been highly endorsed being more readily accepted and deemed more reliable (Lim and Van Der Heide 2015; Willemsen et al. 2012). One reason why endorsement plays such a significant role in online spaces is due to the lack of other cues to determine credibility—when dealing with anonymous or pseudonymous sources in particular we have little else to go on beyond information contained in the text itself, and thus look to additional factors outside of it—and because we are particularly cognizant of the potential for *manipulation* online. The ease

with which users can intentionally misrepresent themselves online is an important aspect of online testimony: in mundane cases of testimony in offline spaces, we often have more knowledge about who we are receiving testimony from, and while it is certainly possible that people can misrepresent themselves as being more credible or knowledgeable, it is significantly easier to do so online.

For example, Metzger et al. (2010) found that as a result of a lack of information about testifiers and the possibility of manipulation, users online employed strategies that sought out different cues of credibility. In general, when attempting to determine the credibility of others, individuals will seek out credentials that are the least susceptible to manipulation (Walther et al. 2009): for example, Flanagin and Metzger (2013) argue that when online, individuals will look for “signals that are difficult to fake, are supported by the rule of law or social convention, or are costly to obtain or to mimic” (1627). Again, in online environments, one such credential that is most readily available comes in the form of aggregate endorsements: this is because as endorsement aggregates it becomes more and more difficult to manipulate, and any potential subjective biases in the ratings of individuals and information will have less of an effect on endorsement overall (Flanagin and Metzger 2013).

Of course, this is not to say that users online blindly accept whatever information happens to have the most likes on their social media feed: other contextual information is taken into account when determining whether information is credible (for example,

whether a post is satirical). While there's much more that could be said about the various ways in which endorsement and other mechanisms are employed online, what's important for my purposes here is that we are highly reliant on community members when assessing the credibility of online testimony. An emphasis on the role of the community is also accompanied by a de-emphasis on the role of the individual testifier. For instance, research in computer-mediated communication has found that social media environments, in particular, have the potential to produce *deindividualization*, such that a "person experiences reduced self-evaluation in the context of a group, often leading them to behave with less constraints" (Brady et al. 2020, 990). The emphasis on group membership in the context of social media means that even when there is neither complete anonymity nor pseudonymity—i.e., in cases in which people still use their real names and pictures for their profiles—people will still self-categorize as part of the group rather than as an individual. This is theorized to stem from the greater psychological distance that exists online, a distance that makes people emphasize group norms over individual norms (Ledgerwood and Callahan 2012), such that "information exchange is more likely to be governed by concerns related to a broader group identity rather than concerns of any one interpersonal relationship with face-to-face interactions" (Brady et al. 2020, 990). A decreased emphasis on the identity of individuals when exchanging information on social media again suggests that, at least in some cases of testimony in online spaces, as recipients of testimony we are less concerned

with our relationship with the individual testifier, and more concerned with our relationship with the community.

So far, we've seen that the ways that testimony is mediated in online spaces results in recipients being in a different kind of relationship with testifiers and the content of their testimony. This mediation, I argue, has important consequences for the grounds of testimonial epistemic rights online because it is *epistemically significant*. I turn to this next.

### 3. CAUSAL AND EPISTEMIC MEDIATION

To say that online testimony is "mediated" by the factors discussed so far can mean two different things. First, online testimony is *causally* mediated by technological and community factors in the sense that these factors partly determine which testimonial acts one receives. In this causal sense, these factors are analogous to certain offline factors that amplify some acts of testimony over others, viz. famous and popular voices get heard while obscure ones don't; papers in journals that are considered prestigious get read while others get passed over; etc. Accompanying these causal mediating factors there is thus a kind of causal responsibility that can be extended to agents (and potentially instruments) when it comes to both offline and online testimony, should one's testimonial belief turn out to be false (recall the blame that may be directed toward the installer of the holographic cherry blossoms).

