

# Vaccine-Hesitant Justifications: “Too Many, Too Soon,” Narrative Persuasion, and the Conflation of Expertise

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## Abstract

Vaccine-preventable diseases have re-emerged as more individuals have strayed from the recommended inoculation schedule. Previous work on vaccine hesitancy is generally limited to content analyses. Using grounded theory, this project examines vaccine debates on a prominent discussion board over a period of five years. Individuals generally justified opposition or hesitancy toward vaccines through personal experience and/or research, and the concepts of narrative persuasion and the conflation of expertise help describe the most prominent characteristics of such discourse. A consideration of online comments regarding vaccinations allows practitioners to not only become better prepared for patient concerns they might encounter, and but also become more familiar with the types of anecdotes and narratives that may be influential but left unspoken in face-to-face conversations.

## Keywords

autism, communication, descriptive methods, discourse analysis, grounded theory, Internet, lay concepts and practices, online research, qualitative analysis, stories / storytelling

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Public polling data indicate widespread confusion regarding the basic claim that vaccines cause autism. A Harris poll found one in three parents link vaccines and autism (National Consumers League, 2014). Another study indicated just 44% of Americans disagreed with the statement that “doctors and the government still want to vaccinate children even though they know these vaccines cause autism and other psychological disorders” (Oliver & Wood, 2014, p. 817). This demonstrates, first, significant public concern regarding the safety and effectiveness of vaccination, and second, significant public concern regarding the general trustworthiness of doctors and the government.

Mainstream science has approached an operative consensus that there is no link between vaccines and autism, and that vaccines are generally safe (Taylor, Swerdfeger, & Eslick, 2014). With medical experts in the United States convinced of the utility and safety of vaccines, it might be expected that the general public would defer to such expertise. Data suggest the vast majority of the public heeds such advice, as overall rates of infant vaccination remain high—with a rate of more than 90% for some vaccines—whereas fewer than 1% of infants received no vaccinations (Beasley, 2014). At the same time, troubling trends have emerged with one in 12 children not receiving their first Measles, Mumps and Rubella (MMR) dose on time, a significant disparity in vaccination rates among foreign-born populations in the United States, and sporadic outbreaks of measles and pertussis (whooping

cough), attributed to pockets of unimmunized individuals (Hiltzick, 2014; U.S. Infant Vaccination, 2014).

If established medical authorities have concluded vaccines are both necessary and safe, why does a segment of the public question the validity of these findings? The incongruence between the opinions of established medical authorities and those of the general public forms the basis of this inquiry. Furthermore, are these concerns regarding vaccine safety a by-product of a lack of awareness, or a preference for alternative perspectives?

The ways in which individuals access news and information has changed significantly in recent years. A common way for people to verify claims is to execute an online search. It has been estimated that three in four Americans who use the Internet have sought out health information in the past year (Fox & Duggan, 2013). The problem is that if a layperson executes an online search for “vaccines and autism,” for example, the results can be confusing because information from the Centers for Disease Control and Prevention coexists with that produced by the National Vaccine Information Center—a strategically named organization that, in essence,

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curates anti-vaccine literature. Exposure to such a site for even a few minutes has been shown to increase perceptions of risk and actually reduce the likelihood parents will vaccinate several months later (Betsch et al., 2010).

Furthermore, “the general consensus in the persuasion literature” holds that, relative to traditional media, online environments are more effective at persuasion (Daugherty, Gangadharbatla, & Bright, 2010, p. 129). A recent article found “online commenters who are perceived to be credible are instrumental in influencing consumers’ responses to pro- vs. anti-vaccination online PSAs” and suggested within the digital realm that the message alone does not influence individuals, but online comments that react to those claims “independently contribute to consumers’ vaccination attitudes and behavioral intentions” (Kareklas, Muehling, & Weber, 2015, p. 3). In short, online debates regarding vaccines not only reflect but also shape attitudes regarding inoculation.

The bulk of scholarship regarding vaccine discourse online has examined content produced by anti-vaccination websites (Bean, 2011; Kata, 2012). What remains to be seen is how individuals redeploy these claims when confronted by someone adhering to a more mainstream view that is supported by empirical data and peer-reviewed studies. This discussion fills a gap in research as articulated by Larson, Cooper, Eskola, Katz, and Ratzan (2011) that future work should listen to the concerns and perceptions of the public with respect to vaccine safety.

