

# Rumor Communities: The Social Dimensions of Internet Political Misperceptions\*

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*Objective.* This study illuminates the communicative and social qualities of naturally occurring public resistance to authoritative debunking of political misperceptions, rumors, and conspiracy theories. Developing the concept of a “rumor community,” it highlights aspects of rumoring processes overlooked by psychological approaches common in misperception research. *Methods.* Over 2,000 user-generated comments from the “vaccines cause autism” rumor community, produced as the medical study that had sparked the rumor was retracted and ultimately denounced as fraudulent, are examined for their contribution to the public conversation about vaccine safety. *Results.* Rumor community members publicly counterargue debunking messages, which creates a communication environment offering argumentative resources to community members and reaffirming the community’s solidarity. Members assert their credibility to gain authority to speak, countering science with personal experience. Highlighting their interconnection with more conventional social groups and venerable social truisms, members generate discourse that legitimates their beliefs. *Conclusions.* The process of rumor debunking does not solely involve psychological persuasion but must also account for the social geography of rumor communities and their contributions to the communication environment.

Current research on political misperceptions favors a modernist perspective and a psychological research paradigm. It typically emphasizes factual inaccuracies of individual beliefs and theorizes how individuals came to hold or spread those beliefs, what sorts of messages might dispel them, and impacts of inaccurate beliefs on political opinions. Communication is conceptualized as transmitting inaccurate or accurate information, and public opinion is conceptualized as the aggregation of individual opinions. Yet political misperceptions have social as well as psychological dimensions. They are not only spread from person to person; they generate communities of believers and both draw from and contribute to political culture. They persist in part because they give concrete form to otherwise inexpressible social concerns, not because they are true in any kind of modernist sense. These characteristics, common to rumors, conspiracy theories, and political misperceptions, are better understood with a cultural approach to communication (Carey, 1989) that highlights their relational and ritualistic qualities.

This study examines the rumor community fostering the belief that childhood immunizations can cause autism. Political communication research tends to neglect public health policy, a context where personal liberty and community interest uniquely interact. Yet many health issues generate intense political conflict, abortion and the cost of care being outstanding examples. Many members of the anti-vaccine movement commonly

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describe themselves as engaged in political action, resisting government and public health authorities. Scientific and public health experts have debunked the misperception, yet ardent believers continue to agitate against childhood vaccinations. The rumor community's political activities are both visible and archived in Internet coverage of the debunking and public responses to it. Responding to online news coverage and blog posts, rumor community members publicly counterargue official messages about vaccine safety, offer social support to fellow community members, and encourage susceptible others to identify with their cause, altering the communication environment in which debunking messages circulate. Explicating the social and communicative aspects of these public conversations fills an important theoretical gap in the literature on political misperceptions and has consequences for practical attempts at debunking.

### **Rumors, Conspiracies, Misperceptions, and Communities**

Rumor and conspiracy research indirectly acknowledges the political contexts in which they arise. Early rumor propagation studies were outgrowths of propaganda studies during the two world wars (e.g., Allport and Postman, 1946). In that context, rumor was defined as a "proposition or belief, passed along from person to person, usually by word of mouth, without secure standards of evidence being presented" (Allport and Postman, 1947:ix), although rumor research also typically acknowledges some rumors are true. Conspiracy theory scholarship is contextualized with more contemporary political events. Conspiracy theories are defined as "a chain of apparently unrelated events or actions . . . linked to reveal concerted actions and intentions to cause all sorts of social, economic, political, religious, and moral problems" (Stewart, Smith, and Denton, 1994:52–53). Political misperceptions research takes an especially modernist approach, defining misperceptions as belief in a demonstrably false political "fact" that must be corrected to ensure informed democratic participation (e.g., Kuklinski et al., 2000; Nyhan and Reifler, 2010).