In addition to being *causally* mediated, online testimony is also, I argue, *epistemically* mediated. In this sense, the factors that mediate testimony do not merely cause which testimonial acts one receives, but also partially constitute the reason a recipient has to accept it. For example, in a mundane case of offline testimony I might accept what you tell me because I believe you are trustworthy, knowledgeable, reliable, etc.; all of these facts about you are reasons I have for believing you, and at least in part determine whether my belief is justified. Now compare a mundane case of online testimony: I see a post on my social media feed of choice, which claims that the Blue Jays beat the Royals last night. It has a lot of likes and a lot of engagement in the form of comments (although I might not read them). As a baseball fan, I follow a lot of baseball accounts, although this post comes from a source I don't recognize. However, the fact that it is so high up on my feed, and so highly endorsed, makes me confident in my belief that the Blue Jays beat the Royals last night. Indeed, the identity of the original testifier may well be inconsequential: we've seen that given the kinds of factors that online recipients consider, it may very well not be important who posted the information, and I can still be confident in believing it.

Note how my reasons for forming a belief on the basis of an act of online testimony are different from what they would be for an act of offline testimony. In the online case I know little to nothing about the testifier, and so my reasons do not pertain to the testifier themselves. That I accept testimony that is selected algorithmically and

highly endorsed shows that it is not primarily the work of the original testifying agent that is epistemically relevant, but instead factors pertaining to the community. These factors need not be explicitly *evidential* in nature, either: for instance, one does not necessarily need to *infer* from a high endorsement and prominent place in one's feed that a given instance of online testimony is trustworthy and thus should be accepted. Rather, it is the mere fact of it existing in that place and being presented to them that is significant and provides reason to accept it. In the way that interpersonal assurances need not provide *evidential* reasons to accept a given instance of testimony, the fact that one comes across an instance of online testimony at all can constitute a kind of assurance by the community.

Note also how the case of online testimony I've described is perfectly mundane: we go online, check our various feeds, read information, and believe it. This is not, of course, *exclusively* how we engage with online testimony: we follow people we know and accounts that we trust, and these cases may more closely parallel those of offline testimony. However, there remains a significant class of online cases in which the identity of the testifier is significantly less important than in offline testimony.

How do epistemically relevant factors mediating online testimony affect our testimonial epistemic rights? Let's first consider one of the epistemic rights recipients acquire in offline testimony, namely the right to blame. If we discover that a belief we formed on the basis of online testimony is false it seems that we also acquire a right to

blame, but who? In the case of offline testimony, we place the blame on the testifier themselves. Blame is thus *localized* to the testifying agent. In cases of online testimony, however, our patterns of blame go beyond the testifier to encapsulate the community (and potentially the technological factors that underlie a given online platform). Again, we've seen that information that is algorithmically privileged in a social media feed or search engine results page appears to be more trustworthy and reliable, that endorsement from the community contributes significantly to the perceived trustworthiness of information and its source, and this endorsement contributes to its algorithmic privilege. This well-known feedback loop in the propagation of online information is arguably responsible for many of the internet's epistemic transgressions, e.g. the proliferation of false and misleading information online. We also see in discussions of these problems that much of the blame is passed on to communities and platforms: platforms are blamed for not doing enough to stem the tide of misinformation, and communities are blamed for endorsing false information. It seems, then, that we do hold more than just individual testifiers online responsible for acts of testimony. If our patterns of blame extend beyond individual testifiers, then that is an indication that responsibilities extend, as well.

What's important for the discussion here is that the salient factors online that determine whether one will accept a given piece of testimony may not have anything to do with factors pertaining to the testifying agent—e.g. how they formed their belief,

whether they are knowledgeable or have expertise, etc.—but with external factors determined by algorithms and the community—whether that testimony is prominent in search results or social media feeds, whether it is highly endorsed, etc.<sup>9</sup> Again, this is especially the case when the anonymity or pseudonymity of online sources of testimony precludes one’s ability to evaluate the testifier for trustworthiness themselves. In online testimony, then, epistemic blame is *extended*: it is appropriately attributed not only to the testifier but more broadly to the community that endorsed it and gave it prominence.