Clinicians have described interactions with such vaccine-hesitant patients as “otherworldly and alien” (Poland & Jacobson, 2012). It is clear vaccine-hesitant individuals tend to have more nuanced opinions than their mainstream counterparts might presume, and for those uninitiated to the literature, such arguments can appear compelling, or at least difficult to dismiss—particularly when the welfare of a child is at stake. This study helps generate a better understanding of this urgent and emergent genre of argumentation.

The foregoing suggests there is much to be learned by studying vaccine-hesitant discourse online. And although much has been written regarding the attributes of purely anti-vaccine sites, very little is known about how those arguments are (re)interpreted by vaccine-hesitant individuals. More importantly, it is unclear how influential the literature on anti-vaccination sites might be for vaccine-hesitant individuals, compared with other sources of available information. Even further, it remains unknown how vaccine-hesitant individuals tend to respond when confronted by someone arguing in favor of the current inoculation schedule. For that reason, this project aims to address the following research question:

**Research Question 1:** In what ways do vaccine-hesitant individuals justify their beliefs when those views are questioned in an online forum by those who favor the recommended inoculation schedule?

By documenting the trajectory and outcome of recurring claims made by vaccine-hesitant individuals, we may better appreciate the context in which such arguments are formulated. The ensuing discussion and the ways in which such conversations are negotiated are also suggestive of the ways that practitioners might remediate patient and parental concerns regarding vaccines.

## Review of Literature

The bulk of research regarding vaccine discourse online has occurred within the last 5 years, but a few early studies emerged around the turn of the 21st century. The majority of such studies examined the content attributes of “anti-vaccination” websites (Davies, Chapman, & Leask, 2002; Nasir, 2000; Wolfe, Sharp, & Lipsky, 2002; Zimmerman, 2004; Zimmerman et al., 2005). Some of the pioneering work that explored arguments made on such sites is useful to an extent, in that it might allow a later comparison to demonstrate how such discourse might have evolved over time (see, for example, Friedlander, 2001; Wolfe, 2002).

Some interesting work has been done to investigate the persuasiveness of narratives compared with statistical information regarding vaccination risks. Betsch, Ulshofer, and Renkewitz (2011) posit that exposure to narratives regarding adverse events following vaccination led to increased perceptions of risk, “which in turn decreased vaccination intentions” (p. 750). They argue the greater number of narratives is “the critical variable” in someone’s decision calculus, but also that even a single “more emotional narrative” can itself lead to an exaggerated sense of risk associated with vaccination (p. 750). The authors mimic stories that might appear on a message board, but note their study is limited because behavior on message boards may have “systematic variations that we did not consider” ranging from the way narratives were presented, and the motivation for viewing the information (p. 751). The study relied solely upon freshmen students who completed the survey for course credit, and the attitudes and level of interest in the subject may be quite different for those participants when compared with those of concerned parents—or anyone who approached the topic by choice.

Poland and Jacobson (2012) effectively refute three primary arguments made against vaccination: that too many vaccines are given too soon, that vaccines are dangerous, and that vaccine-induced immunity is less effective than natural immunity. In so doing, they observed a “communication divide” between scientists and clinicians, and those opposed to vaccination (p. 860). Their concluding call to action posited that identifying “the most common anti-vaccine claims” is essential to “inform further research, teaching seminars, and continuing education courses for clinicians” in an effort to better respond to such concerns (p. 864).

To date, there is general agreement on the types of arguments circulated by “anti-vaccination websites.” Kata (2012)

examine tropes of vaccine-hesitant discourse online, and echoed findings by Bean (2011) and others that the most frequently circulated arguments include the notion that vaccines cause illness, are ineffective, and are part of a conspiracy between the medical establishment, pharmaceutical corporations, and government agencies and actors, and that mainstream medicine is either wrong (and/or) corrupt.