Rumor psychology scholars seek to understand why individuals are susceptible to believing rumors and what prompts individuals to spread them. Ambiguity, importance, anxiety, and credulity predict a rumor's generation and transmission (Rosnow, 1988). As rumors spread, they are transformed to reflect the individual's needs and desires (Allport and Postman, 1946, 1947; Buckner, 1965). Conspiracy theories are similarly said to speak to an individual's psychological desire to "explain a complex, often chaotic and sometimes stupefying world" (Goldzweig, 2002:495). Political misperception scholars have observed a related phenomenon, motivated reasoning, which helps explain why an individual's political misperceptions tend to align with his or her political attitudes (e.g., Meirick, 2013; Nyhan and Reifler, 2010). Sources of rumor also affect believability and motivation to transmit. Shibutani (1966) explains that when official information or news sources are restricted, rumors are created instead. They are "unconfirmed hypotheses" to explain uncertain situations (Rosnow, 1988). Via credible opinion leaders, rumors diffuse more rapidly (Pendleton, 1998), and in the absence of credible opinion leaders, people seek reinforcing information prior to repeating the message (Weinberg and Eich, 1978; Weinberg et al., 1980). Buckner (1965) discusses rumor chains (person spreading the rumor to a person hearing the rumor for the first time) and networks (a rumor is heard from more than one source) in the context of psychological predispositions. The more someone hears a rumor, the more likely he or she will share the rumor with others (Garrett, 2011). Taken as a whole, this body of research illuminates how psychological predispositions, message

processing, and source credibility influence the acceptance and transmission of rumors, conspiracy theories and misperceptions.

Some studies go beyond the psychological perspective, assessing the social dimensions of rumors and conspiracy theories as a form of collective meaning making (Weinberg and Eich, 1978). DiFonzo and Bordia (2007) argue rumors help people make sense of the world at a collective level. Rumors and conspiracy theories are typically created in moments that generate a shared need for understanding: a novel occurrence of collective importance. For example, Larsen contends virtually every disaster situation results in rumors (1954:111). From this perspective, sharing rumors is a problem-solving process in which individuals continually refer to the group until a collective meaning for an ambiguous aspect of reality is created and shared (Kapferer, 1989; Shibutani, 1966). Fine and Khawaja (2005) argue rumors spread and survive based upon their credibility and plausibility. Credibility derives from the spreader's identity; plausibility has a social dimension. Receivers evaluate rumors by asking themselves: "Are these claims that could reasonably be thought likely to happen within the world as we know it?" (Fine and Khawaja, 2005:190). Here, rumoring involves not an individual, psychological predisposition to spread misinformation, but a shared need for understanding and support and a common construal of the social world.

Thinking of rumors as collective meaning making suggests the presence of rumor communities rather than the rumor chains suggested by traditional transmission (Carey, 1989), models of communication. Fine and Turner (2001) demonstrate rumor sharing can define social group boundaries. People with similar demographic characteristics (e.g., race, ethnicity, religion) may share similar rumors distinguishing them from other groups that share an opposing belief. Bordia and DiFonzo call rumors a "social interchange" that "serves three broad goals: acting effectively, building and maintaining relationships, and managing favorable self-impression" (2005: 88). Only the first goal spurs people to find out the truth; the other two may be served just as well by perpetuating a false rumor. Moreover, only long-term relational goals encourage sharing accurate information. Short-term relational goals may involve "grabbing the attention of the listener, appearing 'in the know,'[and] maintaining the status differences" (Bordia and DiFonzo, 2005:92).

Shibutani (1966) used the term "collective transaction" to describe group processes that generated and shaped rumors. He was primarily interested in how these processes affected rumor content and suggested rumors faded when the ambiguity giving rise to them was resolved. Yet recent political misperception and rumor research reveals misperceptions are remarkably resilient. DiFonzo et al.'s (2013) experiments showed small minorities could sustain rumors. Moreover, varying the social networks in which people interacted did not produce significantly different tendencies toward consensus. This raises questions about whether and how rumor communities might become self-sustaining, warding off the resolution of ambiguity and providing social support to community members. It also suggests *what* is said in the networks matters. Their study shows rising consensus levels produce greater confidence in a rumor, but if mere repetition were enough to create consensus, minority belief would eventually die away (Noelle-Neumann, 1974).