Why not think, though, that the blame that we extend to community members (and potentially technological factors) is of a merely *causal* variety? For instance, we might say that poorly calibrated algorithms *caused* false information to be pushed to the top of a feed, and subsequently widely accepted and propagated, and that high levels of engagement and endorsement *caused* the information to seem more credible by providing evidence that many people think it’s true (or at least like). Perhaps it is still the individual testifying agent who is *epistemically* to blame, while additional factors are merely to blame in a causal sense.

---

<sup>9</sup> There are doubtless factors that are external to an agent in the offline world that also affect how we view them as trustworthy, i.e. how popular they are, whether they are accepted by a community of experts, etc. Is this not analogous to the online case of trustworthiness as seen via endorsement of the community? Perhaps. If so, however, these similarities speak against views like *agent*, as again it seems that we would be more likely to blame, say, the scientific community for false beliefs rather than just the individual scientist who initially put them forth.



There is no doubt that these factors do play a causal role, but that does not preclude them from playing an epistemic role, as well. After all, individual testifiers in offline testimony also play a causal role in a recipient's formation of a belief in addition to an epistemic one, given that testifiers create the conditions needed for testimonial belief to occur by performing acts of testimony. As we have seen, given the potentially insignificant role of the original testifier in online testimony, the primary impetus for someone accepting a given piece of testimony may not pertain to anything to do with the original testifying agent, but rather the prominence of the information and the endorsement of the community. The most epistemically relevant feature of an instance of online testimony of this sort would thus be the work not of an individual testifier, but that of the community.

Here I have talked about the right to blame when it comes to online testimony, and argued that recipients possess this right not only toward the original testifier, but the community where that act of testimony takes place. What about the right to defer challenges (or "pass the epistemic buck")? In cases of offline testimony, we saw that a recipient possesses this right toward the individual testifier. How do the epistemically relevant mediating factors in online testimony affect this right? Here I think it also extends beyond the individual testifying agent. Consider again the case of reading about the baseball score on social media: should I be challenged on my belief, I can defer the challenge back to the source, perhaps by pulling up my social media page and

showing it to my challenger. But I will likely not have any individual testifier in mind when doing this; instead I will be appealing to the authority bestowed by the community upon the information that I read. When challenged on a belief formed on the basis of online testimony, then, a natural response is not to say “hey, don’t ask me, ask so-and-so,” but instead something along the lines of “hey, don’t ask me, look it up on such-and-such website yourself.”

In this section I have argued that online testimony is mediated by factors different from those that mediate offline testimony, and that a consequence is that recipients possess epistemic rights that apply not just to the individual testifier, but to the community in which that testimony was presented. Given these differences between online and offline testimony, how do the theories that we explored in section 1 fare? I address this next.

#### 4. OFFLINE GROUNDS AND ONLINE TESTIMONY

In section 1 we saw three main theories of testimonial epistemic rights: *agent*, *act*, and *interpersonal*. None of these theories, I argue, adequately accounts for testimonial epistemic rights received online. First, that online testimony is mediated by parties outside of the testifier and recipient suggests that testimonial epistemic rights are not solely grounded in our expectations of the behavior of an individual rational agent. *Agent*, then, does not fully capture the grounds for online testimonial epistemic rights.

If our relationships with agents differ online, it stands to reason that the kinds of *interpersonal* relationships that we have with those online may also be importantly different from the kinds of interpersonal relationships that we have offline. Again, this is not to deny that we *can* have the same kinds of interpersonal relationships with testifiers online that we have offline, in cases in which the online medium plays a merely causal role (for example, if my friend tells me something face-to-face, I can be justified in believing their testimony because of a mutually recognized provision of assurance and/or assumption of responsibility, and there does not seem to be any relevant epistemic difference between that case and one in which the same testimony was delivered via email, video call, etc.). And while there are well-researched differences between the ways we interact with others online as compared to offline,<sup>10</sup> we might still think that the kinds of interpersonal relationships that we establish online are capable of providing testimonial justification and grounding testimonial epistemic rights. After all, authors of books can meet the standards of theories of interpersonal testimonial justification since the writing of a book for public consumption constitutes a provision of assurance to whoever reads it, and the reader can recognize that such a provision has

---

<sup>10</sup> I've argued elsewhere that these factors are particularly important when it comes to the ways that we trust experts online, as an overall dearth of information about the relevant expert online and the possibility for manipulation of traditional markers of expertise cause us to turn to different types of markers of expertise (see Boyd 2022).

been made. What's important for *interpersonal* is the provision and recognition of assurance, one might argue, not the medium in which it is made.