What remains less understood, however, is how proponents of such arguments tend to respond when confronted by an advocate of the current vaccination schedule. Ruiz and Bell (2014) argue content analyses reveal what people might learn about vaccines by going online, but “cannot address questions about the effects of this information on vaccine-related attitude, beliefs, and actions,” which would seem to indicate the need for greater study of how such claims are circulated, and how individuals who circulate those arguments tend to respond when countered by arguments in favor of vaccines. They also note that social media and interactive forums, which they had not studied, enable “rapid dissemination of personal narrative accounts of alleged vaccine effects and is more prone to be widely shared among social media channels” (p. 5779). In other words, an in-depth examination of online forums might offer a glimpse at the ways in which individuals redeploy such arguments within a persuasive context.

Jolley and Douglas (2014) suggest that even mere exposure to a conspiracy theory, such as the suggestion that pharmaceutical companies manipulate research, has “more than a trivial effect,” and in fact, “directly affects vaccination intentions” (p. 6). Their work “demonstrates empirically, and to our knowledge for the first time, that anti-vaccine conspiracy theories . . . present an obstacle to vaccine uptake.” The authors posit that “successful interventions may focus on direct counterarguments against the conspiracy allegations themselves,” which also seems to imply a need for reviewing the outcome in discussions between vaccine-hesitant individuals and those who argue in favor of the current vaccination schedule (p. 7).

A practitioner’s capacity to connect with vaccine-hesitant individuals in a meaningful way therefore requires a fuller appreciation of the informational ecosystem inhabited by the latter, including which types of arguments continue to resonate, and why.

## Method

Grounded theory was used to study online conversations regarding the safety of vaccines over a 5-year period. This inquiry therefore treats vaccine-hesitant discourse with the intention of developing a better answer to the basic question “What’s happening here?” (Glaser, 1978). The approach resembles what Altheide and Schneider (2013) call *tracking discourse*: “following certain issues, words, themes and frames over a period of time,” and analyzing the discourse “interactively and inductively” (pp. 117–118).

## Grounded Approach to Vaccine-Hesitant Discourse

Several deductive models and dual-processing matrices were considered and abandoned in favor of a grounded approach. It became clear certain frameworks might be of use to answer more narrow questions, but would fail to capture some of the more interesting facets of the discourse. Such a discovery is not necessarily new, as it has been pointed out that the evolution of online sites has outpaced our understanding of them, which complicates valid categorization schemes and suggests a grounded approach is needed (Pauwels, 2012). Such online discussions are often lively and granular in nature, with different participants sometimes debating multiple individuals or claims in a single post (Gasson & Waters, 2013). It was therefore determined that an inductive approach was warranted.

Grounded theory is a particularly helpful method to better understand and address concerns related to vaccines. One of the basic intentions of the approach is to “get through and beyond conjecture and preconception” and to figure out “what is going on so that professionals can intervene with confidence to help resolve the participant’s main concerns” (Glaser, 1998, p. 5). Such concerns cannot fully be understood if they are not fully articulated, and at least some patients may be hesitant to express the full extent of their beliefs before practitioners. The knowledge gained from spaces in which such beliefs circulate and flourish could therefore provide necessary background for professionals to appreciate the context within which such concerns arise.

Finally, Baym (2009) observes that in qualitative work, generalizability is “neither relevant nor possible” given the fluid nature of reality, and the goal should therefore be to generate analyses with thick descriptions that could then be compared with other contexts (pp. 175, 186). It is natural for such inquiries to be “suggestive, incomplete and inconclusive” (Charmaz, 2005, in Creswell, 2012, p. 66). The hope is to achieve “limited triangulation” where certain patterns are identified and might be of utility to researchers in a similar area of interest (Lincoln & Guba, 2000). The following section provides justification for selecting the site of debate while also sketching out the more prominent and relevant aspects of the discussion board.

## Selecting the Site of Study

The message board *AboveTopSecret (ATS)* was selected for analysis. The goal was to find a website or websites that would feature sustained, robust discussions from individuals with a wide range of opinions regarding vaccine safety. Mainstream media outlets and websites that were explicitly “pro”- or “anti”-vaccination were struck from consideration in an effort to reduce priming, whereby discussions begin in response to a prompt created by the article itself. The comment sections of mainstream media articles on this particular

topic tended to feature less engaged, sustained, and in-depth debate when compared with message boards. A seemingly “neutral” site might better attract a broader range of discussion as well. The user-generated nature of the content on discussion boards allows for topics of interest to emerge organically in comparison with the genre of top-down, text-producing sites, and can therefore yield a better glimpse at which vaccine-related claims hold suasive force for a cross-section of vaccine-hesitant individuals. And because this inquiry is less concerned with the initial message created by a mainstream outlet or “anti-vaccination” site and more concerned with how those messages are interpreted and redeployed by members of the public, it seems prudent to shift the focus toward finding a suitable message board for examination.

