Social Epistemology and Cognitive Authority in Online Comments about Vaccine Safety

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Abstract
An attempt to understand misinformation, and particularly the role the internet might play in it, suggests an emphasis on how individual internet users decide what to believe. Given the social nature of the internet, an essential component of belief formation must be an evaluation of cognitive authority and the means by which any knowledge source claims to have it. A content analysis of user comments about vaccine safety reveals the evaluation of cognitive authority to be a rich and complex set of negotiations among internet users. Certain characteristics of the internet seem to enhance the experience of evidence evaluation in ways that complicate underlying assumptions about how people believe. While the internet would seem to be a collection of secondhand knowledge, it is also rife with exaltation of firsthand knowledge as a superior, and uniquely accessible, means of knowing.

Keywords: misinformation; social epistemology; cognitive authority; internet; vaccines


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1 Introduction

On the internet, anyone, regardless of credentials, motives, or honesty, can publish information to (potentially) the entire world. Likewise, the internet is increasingly replacing other media and information sources, including interpersonal ones (Case, 2007), especially for health information (Case; Warner and Procaccino, 2004). Intuitively, it seems as though this should result in more misinformation, spreading more quickly. Indeed, false rumors have been known to spread virally through platforms such as Twitter before they are ultimately corrected (Peters, 2012). To the extent that the internet may be unique in the production of misinformation, the popular belief seems to be that the reason for this is that the internet enables the “prosumer,” i.e. every information consumer is also a potential producer.

The first problem caused by the prosumer internet is one of information production and distribution. Since anyone can produce information quickly and easily, a great deal of information on the internet is produced by amateurs who may lack the credentials, expertise, or even desire to properly verify the information they create (Metzger, Flanagin & Zwarun, 2003; Rieh & Hilligoss, 2008), and who operate free of editorial oversight or quality control (Floridi, 1996; Hitlin, 2003; Keen, 2006; Metzger, 2007; Rieh, 2002; Rieh & Danielson, 2007; Swinnen, McCluskey & Francken, 2005). This is exacerbated by the ease of sharing on the internet. Anything consumed can rapidly be reproduced and propagated, which seems to result in a more rapid spread of misinformation than was previously possible (Hitlin, 2003; Kelly, 1997).

The second misinformation problem is one of consumption. On the internet, anyone can search for information and retrieve it, regardless of their information skills (Metzger, Flanagin &Zwarun, 2003; Metzger, 2007; Metzger, Flanagin & Medders, 2010; Rieh & Danielson, 2007). It is so easy for information consumers to find information on the internet that some consumers will not be able to tell good information from bad. Two other such explanations are, interestingly, contradictory. The more positive model proposes that the ease of access to internet information will make verification easier than ever before (Floridi, 1996). In this model, the internet results in less misinformation than, for example, the mass media, which was, prior to the internet, more difficult to verify. The opposing model is the bubble or echo chamber model, in which consumers so narrowly tailor their information consumption through filtering and personalization that they never encounter information that challenges or contradicts what they already believe (Floridi; Pariser, 2011; Sunstein, 2007). Hence in this model the internet makes misinformation worse. These contradictory claims that the internet makes misinformation both better and worse underscore the danger of monolithic, technologically deterministic explanations of the behavior of the internet, as opposed to the individualized experience of any particular internet user.
Hence the key to understanding misinformation may not be a focus on its production or its dissemination, but rather on how and why it is believed. It may or may not be true that we are producing more misinformation than ever. This may or may not result from the ease of its production and access, the rising number of producers, the lack of traditional gatekeepers, the speed of production and dissemination, or from the echo chamber of personalization filters. But if no one believes the misinformation then no one is misinformed, and hence of what consequence is it? It is reasonable to consider that while the internet may have changed how we produce information, how we search for it, and even what evidence we find, it may not have changed what we believe and why.

There is also a compelling epistemological reason to understand misinformation by focusing on belief. Most scholars define misinformation as information that is “false, mistaken or misleading” (Fetzer, 2004, p. 231), inaccurate (Fallis, 2009), or as otherwise fundamentally requiring falsity (Fox, 1983). Yet such a definition immediately meets with difficulties. Stahl (2006) points out that defining misinformation as incorrect information requires a correspondence theory of truth. If, however, the truth is socially constructed, as many have argued (Berger & Luckmann, 1967; Fallis, 2006; Sherratt, 2006; Van House, 2004), it follows that misinformation is socially constructed as well. This suggests that the naming of anything as misinformation is open to debate, and is not comprised of what is empirically true or false, but rather “what is collectively endorsed,” (Fallis, 2006, quoting Bloor; Van House). As a research question and a subject of empirical study, therefore, we shall focus not on the quality of evidence or its correspondence to reality, but rather on how people come to believe that something is true.