My worry with *interpersonal*, however, is that when it comes to testimony that has been mediated online our default expectation is not just that an individual testifier provides assurance or assumes responsibility; rather, given our reliance on the community and the lesser importance of individual identities online, we would expect such a responsibility to fall to the community (and maybe the platform) instead. Again, consider cases of online testimony from someone whom we know nothing about, and for whom the identity of the testifier is inconsequential. If there's any assurance we rely upon, it is that provided by the community of users who endorsed the content of that testimony, not that from the testifier themselves. Of course, there will be other cases in which we still find the original testifier primarily to blame, where the community bears less responsibility. For example, a bad actor online who spreads falsehoods does not get off the hook simply because their testimony is highly endorsed and promoted. The criticism of *interpersonal* under consideration here, though, is that it is not the relationship between testifier and recipient that is the sole determinant in establishing testimonial epistemic rights online. The motivation for *interpersonal* is much clearer when there are only the two relevant parties involved—testifier and recipient—but with additional mediating factors, there is reason to think that the relevant relationships involve other parties, as well.

Perhaps, though, *interpersonal* can accommodate the differences between online and offline testimony. Say that we accept that the primary relationship involved in online testimony is not one that exists between individual agents, but between a recipient and a community of agents. One might then think that testimony that is mediated online by a community of users is not essentially any different from testimony provided by a *group*. Defenders of *interpersonal* could then say that assurances that ground testimonial epistemic rights online either come from a collection of agents that comprise a group, or that the group itself constitutes an agent capable of providing assurance. A similar response could be provided to defend *agents*: if we think of epistemically mediated testimonial acts as acts of group testimony (instead of individual testimony that is mediated by community members) then a defender of *agent* could claim that our testimonial epistemic rights online are grounded in our expectation that *group agents* fulfill their epistemic responsibilities.

However, I think there is reason to resist this interpretation. First, it isn't clear what the relevant group would consist of in a standard case of online testimony. There are questions about the metaphysical requirements of group-ness that are relevant that I will not get into here; suffice to say that in cases of online testimony, the individual agent and community members would only be connected in the loosest of senses, and so it would be difficult to make a case that they comprise a group that is itself capable of testifying. Second, we seemingly don't treat mundane instances of online testimony

in the way that we treat testimony from groups. For example, compare how I rely on group testimony to learn about baseballs scores, say when I rely on the official account of Major League Baseball: I treat this kind of group much in the way that I would treat an individual testifier, in that I accept their testimony because the group is known to be reliable, trustworthy, and knowledgeable. There is little reason, then, to think that mundane online testimonial acts are performed by group agents as opposed to individual agents.

Finally, consider the *act* theory, which holds that testimonial epistemic rights are grounded in norm-governed assertive acts. As we saw above, according to this view a testimonial act is a “public good” that extends rights to anyone who receives them. Such a view would seem to be particularly amenable to accounting for the rights conferred by online testimony, given that there is no special interpersonal relationship required, nor anything specific to the nature of the agent themselves that grants testimonial epistemic rights. Online spaces are, after all, typically open and public spaces.

The mediated nature of online testimony, however, muddies the water when it comes to norms of assertive acts. There are two relevant questions that can be asked when it comes to norms that govern online assertive acts: first, whether the same norms that apply offline apply online; and second, to whom the norms of assertion apply. To see why these questions need to be asked at all, consider an instance in which someone asserts something that is based on poor reasoning and limited evidence in an offline

context. In this case, one will likely judge that a norm of assertion has been violated, and that the asserter should be held accountable. Consider now a case of an online assertion: someone makes an assertion on a social media platform that is based on poor reasoning and evidence, but it's highly endorsed by the community and made prominent by an algorithm. An epistemic violation has occurred, but what kind, and by whom?