Several prominent message boards were considered for analysis, including *Reddit*, *Infowars*, *GodlikeProductions*, *DavidIcke.com*, and *ATS*. *Reddit* would be considered the most mainstream of the sites, but proved to have a high number of posts of relatively short length, and if pro- and anti-vaccine proponents were present to articulate their views, messages were frequently caustic and dismissive, rather than suggesting a willingness to engage in discussion. After examining multiple vaccine threads on each site, it was determined that the signal-to-noise ratio—or posts where participants attempt to engage in substantive discussion compared with those who merely drop-in with a pithy comment—was insufficient in terms of frequently generating in-depth exchanges. Simply put, the conversations on *ATS* seemed to offer greater substance and depth than were found in the other forums. For these reasons, and for an enhanced ability to outline structural affordances of a single site that influence the nature of user-generated content, I selected *ATS* as the site of study for the project.

*ATS* advertises itself as the “largest and most popular discussion board community dedicated to the intelligent exchange of ideas and debate on a wide range of ‘alternate topics’” (“About ATS,” n.d.). *ATS* has been characterized by participants on other conspiracy theory sites as “the biggest conspiracy forum” (Dubay, 2010). The board has 99 distinct discussion forums, categorized as “breaking news,” “conspiracy theory,” “political,” “current events,” “mysterious subjects,” “media, resources, and conspiracy pros,” “science and technology,” “information and collaboration,” “general off-topic chit-chat,” “entertainment and sports,” and “computers and Internet.” Of all the forums and subforums, none were strictly devoted to vaccination, so for example, a user might start a vaccine-related thread in the “Medical Issues & Conspiracies” forum, or perhaps the “Breaking Alternative News” or “General Conspiracies” forum. Fortunately, the site allows users to view and search popular threads and forums.

As its name might suggest, *ATS* is, for the most part, friendly toward conspiracy theorizing. This ought not be conflated with being accepting or uncritical toward such

ideas—there are plenty of threads with more skeptics than proponents. Rather, the site maybe best seen as a gathering place to discuss (and discard) ideas that may fall within, along, and beyond the boundaries of typical mainstream discourse.

### Selection of Threads for Analysis

As previously mentioned, I seek to track discourse over a period of time, interactively and inductively. Now that the site of analysis has been clarified, we can turn toward how relevant discourse on the site was identified. This project utilizes *progressive theoretical sampling* that bases selection of appropriate documents on the “emerging understanding of the topic under investigation” (Altheide & Schneider, 2013, p. 56).

The process of filtering threads began with initial searches for “vaccines and autism” as well as “vaccine autism” in the *ATS* search engine powered by Google. That was combined with a Google search that specified *ATS* as the site, with the same search terms. Retrieval of the Google search results “site:www.abovetopsecret.com vaccines autism” yielded 1,590 results. A review of the first few hundred results shows the most topical discussions occurred within the first dozen pages, and a majority within the first seven pages of results.

As part of the progressive theoretical sampling, a decision was made to limit the inquiry to threads started from 2010 to 2014. This is due in part to the date of threads retrieved through search results, but is perhaps best justified by examining several extrinsic considerations: Comprehensive reviews of literature concerning a potential vaccines–autism link were produced from 2004 to 2007 that indicated no link between the mercury-based adjuvant thimerosal in vaccines and an increased risk of being diagnosed with autism, or along the Autism Spectrum Disorder (ASD) Scale. Furthermore, in 1999, thimerosal was removed from all newly licensed vaccines in the United States to assuage public fears, yet ASD diagnoses have continued to rise, which would seem to disprove the link further—results which would not have been clear until at least the mid-2000s. Therefore, discussions in that 5-year window occurred after a period of time where the scientific community devoted time to research the issue, and a time in which ASD diagnoses, in theory, should have declined if thimerosal were a factor. This allows for the focus of the inquiry to be upon those who continued to hold vaccine-hesitant beliefs after major inquiries by the mainstream scientific community had been conducted.