Beliefs in the truth of a claim are formed, fundamentally, from the evaluation of evidence. One encounters a piece of information, considers the reasons to believe or disagree that information, and decides whether or not to believe it. That decision is based on numerous factors, including the credibility of the source, the consistency with existing belief systems, and others. If beliefs are formed by evaluating evidence, and those evaluations are not always purely rational, then how are evidence evaluations conducted? How do people evaluate the information upon which they rely in forming particular beliefs? What evidence do they consider? Which evidence do they accept and which do they reject? What are their reasons for accepting or rejecting any particular piece of evidence?

1.1 The Case of Vaccine Safety Beliefs

A fruitful place to begin to answer these questions is to investigate controversies about science, particularly where the scientific consensus is strong and yet some hold beliefs in direct contradiction to it. As a case for studying evidence, science has the advantages of an explicit reliance on evidence, a thorough explanation of how it relies on evidence, and the claim made by many that it is the most reliable way of knowing. At the same time, the techniques and reliability of science have been widely debated. As a result, the role of evidence in science is the subject of a rich body of literature.

Hence this study focuses on the controversy over vaccine safety, investigating how parents form beliefs about whether to vaccinate their children. While the scientific consensus suggests that vaccines are safe, a significant number of parents nonetheless remain unconvinced, and each side of the debate accuses the other of spreading misinformation. At the same time, vaccines have enormous public health consequences, particularly in the face of the recent decline in vaccination rates (Lin & Poindexter, 2009; Mohajer & Kumar, 2011). In addition, the vaccine safety controversy has particular advantages as a means of studying misinformation on the internet specifically. Kata (2010) has found that anti-vaccination content is more common on the internet than elsewhere, that parents doubting vaccines are more likely to use the internet, and that the websites they use often misrepresent or omit medical research. Betsch (2011) has found that the internet can be particularly influential on beliefs about vaccination, that it exaggerates anti-vaccination information compared to the scientific consensus, and that anti-vaccine information is very easy to find. Hence there is reason to believe that vaccine safety beliefs may be uniquely influenced by the internet.

2 Methods

The focus of the study has not been to determine the correctness or incorrectness of any particular information, belief or claim about vaccine safety. Rather, the focus has been to understand what people believe about vaccine safety, pro or con, and in particular how and why they believe it.

In August 2013, two searches were conducted using the Google search engine, one using the query "vaccine safety" and one using the query "vaccines autism." All links in the first three pages of results were followed, and the resulting web page was saved as HTML and printed to PDF. During analysis, this initial material was supplemented using a kind of internet version of snowball sampling. When links within the original material appeared relevant, they were clicked and, if determined
to be relevant, downloaded and printed to PDF. Likewise, many times when the original data referred to external sources that seemed relevant, those sources were retrieved, and when claims were unsubstantiated or unrefuted elsewhere in the data, additional material was consulted in order to understand the consensus and controversy about those claims. This method resulted in the capture of 152 PDF files totaling more than 1500 pages, which were subsequently numbered consecutively. The captured data included formal websites of health organizations and advocacy organizations, blog entries, and news articles. While all of the data was subsequently coded, the most interesting and illuminating data was found in the comments posted on those websites by readers. Here, beliefs about vaccine safety are articulated and defended. This study makes the assumption that the evidence people use to justify their beliefs in an argument with others on the internet is the same evidence that they themselves find compelling.

Based on this assumption, a content analysis was performed on the collected material and coded in four rounds. The first round of coding highlighted two kinds of passages: those articulating or implying beliefs about vaccine safety and those articulating or implying means of evidence evaluation. These passages were marked regardless of whether they were pro-vaccine or anti-vaccine, and no such distinction was made at this stage. During this preliminary round, certain patterns began to emerge. Several categories of beliefs about vaccine safety – what people believe – were identified, as were several categories of evidence evaluation – how people believe.