Here again, we have reason to think that a violation has been committed not only by the asserter but by the community that has mediated that assertion. A perhaps radical interpretation of online assertion is that the norms for asserters online are weaker than those for asserters offline because of mediating factors that exist online (I think this is an interesting possibility, but not one I will pursue here<sup>11</sup>). However, given that norms of assertion are taken to not only *govern* assertions but are also *constitutive* of the act, this view would require that online and offline assertions are fundamentally different things. I think this bullet may be too difficult to bite. If we do hold that the epistemic standards of assertion are the same online as they are offline, however, then the *act* view is seemingly unable to account for the extension of epistemic blame

---

<sup>11</sup> Consider how we hold children to different standards than adults concerning the same acts: this is partially because children often do not know any better, but also because we take responsibility for the child's action to fall at least in part to the parent. Analogously, we might think that asserters online are held to different standards because the responsibility for those assertions partially falls to the community that mediates their assertions. Of course, we might also think that children are subject to the same rules but that they are not always blamed for violating them. Figuring out when our judgments are indicative of finding someone blameless and finding them to be subject to different rules can be a complex normative puzzle that I won't try to solve here (but have addressed elsewhere; see Boyd 2015).

beyond the individual asserter, given that norms of assertive acts apply only to said asserter.

So far, I have argued that there are important differences between online testimony and offline testimony and that existing theories of the grounds of testimonial epistemic rights do not adequately account for the way that we acquire online testimony, nor how we exercise our epistemic rights granted by online testimony. That the bearer of the brunt of responsibility for testimonial epistemic rights differs online suggests that we might look elsewhere for the grounds of testimonial epistemic rights.

## 5. Norms of Information Sharing

Given the discussion thus far regarding the differences between online and offline testimony, I propose that we look for the grounds of online testimonial epistemic rights elsewhere:

Norms of Information Sharing (NIS): Online testimonial epistemic rights are conferred upon a recipient in virtue of norms that govern how agents who are highly reliant on one another to learn things about the world share information.

According to *NIS*, testimonial acts are necessarily those in which information is shared, and take place in a context in which the way such information is shared involves the cooperation of agents beyond the individual testifier and recipient. That such norms exist is predicated on the fact that online acts of testimony take place in a context in which people are both highly reliant on one another for information, and in which other



members of the community are epistemically relevant, i.e. their input partially constitutes the reason one has for accepting the content of an act of testimony. Online testimony is thus a communal endeavor, with corresponding responsibilities.

For example, consider a forum on a social media site in which people interested in space exploration come to chat and post information. Users are aware that their endorsement and engagement influence how information is received and deemed trustworthy, and since they want the information on the forum to be of a high quality, they face certain norms, namely to endorse quality information, and perhaps discredit information that is false or unsupported by evidence. Given that forum members are mutually reliant on one another for the sharing and monitoring of information, they thus face certain epistemic obligations. Of course, any individual who posts such information is also subject to these requirements: given that they are reliant on others for information, they are required to provide information that meets certain standards.<sup>12</sup> Furthermore, one need not be aware of the relevant norms to be subject to them (just as any asserter is subject to the norms of assertion regardless of their beliefs about them or lack thereof).

---

<sup>12</sup> Further specifics about what these norms might require may vary depending on what online spaces one finds oneself in. For instance, a forum consisting of experts who are discussing complex scientific issues may face very stringent epistemic demands: users who post information may be required to not just know the content of their testimony but have extensive data to support it, and community members may face stringent requirements for making sure that the relevant information is true.

How, exactly, do norms of information sharing guarantee the kinds of epistemic rights we have been discussing thus far, i.e., rights to defer challenges and to blame the testifier if one's belief is false? Here we can draw an analogy to other common norms that ground rights, namely the norms governing the sharing of physical goods. For example, consider a communal library, in which individuals in the area can borrow and contribute books for others to read. As a member of this community, one has the reasonable expectation that others will adhere to certain standards to ensure the continued good functioning of the library: that books be returned on time and in good condition, that one does not use it merely as a place to get rid of old books they don't want anymore, etc. The norms of sharing physical goods thus ground one's right to expect a certain quality of these goods, as well as to blame those for violating those norms.