In all, 62 threads from 2010 to 2014 were selected for close reading, which resulted in review of roughly 6,580 user comments (329 pages, at 20 comments per page). During this time period, it is clear there is a rotating cast of participants on both sides of the debate. Within the sample, 57 authors created the 62 threads, and no participant started more than two threads. Although it might be expected that the majority



of threads in the forum might exhibit clear anti-vaccination phrasing, a quick glance at the valence of titles revealed roughly half of all thread titles seemed to favor an anti-vaccination narrative, whereas the remaining half were either open-ended or clearly pro-vaccination in nature. The threads were then arranged and reviewed in chronological order.

### Coding Process

To determine the aspects of communication that might be considered distinctive, it has been suggested to examine the intensity and frequency of various features (Foss, 2009). Because I am most interested in seeing which claims were contested and how participants resolved the matter, I used these friction points to detail what Charmaz (2010) might call “incident-to-incident” coding (p. 53). This entails documenting each incident, then comparing incidents with one another, and then circling back to the incidents that were first coded to better understand the characteristics of the discourse.

During the process of coding, there was an ongoing memo-writing process, as suggested by grounded theory (Charmaz, 2010). Notes went through a filtering process, as I began with notes on interactions on each page of a thread before consolidating key takeaways in bullet-point fashion. I then created a document that further consolidated the list of thread notes, organized by year. As patterns of interaction emerged, notes were added to the master list of observations by year. Microsoft Excel and Word proved sufficient for the process, and as Kozinets (2010) points out, the search function proved to be efficient in looking for recurring tendencies.

I used Evernote to help archive discussions and capture screenshots. Posts by participants were not corrected for spelling, punctuation, or grammar because “We literally reconfigure these people when we edit their sentences, because for many of them, these messages are a deliberate presentation of self” (Markham, 2004, p. 153). In this spirit, posts were not edited for content or formatting in the upcoming section. The insertion of “[sic]” therefore seemed unnecessary as well, as some participants actively intend to deploy conversational heuristics in their posts.

About one third of the way through the coding process, recurring patterns of claims and behavior emerged. There seemed to be two fundamental appeals made by those within the vaccine-hesitant camp: those based upon personal experience and told through narratives and those based upon individual research that was often accompanied by links to articles. As I refined this observation, those twin tendencies continued to reassert themselves throughout the conversations that occurred over this 5-year period. I continued the analysis, reaching what felt like a saturation point approximately two thirds of the way through the coding process. The remaining threads were coded, after which the earliest threads were reassessed—all of which helped illuminate how vaccine-hesitant individuals justified their beliefs when

those views were questioned in an online forum by those who favor the recommended inoculation schedule.

## Discussion

### Central Claim: “Too Many, Too Soon”

The most common stance by the bulk of individuals who would identify as vaccine-hesitant is some variation of the “Too Many, Too Soon” argument that infants in the United States, beginning in the 1990s, are on an inoculation schedule that requires too many shots too quickly, resulting in adverse reactions. Participants may take slightly different approaches to reach the “Too many, Too soon” conclusion. A theme within that particular strain is that there are no studies that support the “chemical cocktail” of all recommended vaccinations for children.

One frequent participant references research being conducted to investigate the “Too Many, Too Soon” argument, adds a bit of his own intuition, and refers to his own attempt to look into the matter:

There is new research being done as to the effect of multiple vaccines causing a few conditions to occur, one of them being autism. This research is being evaluated in Europe to validate the results.

Now if you only consider each vaccine on an individual basis, there will not be evidence to show that the vaccine alone is doing harm or causing anything to happen. It creates a storm of chemicals when multiple vaccines are taken, which spirals into a protective state which causes problems.

I read the research, it seems very probable that it can do this . . .

For some individuals who identify as vaccine-hesitant, the debate may be far from over, as plenty of “experts” and “studies” are referenced to support arguments against inoculation. And, as will be shown in the upcoming section, the claim that often follows is that those in favor of vaccines “have not done the research” and need to approach the topic with an open mind.