During a second round of coding, those passages highlighted in the first round were marked according to the identified categories, while also refining and expanding the category system. Coded beliefs included beliefs about toxicity, beliefs about the cumulative effects of vaccines, beliefs that vaccine research has compromised integrity, beliefs about civil liberties and civic responsibility, beliefs about the premise of immunization, and preferences for supposedly natural life choices. Coded evaluation strategies included evaluations of authority, risk/benefit negotiations, reliance upon personal, emotional experience, and applications of reason. So, for example, if a passage articulated a belief that vaccine ingredients were toxic because of the number of shots given, it would be coded as containing beliefs about toxicity and beliefs about the cumulative effects of vaccines. If the passage then related an anecdote about the commenter’s child, it would be coded as using personal experience as an evaluation strategy.

A third round of coding identified particularly illustrative quotations in the coded data. A coding table matched the coded categories with the PDF and page number of particularly strong examples of that category in the data. For example, hundreds of examples of beliefs about the cumulative effects of vaccines were identified in the second round of coding. During the third round, fifteen specific quotations were marked as being particularly good examples of those beliefs. Also, during this round, subtle variations within each category began to become evident, such that citations to the data were grouped into subcategories under the main categories coded in round two. For example, passages that had been coded as demonstrating beliefs about vaccine toxicity were grouped into subcategories according to which ingredient they discussed (for example, mercury, aluminum, or formaldehyde) and illustrative quotations were matched to each of those ingredients.

As a final round of coding, the data quotations identified in the third round were marked as being pro-vaccine, anti-vaccine, or mixed. For example, an anecdote about a child being vaccine damaged would be coded as anti-vaccine because it was used as evidence of the dangers of vaccines. This allowed a comparison of the use of each strategy on both sides of the debate.

Of the various means by which people justify their beliefs in the data, the establishment and evaluation of authority proved particularly interesting, and hence will be the focus of the remainder of this paper.

3 Results and Analysis

Misinformation is often characterized using cognitive terms – such as knowledge, bias, and heuristics – that seem to describe internal psychological processes of reasoning. While such processes undoubtedly account for many aspects of being informed and misinformed, they may overlook the ways in which informing, misinforming, and belief arise from social practices and social interaction. Of particular relevance here is the idea of social epistemology (Fallis, 2006, 2008; Wilson, 1983). According to this concept, very little human knowledge is acquired firsthand through primary experience. Instead, most knowledge is acquired secondhand through other sources upon whose representations we rely. In simple terms, most things that we believe, we believe because we take someone else’s word for it. This suggests that despite our cognitive conception of knowledge, most knowledge is actually acquired
socially. This idea seems particularly applicable to the internet, which is essentially a collection of secondary sources.

A key idea at the center of social epistemology, as defined by Wilson (1983) and subsequently applied to the World Wide Web by Rieh (Rieh & Belkin, 1998; Rieh, 2002) is the idea of cognitive authority. While there are other kinds of authority, such as the authority to make laws or enforce them, cognitive authority is the particular kind of authority that underlies knowledge and belief. Put simply, cognitive authority is the authority to claim knowledge. As one person receives information from another, he or she evaluates the cognitive authority of the claimant and decides whether or not to believe the particular claim. For example, one might ascribe high cognitive authority to one’s doctor and therefore trust the information she provides and incorporate it into one’s own knowledge. Alternatively, one might ascribe low cognitive authority to a particular politician and decide not to trust the information provided. (Clearly, such concepts as trust and credibility are related to, even if distinguishable from, cognitive authority.)

The ideas of social epistemology and cognitive authority may be particularly important when considering misinformation on the internet (Fallis 2008; Rieh & Belkin, 1998; Rieh, 2002). The internet is constructed (mostly) by humans and thus the evidence there is socially constructed, secondhand evidence. The internet itself contains little if any primary, direct evidence of vaccine safety. To the extent that the internet, then, is a collection of secondary sources, social epistemology may be essential to understanding it as a source of knowledge. In turn, cognitive authority, as a key aspect of social epistemology, would also be key to understanding knowledge acquisition on the internet, and understanding how cognitive authority is evaluated would be key to understanding how evidence is evaluated, beliefs are formed, and knowledge is acquired.