By conceiving of acts of testimony as acts of information sharing, I argue, one is subject to comparable norms: in providing information, one's recipients have a right not just to information simpliciter, but information that is of a certain quality, i.e., that is true. Furthermore, given that the quality of commonly shared goods is a responsibility not just of the sharer and recipient, but of the community as well, one has rights with respect to the members of that community. If one thus acquires information in a context in which the norms of information sharing apply, then one thereby acquires a right to complain if their belief turns out to be false and to blame the testifier for providing

them with false information, as well as the community for failing to help ensure that false information doesn't get propagated.

*N/S* thus shares reasoning similar to that employed in an argument for *act*. Recall that this argument claims that given the norms that govern assertion, by performing an assertive act a recipient thereby acquires the right to expect that the testifier knows what they are saying and with it a right to defer challenges to them and a target for blame if their belief turns out to be false. Similarly, given that we rely on others not just for information simpliciter, but information of a certain quality, when one provides information, one is thus responsible for it being of that quality. *N/S* grounds testimonial epistemic rights not solely on the expectation that the testifier adheres to the norms that govern an act, but that their expectation is part of a larger set of expectations about how an epistemic community shares information, something that extends beyond the individual testifier. *N/S* thus grounds testimonial epistemic rights not in interpersonal or assertive norms, but in *social* norms, i.e. norms that govern how communities of agents rely on one another.

However, one might wonder how *social* norms can ground rights that are *epistemic* in nature. Note how analogous issues are addressed by other views: according to *act*, a characteristic of assertive acts is that they are governed by epistemic norms, and thus a performance of such an act confers epistemic rights in virtue of said norms; according to *interpersonal*, the nature of the particular relationship between testifier and recipient—

say, the offering of an assurance—is partly constituted by the shouldering of certain epistemic burdens, which in turn confers the right to have those burdens shouldered. I suggested above that *N/S* grants epistemic rights in virtue of our mutual reliance to share information. But how does such a reliance ground epistemic rights? Is there not a gap between norms that are *social* and rights that are *epistemic*?

The answer I am proposing here perhaps speaks to a general commitment about the nature of online testimony, namely that it is fundamentally social and communal. That people are mutually reliant when learning about the world is thus not simply a *practical* reliance, insofar as it would just be much more difficult to know as much as we do without relying on others. Instead, acquiring knowledge online *necessarily* involves reliance on others, in some form or another, and it is in virtue of our mutual reliance as epistemic agents that we undertake epistemic commitments toward each other. The result is that we are, by virtue of being members of a community of inquirers, burdened with epistemic responsibilities to others, in contexts that are norm-governed. There is thus no gap between the social and the epistemic.

*N/S* accounts for the extension of our testimonial epistemic rights, since the normative structure of such rights is that we are entitled to blame and pass the buck not only to the original testifier but to others in the community who bear responsibility for the quality of the relevant information. It can also account for how it is that the role of the individual testifying agent can be of reduced importance when determining those

rights: when community endorsement constitutes the bulk of one's reasons to accept the content of an act of testimony, the brunt of the responsibilities will fall to community members. While I have argued that existing theories of testimonial epistemic rights for offline testimony cannot adequately account for the rights conferred by online testimony, *N/S* can.

## 6. THE NORMATIVE SPACE

I've argued that norms of information sharing ground online testimonial epistemic rights in virtue of online testimony being an essentially social and communal endeavor. What, then, should we make of the differences between online and offline testimony? There are a few things we could say here. First, we might say that online and offline testimony are different enough that different normative structures ground testimonial epistemic rights in those spaces. I have not made this argument explicitly here—I have argued that the grounds of epistemic rights for online testimony differ from those that have been proposed for offline testimony, which is compatible with either the position that online and offline testimonial rights are grounded by different factors, or that existing theories are inadequate when it comes to accounting for offline testimonial epistemic rights, as well. Which of these routes should we take?