### The Conflation of Expertise

Vaccine-hesitant individuals often justified their beliefs by referencing their own research (often online searches) into the issue, and accused others in favor of inoculation of “needing to research” the subject on their own. These messages can be blunt and at other times may include a pedantic flourish. In one thread, it was argued that the lack of a link between vaccines and autism “has been proven by all scientific standards,” to which a vaccine-hesitant participant responded, “The science is tainted by bias. Do some more reading. If you are not an immunologist, then you are making blanket claim in ignorance.” In another thread, someone digs into the history of adjuvants:

I'm guessing you are part of the vaccine clergy and don't understand vaccine science. I can tell by the hopelessly weak way you are trying to make your point . . . Do you know the science behind the aluminum adjuvant? I thought not, because it's not been studied and no one else does either. It was developed in the 1920's by trial and error.

Pharma is a massive profit machine. They market hard to get you to make decisions that are not in your best interest. It's working.

With respect to "conflation of expertise," I use this as an umbrella term for a range of effects. It is similar to what Brabazon (2006) calls "The flattening of expertise," in her discussion of media literacy skills where she argues that a "Google Effect" has "saturated inexperienced students with low-grade information." I choose to use "conflation" rather than "flattening" to emphasize the incorrect nature of the assertion being made in this particular context—because, like global warming, the matter has achieved an operative consensus among relevant actors in the scientific community. The conflation of expertise in one sense is the end product of someone valuing his or her own personal experience or personal research over that of trained specialists. But the conflation of expertise also occurred during that process, when non-experts (in the normative sense) are relied upon for evidence, or when scattered, speculative, and questionable studies are used to claim there are "links on both sides," or suggest there is even an active debate in the scientific community.

An example of this occurred within a debate regarding a pair of decisions made by the "vaccine court" in favor of parents with autistic children, first in 2010 and again in 2013. The 2010 decision, which many felt had mitigating factors of "underlying causes" and "nine vaccinations at once" was still viewed as a "historical first" and "the small crack in the glass that we needed." Another participant suggested,

If you guys wanna research this ATS is a good spot to look . . . There have been many many threads started on this subject . . . It has a wealth of information on both sides of the camp . . . You can find some posts under my name that I did yrs ago on this subject. But the ending result has been that the Thimerosal in the MMR shot is what is the cause of the rise in Autism cases . . .

The post that followed expressed appreciation for this contribution, and advised, "I will look into those posts, I am always ready to learn more about this subject."

Another poster claimed there "are plenty of links provided to explore. The proof is stacking up, its only a matter of time until this is blown wide open, the flood gates are going to open." And it is worth noting that another participant pointed out that the claimants in the case received an award because their children had encephalitis at the hospital for a full week before anyone noticed, rather than being "awarded damages from autism."

## Narrative Persuasion

Stories tend to linger in the mind, and may even exhibit a sleeper effect, whereby initial exposure may lead to the development of stronger beliefs over time (Appel & Richter, 2007). Hovland and Weiss's (1951) suggestion that even sources of low credibility can have such an effect seems particularly useful here, because "[w]ith the passage of time . . . they may remember and accept *what* was communicated but not remember *who* communicated it" (p. 636, emphasis in original). And rather than think of the mental processing of stories as less involved or less taxing than the mental processing of arguments, narrative persuasion is better understood as a qualitatively different experience that tends to involve deep and complex internal processes (Slater & Rouner, 2002).

One of the most common refrains from participants who cited a personal example was that no data could alter what they bore witness to. By definition, an anecdotal fallacy "privileges direct and recent experience even when such experience is poor in quality and unsupported or contradicted by other valid sources of relevant contextual knowledge" (Charlton & Walston, 1998, p. 148). The role of an exemplar, or a character in a story, has been shown to increase estimations of risk and skew overall risk assessment (Cho & Friley, 2014). A frequent pairing with such anecdotes was the suggestion to "listen to your intuition," which was perhaps a way to encourage others to amplify or exaggerate existing concerns regarding vaccination.

For example, in a thread where several individuals offered stories about how they were unvaccinated and in perfect health, others added anecdotes about getting sick only after receiving vaccines: "Say what you want about vaccines, but there are obvious first-hand accounts that can't be dismissed—like my own." Another participant emphasized her personal conversations on the matter as something that continues to resonate: "I've talked to people personally about vaccines. One example struck me; mother's story of how her child could speak and function normally until vaccinated, was years again before he spoke and exhibits the symptoms until this day." This often means that for some vaccine-hesitant individuals, when comparing personal experience alongside scientific data, the former is more persuasive—perhaps due to an inability to reconcile such an experience with such findings. One such participant succinctly articulated such a feeling when challenged by the Original Poster, or OP:

I am sorry OP but I don't believe a word of it.