In internet comments about vaccine safety, the evaluation of cognitive authority is rich and complex. An analysis of these comments suggests certain insights into the process of forming belief and recognizing misinformation. They also suggest ways in which cognitive authority may operate differently on the internet than in other information environments.

3.1 Cognitive Authority of the Self

At the most basic level, people posting comments on the internet seek to establish cognitive authority through the citation of facts. In essence, this amounts to claiming “I have cognitive authority because I have knowledge”, as in the following comment:

[1] FACT, diseases have ALWAYS ebbed and flowed before vaccines and continue to do so.

Note that the citation of facts is not unique to the anti-vaccination side of the debate, as pro-vaccination facts are cited in a similar fashion:

[2] Autism generally starts to show at around the age they now give the MMR vaccine.

At this level of authority, only the factual claim is made. The claimer apparently expects the claim to speak for itself, and does not provide any external evidence that supports or vouches for his or her ability to know.

At what we might consider a higher level of authority, people attempt to support their claim to authority with some other means such as a citation of sources or establishment of credentials. When attempting to support one’s own cognitive authority, a very common means is citing one’s own credentials:

[3] Being a nurse I find this article very disturbing. First off – the CDC would NOT administer vaccines that are harmful.

Again, this strategy is common to both sides of the debate:

[4] I am a registered Nurse and a mom. I too believe that there are far more illness caused by todays shot requirements then is prevented. [sic]

Claims to cognitive authority based on citation of one’s own credentials are based on an underlying assumption that amounts to “I know because of my own experience.” This may appear to be, contra social epistemology, a claim to firsthand knowledge. Of course, expertise such as nursing credentials is
acquired through education, a thoroughly secondhand means of acquiring knowledge. But these claims regarding one's own credentials are not framed in those terms. The claim is not to having a nurse's education, but rather to being a nurse. Even citations to education, akin to "I have a PhD" or "I have a degree in biology" emphasize the first person knowledge status rather than the secondhand means of learning. In fact, common cultural practice is usually to emphasize the secondhand means of acquiring knowledge only when implying that the knowledge is incomplete, as in "I went to nursing school" or "I took Biology classes" which carry the implicit suggestion that one nonetheless did not become a nurse or biologist. Hence the strongest claims to cognitive authority based on one's own credentials equate one's knowledge status with one's identity rather than with one's learning practice. This dresses the secondhand knowledge of education in the terminology of the firsthand knowledge of experience.

Often, however the claims to the superiority of firsthand knowledge are more explicit. It is interesting to note in quotation [4] above the commenter's reliance not only on her medical expertise as a nurse, but on her additional expertise as a mom, by which she apparently intends to strengthen her claim to cognitive authority. This kind of personal experience is very often used as a supporting credential about vaccine safety:

[5] Within 2 days [of the MMR] our very content, happy little boy changed. He started screaming, bashing his head against the wall, hitting himself, biting me, kicking me and the list goes on.

These kinds of personal stories are extremely commonly told by those who question the safety of vaccines. If we assume that one justifies one's beliefs with the evidence one considers most persuasive, then we learn a great deal about cognitive authority by noting the extent to which emotional personal experiences are used to establish it. Many pro-vaccine advocates, recognizing the power of such appeals, suggest countering them with similarly emotional appeals about the consequences of vaccine preventable diseases:

[6] My father contracted Polio... He was a healthy, strapping, six foot tall 26 year old. He survived in a iron lung for 1 year before dying. [sic]

These kinds of appeals, of course, are explicitly claims that firsthand experience is superior to secondary experience, is in fact more reliable, and hence that social epistemology is inadequate. Some people take this so far as to claim that without personal experience, one has no cognitive authority on the issue at all:

[7] If you're just talking to talk and don't have any children with Autism, your output is worth zero.

This position is emblematic of something Nicholson and Leask (2012) have noted, that "parents of autistic children were seen to understand the issue because they had lived it. By that measure, doctors, scientists and governments were seen as less eligible to provide evidence because they did not have this tangible experience" (p. 3810.) For such parents, the only credentials that establish cognitive authority about vaccine safety are personal experience with autism.