Early rumor scholars studied rumor transmission and transformation in interpersonal, face-to-face contexts (Allport and Postman, 1947). Recently, scholars have explored other transmission channels, including e-mail, online discussion boards, mainstream media Internet sites, and blogs (Al-Kandari, 2010; DiFonzo et al., 2013; Garrett, 2011; Podoshen and Hunt, 2009). Modern communication technologies such as the Internet introduce an eternal, temporal dimension to misperceptions, conspiracy theories, and rumors, allowing them to not only survive but thrive (e.g., Miller, 2002). While Internet technologies such as e-mail fit the communicative model of a rumor chain, other types of online

communication such as discussion boards, websites, and user-generated responses to news suggest the presence of rumor communities. Public communication not only (and perhaps not primarily) spreads the rumor; it offers mutual social support to a community of believers, encouraging continued belief in the face of debunking messages.

In many cases, rumors, conspiracy theories, and misperceptions are debunked by social authorities (e.g., Larsen, 1954; Weinberg and Eich, 1978). Here, political misperception and rumor research part ways with critical political communication research. Misperception and rumor researchers adopt a functionalist perspective, asking how political authorities can be more effective in debunking individuals' false beliefs (e.g., Samaan et al., 2005). Critical political communication research traditionally asks how citizens can be encouraged to take a more critical stance toward government directives. These two perspectives are not necessarily contradictory. Researchers in the functionalist tradition do not advocate propagandizing, nor do critical scholars advocate cynical distrust of every government statement. Yet, functionalists should recognize the communicative tools their scholarship generates can be used to more effectively propagandize as well as to more effectively inform, and critical scholars should recognize not all citizen resistance to government directives has prosocial outcomes. When such resistance is based on misperceptions, its dark side is revealed, as is the need for more sophisticated democratic theory that does not uncritically value either citizen compliance or citizen activism.

When a rumor, conspiracy theory, or misperception is debunked, rumor communities face a threat to their existence. They respond not only with psychological resistance, but by publicly responding to and counterarguing debunking messages, asserting their credibility as speakers to assess the rumor's validity, and highlighting their interconnection with more conventional social groups. Where some research perspectives view such behaviors as expressions of psychological states and traits or explore person-to-person linkages sustaining the rumor, this analysis examines the communicative and social dimensions of such political behavior in public forums.

## Method

In 1998, a British medical journal, *The Lancet*, published a study by Dr. Andrew Wakefield claiming a link between the measles-mumps-rubella (MMR) vaccine and autism, generating a flurry of concern in the British press. Two years later, a U.S. congressional committee held a hearing on vaccines and autism, asking the Department of Health and Human Services to conduct a study on the potential link. By 2001, though, mounting scientific evidence disconfirmed the link, and government officials began working to debunk the idea that vaccines might cause autism. Despite the public communication efforts of government and medical authorities, the story refused to die and began to have public health consequences. Some parents declined to vaccinate their children, and there was a resurgence of illnesses once thought conquered. A national outbreak of measles in 2008, the worst in over a decade, was blamed on declining vaccination rates (Harris, 2008).

Within the discipline of communication, modernist perspectives common in health communication research dominate the study of public health, with the key questions involving the transmission of accurate information from health authorities to the public. Public health is not typically thought of as an area of political conflict, yet public health regulations are a potential source of political conflict, for they regulate individual behavior on behalf of the community. The Centers for Disease Control and Prevention (CDC), a U.S. government health agency, requires vaccinations for students to register in public schools,

although states allow exemptions for religious or philosophical reasons (CDC, 2011a). Some states also require vaccinations for health-care workers, residential developmentally disabled patients, and prisoners (CDC, 2011b). The CDC also makes recommendations regarding what vaccinations people should have and when they should get them. Having a vaccination, like casting a vote, is a regulated behavior that can be an object of political struggle over when and under what circumstances it can be done.