I was witness to my cousin's baby developing fever right after vaccines and being autistic after that.

There is the academic stuff that feels good, and then there is the Seeing is Believing

In the September 2014 thread, “Vaccines, Thimerosal, MMR, Mercury Not Associated With Autism,” some participants called into question rigorous scientific data in the original post, not for the methodology or interpretation by the authors, but because it clashed with personal experience. And when others explicitly asked if they were arguing in favor of personal experience rather than scientific data, they would often provide additional detail for their testimonial. At one point, the OP challenged others to critique the study: “Anyone care to critique the methodology and results as outlined in the paper?” The very next post featured another participant questioning the hesitancy contained in another person’s post: “Are you saying anecdotal evidence trumps the results of a huge, rigorously conducted study?” The post that followed attempted to further justify belief by explaining how personal experience can nullify scientific evidence:

You misunderstand . . .

I witnessed it. My 18 month old son was fine.

Got mmr vaccine.

Instantly autistic. SEVERELY autistic.

Instantly!!!!

I had never even heard of a link between autism and mmr. Imagine my surprise.

I now know a lot of parents with autistic children, from where my son goes to school. Most of them say the same thing . . . they had never heard of a link between the two.

Picture this:

Someone punches you, you get a black eye.

I say, “there is a study that proves blackeyes are not caused by punches.”

You know I am wrong, you argue.

I say, I have been punched in the face, I didn’t get a black eye.

I would sound as clueless to you as autism/mmr-connection deniers sound to parents that have experienced it firsthand. Firsthand!

Did you conduct the study and observe the results firsthand?

No?

The funniest part:

Doctors rely on parental instinct when it comes to dealing with autism because parents understand the children better . . .

. . . hmmm

Re-read this until you finally get it . . .

I was there.

You were not.

Arguments of this type tend to arrive as a vivid anecdote or personal narrative regarding an adverse reaction to vaccination. In these instances, a measure of empathy by practitioners is first required, with little room for incivility. Benoit (1980) suggests two primary ways: “Argument by example can be refuted by presenting negative examples or by claiming that the instances forming the generalizations are different from the instance to which it is applied” (p. 192). Successful methods of allaying such concerns may therefore include counter-narratives of individuals harmed by vaccine-preventable diseases, or of individuals who used to be vaccine-hesitant. Recognizing the general form of argument is not only suggestive of ways in which to counter certain concerns, but also recognizes the importance of examples—testimonials and stories—that are the lifeblood of vaccine-hesitant beliefs.

## Implications

The medical debate regarding vaccines bears some resemblance to the scientific discussion concerning global warming, in that most experts would consider it a question that has already been asked, answered, and settled. With respect to vaccinations, an overwhelming amount of data demonstrates that the procedure itself is a safe and effective way to combat disease. Vaccines may have varying rates of efficacy, but there is no credible evidence to suggest they are linked to a rise in ASD diagnoses. But concerns about vaccines have persisted, and as more people have abandoned the recommended inoculation schedule in recent years, vaccine-preventable infectious diseases have returned to the United States.

If and when someone tries to investigate the inaccurate claim that vaccines cause autism or are unsafe, they may consult a health care professional at some point during the process, but people frequently turn to an online search to resolve such matters (Ruiz & Bell, 2014). In executing an online search, it can be difficult for a layperson to separate fact from speculation, conjecture, or outright fiction without additional research, which often leads further into anti-vaccination literature. Unlike *ATS*, this information may be circulated as a stand-alone piece of evidence that offers viewers (limited or) no opportunity to offer a comment and read or interact with comments from others—which means that many claims might be presented without a counterargument.

As Ruiz and Bell (2014) point out, content analyses are helpful in determining the range of arguments someone might encounter online, but fail to explain how individuals process, interpret, and negotiate such claims. Dube et al.

(2013) also took issue with viewing the matter of vaccination as a binary issue in which boxes may be checked, noting that beliefs are more fluid and that greater attention should be paid to the “processes and pathways” that lead to people refusing vaccines, as well as the “broader socio-cultural context within which these barriers are rooted” (p. 1770). Finally, Jolley and Douglas (2014) demonstrate that conspiracy theories regarding vaccination “directly affect vaccination intentions” and suggest future approaches “focus on direct counterarguments” against such claims.