In general, the establishing of one's own expertise may be more important on the internet than in other information sources. Since authority on many parts of the internet is not established through traditional markers such as those found in encyclopedias, newspapers, etc, such claims do not automatically inherit the credibility of their source (Metzger, Flanagin & Zwarun, 2003; Metzger, 2007; Metzger, Flanagin & Medders, 2010; Rieh & Belkin, 1998; Rieh, 2002). This is, of course, particularly true of comments sections. Each person making a factual claim must establish his or her authority independently, increasing the need to cite one's own credentials in such environments. This requirement can also be empowering, because the internet provides an ability to establish authority that one may not previously have had. Anti-vaccination beliefs seem to take particular strength from this ability. Perhaps in previous information environments, one could have believed one had the authority to disagree with the consensus of a number of organizations, but prior to the internet, one likely had less ability to exercise that authority.

As many scholars have pointed out, the importance of personal authority may be enhanced by the personal nature of the internet. Betsch et al. (2012) and Witteman and Zikmund-Fisher (2012) note how the user participation tools of Web 2.0 increase the amount of personal authority available and enhance its influence. In particular, as Betsch (2011) notes, the interactive tools of social media make personal, anecdotal testimony both easier to post and easier to find. This would certainly seem to apply
more broadly than just social media to include other participatory aspects of the internet as well, comments sections certainly among them.

What is unclear from the data collected for this study is how often these personal, emotional anecdotes are persuasive to other people. In other words, many, many parents in the data defend their beliefs with anecdotes about their personal experience, suggesting that that experience was among the evidence most persuasive to them. Indeed, the prevalence of personal testimonials is frequently noted in studies of vaccine beliefs (Betsch, 2011; Betsch et al., 2012; Davies, Chapman & Leask, 2002; Kata, 2010, 2012; Mills, Jadad, Ross & Wilson, 2005; Nicholson & Leask, 2012; ). While many such studies do not quantify personal anecdotes about vaccine safety, Kata (2010) found them on 88% of websites in her study. Rarely, however, does the data collected for the present study demonstrate people having been persuaded by an anecdote someone else tells them. Of course this does not mean that it never happens, but personal experiences cited as self-persuasive are overwhelmingly more common than personal experiences cited as other-persuasive. This is interesting given other research that the persuasiveness of emotional narratives gives the internet particular persuasive power (Betsch, Renkewitz, Betsch & Ulshofer, 2010; Betsch, 2011). At least in the present study, persuasive secondhand accounts of vaccine-adverse events are certainly not as prevalent in the data as social epistemology might suggest. Rather, because these personal testimonies are so often framed as being contrary to the advice of the medical community, they suggest that cognitive authority is much less persuasive than personal experience. This certainly complicates any theorizing about the internet being uniquely likely to misinform. Evidence on the internet may be easier to find, but whether it is more likely to persuade is simply not demonstrated in the present data.

3.2 Cognitive Authority of Others

This is not to suggest, however, the failure of social epistemology as an explanation of internet knowledge acquisition. Indeed, there is much evidence in the collected data of beliefs formed through social means, including means that are enhanced by or even unique to the technology of the internet.

Some commenters defend their views by identifying the source of their knowledge. At the most basic level, this means a general citation of the source of a claim:

[8] O’Shea has a… book called “Vaccination is not immunization” that is a must read for anyone interested in the facts. In this book he has lots of data that is backed by references and a lot of doctor support for his work.

Here, the commenter refers to a source that he or she finds credible, including basic reference information, but does not provide any credentials to establish the source’s cognitive authority. One is left to find, investigate and evaluate the source oneself. This particular quotation does take the extra step of attempting to enhance the source’s authority by referring to “data,” “references” and “doctor support,” but again this is non-specific and leaves any potential reader of the comment to do his or her own investigation.

Some commenters assemble more specific support for the authority of their sources. As with individuals seeking to establish their own authority, some cite the credentials of others to establish the cognitive authority of sources.

[9] The supreme court ruled, that vaccines are unavoidably unsafe. The highest court in the land.

Though it probably was unnecessary to do so, this commenter reinforces the source of his own knowledge by emphasizing that it is the “highest court in the land.”

Claims regarding the credentials of others are also used for the opposite purpose, to question or undermine the cognitive authority cited by another. Sometimes, this technique is used in an attempt to discredit the authority someone has claimed for themselves:

[10] Who cares that you’re an RN? There are RN’s that disagree with you. There are M.D.’S that agree with you and there are M.D.’s that don’t agree with you.