This study conceptualizes the Internet as a public space for discussion that (1) offers opportunities for distinctive enclaves of opinion to be self-supporting (see Baym, 2006), but also (2) offers opportunities for some clash between opinion communities. DiFonzo et al.'s (2013) lab-based studies suggest these contrasting patterns of communication produce statistically similar tendencies toward consensus and allow small minorities to sustain a rumor. The news media often played host to the vaccines-cause-autism debate by providing a public forum via their online outlets. "Balanced" reporting norms meant journalists published not only the reports of the debunked medical theory but also ongoing questions (see Williams and Delli Carpini, 2011). Thus, the media cannot be seen strictly as agents of the institutional effort to convince the public vaccines are safe. Instead, the traditional news media, advocacy groups, bloggers, and advocates provided a public space for debunkers and resisters to engage in naturally occurring public discussion, a process made visible by the venue.

The vaccine safety debate has been long, but two key points were especially challenging to vaccine opponents. On February 2, 2010, *The Lancet* retracted its publication of Wakefield's study linking the MMR vaccine to autism (Harris, 2010), and on January 6, 2011, the study was denounced as a fraud (Godlee, 2011). Although the debate over vaccines and autism had by now spread far beyond Wakefield's original claims, discrediting the work that had given rise to the debate was a serious blow to those who claimed a link. We explore user-generated content on cached Internet websites centered on these key moments to understand how the rumor continued to be supported in light of fundamental challenges. Google searches were conducted using the terms "vaccine AND autism 2010," and "vaccine AND autism 2011." The 2010 search yielded over 4 million results, while the 2011 search yielded over 7 million results. To limit the data pool to a manageable form for qualitative analysis and mimic the way outsiders new to the vaccine safety debate would have encountered it online, the top 25 hits for each search were examined for reports archiving user comments. This yielded 11 websites for the 2010 search, and 17 websites for the 2011 search.

The 28 websites the study includes are quite varied: 17 mainstream news websites; six advocacy organizations on autism, child health, and science; one independent blog hosted on a personal publishing platform; one entertainment news website; one generic online source for information and advice; one support forum for chronic fatigue syndrome and other health news; and one medical institution website. Content on these websites took various forms as well: 18 were articles, eight were blogs (mostly sponsored by news organizations), one was a radio program transcript, and one was a video with a descriptive caption. The 28 webpages archiving user-generated comments cover a diverse range of vaccine-autism topics. The searches revealed sites with articles giving credence to the rumor, as well as those attempting to debunk the rumor. The 2010 pages consisted of eight articles reporting the debunking or retraction of autism links to vaccines, the preservative thimerosal within vaccines, or scheduling of vaccinations. One post counterargued the thimerosal debunking, and another reported that pediatricians who advise against vaccines have fewer autistic patients. Finally, an article reported Jenny McCarthy's autism-vaccine advocacy, despite the discovery her son is not autistic as previously thought. In 2011, website content consisted of six articles or video interviews reporting the Wakefield study

as fraudulent. Five articles criticize claims from parents and media that vaccines cause autism despite continual debunking. Finally, six articles report new studies supporting a link between vaccines and autism including a report linking encephalitis to vaccines and another based on vaccine court rulings; two of these articles attempt to discredit the new studies. URLs current at the time of data collection are available from the authors.

In this study, we focus on how the rumor community talked back to official debunkers and so only examine comments overtly resisting official and scientific efforts to counter the misperception. Comments that did not indicate or were unclear in their bias against debunking were few and were excluded from the data pool, resulting in a data set of over 2,000 user-generated comments. Both researchers examined these comments iteratively. Rather than imposing researcher-created categories on the naturally occurring discourse, we work inductively to identify patterns in the comments, preserving the external validity of phenomena not generated in response to a particular research agenda. We make every attempt to preserve language choices, offering minor edits to improve clarity but wherever possible preserving contributors' words, grammar, punctuation, and capitalization choices. Avoiding the modernist assumptions of traditional misperception scholarship, we do not consider the "truth value" of comments but only their role in sustaining the rumor community. In our analysis, we do not speculate as to the identity of the contributors. We cannot know their gender or nationality with any certainty. However, it is important to note that the community contributing user-generated content is quite large. Very rarely do we quote the same person twice in the discussion that follows.