This study filled a gap in the scholarly conversation in that previous studies examined anti-vaccine websites rather than the individuals who might frequent such sites. I adopted a grounded theory approach toward the discourse, and documented recurring patterns of behavior within and across threads. Through incident-by-incident coding, I charted how particular claims were negotiated and resolved, in an attempt to better answer the research question: “In what ways do vaccine-hesitant individuals justify their beliefs when those views are questioned in an online forum by those who favor the recommended inoculation schedule?”

A study of the most prominent threads on the conspiracy theory forum *ATS* over a 5-year period demonstrated that vaccine-hesitant individuals tended to justify their beliefs by relying upon personal experience and research. When justifying beliefs on the basis of personal experience, vivid anecdotes regarding inoculation were (re)circulated. When justifying beliefs on the basis of research, individuals tended to try and debate the science of vaccines, or questioned the trustworthiness of pharmaceutical companies. This frequently included an attempt to devalue findings in the mainstream scientific community and valorize the work of “independent” investigators and researchers.

Support of and opposition to vaccines are often characterized in binary terms, which captures only the polar ends of a broad spectrum of belief. Some parents who have had their children vaccinated may have been hesitant rather than enthusiastic, just as others who are categorized as “anti-vaccinationist” may in fact only be opposed to a particular formula of a single vaccine, rather than vaccines in toto. This project supports the notion by Kata (2012), Dube (2013), and others who adopt the idea of a hesitancy spectrum by identifying uncertainty and confusion as two key themes in vaccine-hesitant discourse.

An examination of the most frequently recurring arguments made by vaccine-hesitant individuals first showed that justifications for such beliefs were far more sophisticated than what mainstream proponents of inoculation presume—both in health care facilities and online forums. The most common argument was a variation of the “Too Many, Too Soon” claim that children receive too many inoculations on the recommended schedule, and that the bulk of studies only reviewed a single vaccine rather than the combined effects of all recommended vaccines. Another frequent comment by individuals who might identify as vaccine-hesitant was one

of general confusion regarding competing claims in the literature, and how to reconcile mutually exclusive arguments as a responsible parent. Blanket claims of the efficacy of vaccines proved to be remarkably ineffective in assuaging such concerns, and points to the need for greater consideration of both the historical context and specific arguments against vaccination.

There were a variety of limitations in this endeavor. The first notable limitation is that this study focused upon one (well-trafficked) online discussion forum and that these observations were not tested beyond the bounds of that site, so certain findings may not hold true in a different setting. Second, the individuated nature of grounded theory means that the analysis is limited by my own ability to observe patterns and interactions that occurred on the site—in a sense, all such findings are to some extent autobiographical in nature. Another researcher could examine the same threads and interpret them in a different fashion.

Future research could examine the role of narratives in far greater detail in an attempt to articulate which particular elements tend to persuade, and how and why. The findings of such research could suggest fruitful paths for health care professionals to take that address the root cause of such concerns and to potentially craft counter-narratives that, for example, might detail personal experiences with vaccine-preventable diseases. Another effort might be a controlled experiment with pre- and post-tests to check attitudes regarding vaccinations before and after reading threads in online message boards.

Caustic interactions tend to generate more heat than light, and this study has shown it is far more effective to interact and engage with content in a patient and civil manner. If and when conversations broke down, it was almost always due to a dismissive or impatient attitude, which would then lead to derogatory one-liners and name-calling. These online interactions offer a window into how vaccine-hesitant individuals might interact with their physicians, or how they might *want* to interact with health care professionals on the subject.

Although a hardened segment of those who oppose vaccinations might be immune to attempts at persuasion, it seems that many others are left confused or with questions after encountering a troubling bit of information online regarding vaccines. In these, and in most instances, what is required is not only a familiarity with the most frequently occurring arguments, but how to respond empathetically to the root cause of such a concern. Vaccine-hesitant individuals, for the most part, are not anti-science but have an abundance of caution for the welfare of their children. When such concerns are met with bland reassurances of the efficacy of vaccines, a parent may feel they are not being listened to, and those seeds of doubt begin to take root.

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