Other times it attempts to discredit an authority that someone else has cited:

[11] [He] is not a “doctor.” He has a PhD in computer science from what was then a unaccredited degree mill. And his “research” has not been repeated nor validated.
A particularly common tool for attacking the cognitive authority of another is the accusation of bias:

[12] It sounds to me like you... are either a kickback taking doctor, a pharmaceutical representative, or one of the “herds” that has been brainwashed into believing all doctors are gods. Get a grip or get a brain.

[13] LEADING CAUSE OF DEATH in this country is doctors and pharmaceuticals. What a huge cover up. I don’t trust the medical industry they are all about the $$$$$.

Accusations like these function not only to undermine the authority someone else has claimed; they also attempt to bolster the authority of the critic. In quotation [11], the commenter resorts to the first technique we discussed, the citation of unsubstantiated facts, in order to position his or her own authority as superior to that of the person being criticized (both the doctor and the person who cited the doctor.) In quotations [12] and [13], the integrity of the stated position is alleged to be compromised by financial incentives that may undermine objectivity. At the same time, these comments exalt the superior insight of the commenters who are not misled by bias. Yet again on the internet we observe the exaltation of personal authority above all other kinds.

The following quotation is even more illustrative of this phenomenon:

[14] So have you researched and tested the vaccines yourself? have you conducted thorough studies? [sic]

Here again is an articulated challenge to the very idea of social epistemology. Implicit in this comment is the assertion that no secondhand knowledge can suffice, but that only people who have conducted firsthand research could possibly have appropriate cognitive authority. While the quote is unique and its demands atypical, it demonstrates by exaggeration the contradictory logic of cognitive authority about vaccine safety on the internet. On the one hand, the internet is seen as a platform for the discovery of previously unavailable truths, and for the airing of anti-establishment positions. Thus the internet is seen as the place where repressed testimony is at last being heard. On the other hand, the internet is a collection of secondary sources, and indeed does not lend itself to firsthand research of vaccine safety, and therefore all of its claims are demonstrably unreliable, especially to those who disagree.

To unpack this contradiction further, we might consider the ways in which cognitive authority seems to function differently on the internet than elsewhere. While the various aspects of cognitive authority discussed thus far are present on the internet, none of them are particularly unique to the internet. People do make and have made unsubstantiated factual claims in every information environment. They sometimes support those assertions by citing their credentials, or with non-specific references to the source of their knowledge. They even debate each others’ claim to know, including accusations of bias. All of these negotiations over cognitive authority could take place in an argument in a bar; they are no different just because that argument takes place on the internet. To some degree, however, the technology of the internet alters the negotiation of cognitive authority in ways that are not available in other information environments.

The most obvious of these is the use of linking. The internet provides the unique ability not just to refer to a source, but to provide it directly to someone else. While in the aforementioned bar fight we might be lucky enough to be carrying a particular source in our bag, on the internet every source is in our virtual bag, and our ability to provide it to others is nearly effortless and limitless.

[15] here’s a great study of half a million danish, a good section were not vaccinated- generally the same rates [of autism]. [provides link]

[16] Actually, there are plenty of studies that link autism to vaccines. This is a link to a list of approximately 150 scientists and physicians who have serious concerns about vaccine safety. [provides link]

The internet, therefore, enables us to establish cognitive authority with a mere cut and paste, and to verify cognitive authority with a mere click. This is so easy, in fact, that it seems to raise the expectation of evidence required on the web:
[17] Where is an article that links specific unvaccinated individuals to having a disease and infecting other people. [sic]

[18] Please post the text of the court decision “admitting” your assertions. Can’t find it? Neither can I. I “can” find lots of sloppy articles on this and related sites, claiming that a monetary awards damage “proves” the vaccine link [to autism.]

Comments such as these suggest that the expectations for evidence are higher on the internet because of the ease of linking. It is perhaps not enough merely to provide the secondhand experience of naming sources; one is expected to provide the ability for a firsthand evaluation of the source. It is interesting to speculate, however, on whether this actually raises the standard of evidence or only appears to. It seems unlikely that most people click the links at all, much less read the entire article. (Indeed, there is evidence in the collected data of commenters who have not even thoroughly read the article on which they are commenting.) Therefore, this apparent demand for citation on the internet may functionally be a demand for the appearance of evidence that few if any people will actually verify.