Our study is not about rumor transmission processes; the content users comment on serves to transmit the rumor. Nor is it our goal to measure or model individual rumor believers' behavior or how rumor content is negotiated among community members. Rather, we examine how the *collectively* generated discourse of the rumor community sustains public conversation about the rumor. Understanding how rumors are sustained on a social level yields insight into the persistence of rumors after they have been publicly corrected from multiple sources on a mass scale. Patterns are documented with representative examples from the discourse itself.

### **Sustaining Ambiguity: Public Counterarguing**

Persuasion scholarship describes psychological counterarguing as a classic tool for resisting persuasion (Niederdeppe et al., 2012). Indeed, Redlawsk (2002) suggests in his study of motivated reasoning that psychologically counterarguing negative information about a preferred candidate may actually result in stronger support for the candidate after exposure to negative information about him or her. From a sociological perspective, counterarguing can serve a different function. Shibutani (1966) argues that ambiguity sustains rumors: once a problem is resolved or ambiguity is replaced with authoritative knowledge, the rumoring process ends. Thus, to keep a rumor alive, ambiguity must be sustained, and one way to do so is to publicly raise doubts about debunking messages by counterarguing them.

*Public* counterarguing also provides social support to the rumor community by making the community aware of itself. An individual believer may be unaware of others who share his or her point of view, and such social isolation, as numerous scholars (Asch, 1951; Miller and Morrison, 2009; Morrison and Matthes, 2011; Noelle-Neumann, 1974) have demonstrated, makes such people vulnerable to persuasion or at the very least to compliance. Group solidarity, on the other hand, empowers individuals to resist persuasive efforts even

when the resisting group is very small (Allen, 1975; Asch, 1951; Oshagan, 1996), provided the resistance is publicly expressed. As Krassa observes: "It will not overcome my 'fear of social isolation' and thereby ease the psychological barriers to my voicing my own view if there are 10,000 who agree with me but I am ignorant of their existence" (1988:117). Publicly voicing counterarguments affirms a community's existence and provides individual members resources to continue psychologically and publicly resisting and counterarguing debunking efforts. Those resources have at least two forms: first, awareness of a community that shares one's beliefs and voices counterarguments one has already entertained may offer social support to sustain those beliefs. Second, encountering new arguments supporting one's point of view may give one additional resources for resisting debunking messages. Thus, both well-worn arguments that appear many times in a discourse and novel arguments that appear only once may help shore up the rumor community.

Faced with information debunking the misperception that vaccines can cause autism, members of the rumor community publicly counterargued the messages. Some insisted the link had not actually been disproved. One contributor argued: "One defective study doesn't disprove the link." Another reasoned: "Wakefield . . . was being targeted for ethics violations . . . and not because the findings of the research group he was associated with were being disputed." A third claimed vaccine makers themselves acknowledged the link, observing a vaccine maker has: "**AUTISM** listed as a potential adverse reaction on page 11 of their label. What other 'evidence' is needed when the makers themselves acknowledge a link?"

Other counterarguments went further, establishing untenable standards of proof that made the misperception immune to debunking. Some demanded proof vaccines did *not* cause autism, formulating a question science is incapable of answering:

NO ONE KNOWS WHAT CAUSES AUTISM<. They don't know the medical community has no idea, so therefore they can't say that it isn't the vaccines. . . . I am sick to death of people saying they know that vaccines don't cause autism the truth is they know nothing and can't prove anything.

Members of the rumor community also demanded absolute proof vaccines were safe. For example, one demanded proof that vaccines are safe for all children:

But we need more testing. Genuine testing. Anyone reputable in the medical community knows that we need to do more research to figure out if in some sub-groups vaccines are unsafe. To dismiss the possibility outright is a dangerous form of group denial and suggests that we abandon real scientific principles of research.

Others demanded proof not only that vaccines were safe, but that the vaccine schedule was safe: "[T]here's never been any studies on long term effects of multiple shots (my son had 24+ by age 2) so the vaccine question is still on the table [in my opinion]." Another contributor's demand for absolute proof was couched in an extremely close reading of the debunking message:

If you listen carefully to the NPR story, you will find fuzzy language that makes the accusation of "fraud" an exaggeration. If five out of 12 kids has "preexisting developmental problems," what are they? Who diagnosed them? How long before vaccinations with MMR did those problems appear? . . . The diagnosis of "autism" is very broad and is often referred to as the "autism spectrum." What was the diagnosis of each of these children? Who diagnosed them? Did they have symptoms of autism?