The former interpretation would entail a kind of pluralism about such rights, which, given the view that the granting of epistemic rights is characteristic of testimony as an

epistemic source, might then entail some fundamental differences between something called “online testimony” and “offline testimony.” This view may initially seem a bit outrageous, but there is reason why it might not be so out there. Consider the diversity of our relationships with testimonial acts. The debate between reductionists and nonreductionists, for example, tends to discuss very different scenarios in which we rely on others for information: one typical example involves relying on a trusted friend whom we know a lot about, while another involves asking a stranger on the street for the time, or directions, or what have you, and philosophers argue about whether theories of testimonial justification make us too gullible or too credulous. Here I have avoided going too deeply into theories of testimonial justification, but we can see how significantly different cases are also appealed to in theories of testimonial epistemic rights: cases in which we listen to a trusted friend differ significantly from those in which we read something by an author we know little about, or—as in the cases I discuss here—in which we read something by someone we don’t know and whose identity is largely irrelevant. Perhaps, then, rights that we acquire in different circumstances are simply grounded in different factors: sometimes it’s because you’re a trusted person whose assurances I rely on, and sometimes it is that I rely on the reasonable expectation I have about people adhering to various norms.

The other option is that *N/S* grounds testimonial epistemic rights for all kinds of testimony. I mentioned above that there is no singular “online world” that encompasses

everything that we do online, and that there are many instances in which our relationship with testimony online is not in any relevant way different from our relationship with testimony offline. While the online spaces that I have described have been ones in which testifying individuals themselves play a diminished role when it comes to providing a recipient reason to believe a given instance of testimony, and in which the community (and possibly technology) that mediates testimonial acts is epistemically relevant, there are perhaps offline analogues. For example, peer-review is arguably a process in which information is mediated in an epistemically relevant way by individuals beyond the original producer of a work, i.e. by reviewers and editors, and in which the approval by the community and notoriety of the venue in which it is produced provides additional reasons to accept some given content. Again, the analogy is perhaps not a perfect one; the point is simply that just as we think of there being traditionally offline cases of testimony online, perhaps there are also structures that are typical of online spaces that also exist offline. If norms of information sharing can ground testimonial epistemic rights online, then, perhaps they can ground them offline, as well.

#### REFERENCES

Adler, Jonathan E. 2009. "Another Argument for the Knowledge Norm." *Analysis* 69(3): 407–11.

- Baker, Judith, and Philip Clark. 2018. "Epistemic Buck-passing and the Interpersonal View of Testimony." *Canadian Journal of Philosophy* 48(2): 178–99.
- Boyd, Kenneth. 2022. "Trusting Scientific Experts in an Online World." *Synthese* 200(14): 1–21.
- Boyd, Kenneth. 2015. "Assertion, Practical Reasoning, and Epistemic Separabilism." *Philosophical Studies* 172:1907–27.
- Brady, W. J., Crockett, M. J., & Van Bavel, J. J. 2020. "The MAD Model of Moral Contagion: The Role of Motivation, Attention, and Design in the Spread of Moralized Content Online." *Perspectives on Psychological Science* 15(4): 978–1010.
- Brown, Jessica. 2008. "The Knowledge Norm for Assertion." *Philosophical Issues* 18(1): 89–103.
- Faulkner, Paul. 2011. *Knowledge on Trust*. Oxford: Oxford University Press.
- Flanagin A.J. and Metzger M.J. 2013. "Trusting expert- versus user-generated ratings online: The role of information volume, valence, and consumer characteristics." *Computers in Human Behavior* (29): 1626-1634.
- Fricke, Elizabeth. 2006. "Second-Hand Knowledge." *Philosophy and Phenomenological Research* 73(3): 592–618.
- Goldberg, S. 2015. *Assertion: On the Philosophical Significance of Assertoric Speech*. Oxford: Oxford University Press.