There are other suggestions in the collected data about how the internet may raise the expectation of evidence. Much like the ease of linking may raise the demand for citation, so the ease of access seems to raise the demand to inform oneself:

[19] polio was all but gone until they brought a vaccine out that started it up again, you do some research and come back to me

Implicit in comments like this one, which are quite common in the collected data, is the suggestion that if “you” disagree, it is because “you” have not done proper research. This is more than just a claim of the ignorance of others; it amounts to a positivist claim that truth is available if only one looks. It does not suggest where “you” might do research, or that you might disagree with what you find. It suggests that, at least as far as this commenter believes, it is sufficient merely to do research at all. The claim to cognitive authority is here based on self-evidence. No sources or credentials are believed to be needed, as the truth is so obvious it will reveal itself.

At the same time, these apparently positivist claims have a contradictory postmodernist underpinning. As Kata (2012) has noted, the implied disregard for traditional cognitive authorities is rooted in a postmodernist redefinition of expertise. Of course, the redefinition of expertise is also a frequently noted consequence of Web 2.0 (Keen, 2006). A call to do research implies a call to look beyond traditional expertise and empower oneself to find and to know, as explicitly stated in the following quotation:

[20] Free-thinking mothers who do their own research are not fooled by this pathetic propaganda, and to expect us to robotically accept these flat-out lies mixed with twisted "truths" is nothing short of an insult to our intelligence. [sic]

This quotation repeats the claim to self-evidence of quotation [19], and adds the important additional layer of doing one’s “own” research. This suggests that other sources are not to be trusted, but even more importantly, implies the superiority of the individual user’s knowledge acquisition abilities. Again, as Witteman and Zikmund-Fisher (2012) have noted, the specific tools of Web 2.0 may lend themselves to such a concept of research, both in the way that Web 2.0 enhances user participation in creating information and in accessing it, but also in the way that the open architecture of the internet makes “informed decision making” easier. As Witteman and Zikmund-Fisher put it:

Online openness means that data and information are readily accessible and may be questioned, corrected and built upon to create new knowledge... As Web 2.0 progressively allows free and open access to data, more and more decisions... are becoming recast as being within the purview of individuals (p. 3736).

For internet users displeased with traditional sources of cognitive authority, as is often the case with those concerned about vaccine safety, the internet’s enabling of one’s “own research” implies a truth now unobscured because of the internet, there to be discovered as self-evident once one makes the effort to look. This is the implication of quotation [20] in its comparison of the “free-thinking” enabled by the internet with the “pathetic propaganda [sic]” of others claiming cognitive authority on the issue. Such a quotation serves as almost a manifesto in its exaltation of firsthand knowledge, which at last has broken free from the “lies” and “twisted ‘truths’” of pro-vaccination authorities. It implies a point at which one
ascribes cognitive authority to oneself, as if to say, “my research is superior to what anyone else tells me, and hence my cognitive authority is superior to everyone else’s.” This is perhaps the most powerful claim to firsthand knowledge of them all.

4 Conclusion

In a study seeking to understand how misinformation is believed, the evaluation of cognitive authority is certainly not the only relevant factor, but it is one of the more interesting and illuminating. In particular, the participatory tools of the internet seem to influence how cognitive authority is established and appraised. Whether through citation of sources, the establishing of credentials, or the objection to them, cognitive authority functions through a rich and complex set of negotiations among internet users. While the internet would seem to be a collection of secondhand knowledge, it is also rife with exaltation of firsthand knowledge as a superior, and uniquely accessible, means of knowing.

We must note that this study cannot really demonstrate the extent to which the internet might or might not enable new breadth of evidence evaluation. Rather, it suggests that internet users, at least in comments sections, perceive that it enables it.

Much has been made of the internet’s role in dissolving previous hierarchies into more open networks, from the exercise of political power to the distribution of cultural content. Whether it is credited with the literal overthrow of hierarchical authority in the “Twitter Revolution” or in Tahrir Square, with undermining the profit-oriented distribution of music and movies, or with democratizing access to once specialized knowledge, the internet is everywhere depicted as dissolving centralized systems into decentralized ones. In the end, the same dissolution may befall previous systems of right and wrong. We can only speculate what can remain of socially-acquired knowledge that is dependent on trust and authority when it circulates through a social structure that erodes the very idea of authority.

References


Table of Figures
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