- Goldberg, S. 2011. "Putting the Norm of Assertion to Work: The Case of Testimony." In *Assertion: New Philosophical Essays*, edited by Jessica Brown and Herman Cappelen, 175–95. Oxford: Oxford University Press.
- Goldberg, S. 2006. "Reductionism and the Distinctiveness of Testimonial Knowledge." In *The Epistemology of Testimony*, edited by J. Lackey and E. Sosa, 127–44. Oxford: Oxford University Press.
- Hinchman, Edward. 2005. "Telling as Inviting to Trust." *Philosophy and Phenomenological Research* 70(3): 562–87.
- Lackey, Jennifer. 2008. *Learning from Words*. Oxford: Oxford University Press.
- Lawlor, Krista. 2013. *Assurance: An Austinian View of Knowledge and Knowledge Claims*. Oxford: Oxford University Press.
- Ledgerwood, A., & Callahan, S. P. 2012. "The social side of abstraction: Psychological distance enhances conformity to group norms." *Psychological Science* (23): 907–913
- [Lim](#), Young-shin and [Brandon Van Der Heide](#). 2015. "Evaluating the Wisdom of Strangers: The Perceived Credibility of Online Consumer Reviews on Yelp." *Journal of Computer-Mediated Communication* (20): 67-82.
- Marsili, Neri. 2021. "Retweeting: Its Linguistic and Epistemic Value." *Synthese* 198:10457–83. [AU: Are these page numbers correct? – Yes (see <https://link.springer.com/article/10.1007/s11229-020-02731-y>)]

- McMyler, Benjamin. 2013. "The Epistemic Significance of Address." *Synthese* 190(6): 1059–78.
- McMyler, Benjamin. 2011. *Testimony, Trust, and Authority*. Oxford: Oxford University Press.
- McMyler, Benjamin. 2007. "Knowing at Second Hand." *Inquiry* 50:511–40.
- Metzger M.J., Flanagin A.J., and Medders R.B. 2010. "Social and Heuristic Approaches to Credibility Evaluation Online." *Journal of Communication* (60): 413-39.
- Moran, Richard. 2005. "Getting Told and Being Believed." *Philosopher's Imprint* 5:1–29.
- Nickel, Philip. 2019. "Assurance Views of Testimony." In *The Routledge Handbook of Social Epistemology*, edited by P. J. Graham and M. Fricker, 96–102. Routledge.
- Nickel, Philip. 2013. "Testimonial Right, Norms of Assertion and Privacy." *Episteme* 10(2): 207–17.
- Nickel, Philip. 2012. "Trust and Testimony." *Pacific Philosophical Quarterly* 93:301–16.
- Niederer, Sabine, and Jose van Dijck. 2010. "Wisdom of the Crowd or Technicity of Content? Wikipedia as a Sociotechnical System." *New Media & Society* 12(8): 1368–87.
- Owens, D. 2006. "Testimony and Assertion." *Philosophical Studies* 130(1): 105–29.
- Rini, Regina. 2017. "Fake News and Partisan Epistemology." *Kennedy Institute of Ethics Journal* 27(2S): E-43–E-64.

- Schmitt, F. F. 2010. "The Assurance View of Testimony." In *Social Epistemology*, edited by Adrian Haddock, Alan Millar, and Duncan Pritchard, 216–42. Oxford: Oxford University Press.
- Sia, C. L., B. C. Y. Tan, and K. K. Wei. 2002. "Group Polarization and Computer-Mediated Communication: Effects of Communication Cues, Social Presence, and Anonymity." *Information Systems Research* 13(1): 70–90.
- Tebben, Nicholas. 2021. "Selfless Assertions and the Knowledge Norm." *Synthese* 198:11755-11774. [AU: Is there a volume or issue number? - Updated]
- Thompson, Neil, and Douglas Hanley. 2017. "Science Is Shaped by Wikipedia: Evidence from a Randomized Controlled Trial." *MIT Sloan Research Paper No. 5238–17*.
- Tollefsen, Deborah. 2009. "Wikipedia and the Epistemology of Testimony." *Episteme* 6(1): 8–24.
- Turri, John. 2016. *Knowledge and the Norm of Assertion: An Essay in Philosophical Science*. Cambridge: Open Book Publishers.
- Vermaire, Matthew. 2020. "Retraction and Testimonial Justification: A New Problem for the Assurance View." *Philosophical Studies* 177(12): 3959–72.
- Willemsen L.M., Neijens P.C., and Bronner F. 2012. "The Ironic Effect of Source Identification on the Perceived Credibility of Online Product Reviewers." *Journal of Computer-Mediated Communication*(18): 16–31.