Other community members countered claims that Wakefield's study was bad science with alternative reasoning supporting Wakefield's original claims or with their own naïve science

attributing the link to causes beyond the scope of Wakefield's study. Some commenters, drawing on early speculation that it was the mercury-based preservative thimerosal in vaccines that led to autism, did "mercury math" to support their claims vaccines were dangerous:

1 dose of vaccine with Thimerosal—25 micrograms of mercury. FDA maximum recommended ingested mercury intake per day for a 20 lb baby—0.9 micrograms. Why is it ok for a baby to have that much mercury (via preservative Thimerosal) in an injection?

Another form of mercury math involved the multiple sources of mercury in the environment and the potential of vaccines to exacerbate exposure problems:

Perhaps vaccines containing mercury simply play a PART in the autism factor. High Fructose Corn Syrup also contains mercury. That means that before conception, during gestation, after birth (esp if nursing) that child has received doses of mercury that you never even guessed about.

These claims are somewhat striking since the preservative thimerosal was no longer used in the MMR vaccine by the time Wakefield's study was debunked (National Research Council, 2004). Members of the rumor community had two responses to this. Some argued that removal of thimerosal constituted a tacit admission by social authorities that it was unsafe (and, by extension, that it caused autism). Others argued old vaccines manufactured before the ban were still being administered and causing autism.

Some naïve scientists said it was neither the mercury preservative nor the vaccines themselves causing autism but rather the vaccination schedule imposed upon children by the medical establishment: "Promoting an untested vaccine schedule is the equivalent of playing Russian Roulette with our kids." Others, confusing correlation with causality, described personal experiences of receiving an autism diagnosis following vaccinations or linked vaccinations to the rising number of autism diagnoses. One asked: "What are your thoughts about the 600% increase in autism? [One] in 70 boys are now diagnosed." Another argued: "And not only is it obvious that the numbers [of autistic children] have drastically increased, requiring not ONLY a genetic predisposition, but an environmental catalyst."

A third line of reasoning justifying membership in the rumor community even when scientific evidence did not currently support a link between vaccines and autism was that the vaccinations were more dangerous than the diseases they prevented. Faced with risking measles or risking autism, it might make sense to pick measles. Said one: "Worrying about the threat of infection disease while we have a raging autism crisis is like putting out a lit match with a firehose meanwhile the entire forest burning." Another reasoned: "Measles, mumps and rubella are not usually life threatening diseases. Why risk any possibility of harming our children in any way just to save them from the possibility of discomfort?"

These public counterarguments serve to sustain the ambiguity of the social situation; indeed, they are so effective at doing so it is difficult to conceive of what sort of authoritative institutional communication might put an end to the misperception. In this respect, they are similar to the public counterarguments of the "birther" rumor community rejecting each new piece of evidence that President Barack Obama was born in the United States (Hamby, 2012). Increasingly conclusive scientific evidence that vaccines do not cause autism seems likely to meet a similar fate. The public nature of these counterarguments also sustains the community with the promise that believers are not isolated "cranks" but rather members of a group of concerned citizens.



## Source Credibility

Modern source credibility research leaves its evaluation to audiences that are typically asked to assess it using a reified, if well validated, set of criteria (McCroskey, Holdridge, and Toomb, 1974). Much source credibility research focuses on face-to-face communication in experimental settings in which a particular aspect of speaker performance is manipulated and the results in terms of speaker credibility are measured (e.g., Brownlow, 1992; Duller et al., 1992). Traditional rumor research relies on a somewhat similar conceptualization of source credibility, taking the rumor-hearer's perspective and asking how credible the hearer finds the rumor's source (Pendleton, 1998; Rosnow, 1988). Credibility is attributed to social location (e.g., heard from an apparently "official" source) (Pendleton, 1998), personal relationships (e.g., heard from a trusted friend) (Porter, 1984), or repetition (e.g., heard many times over) among other things (Garrett, 2011). Members of an Internet rumor community have virtually none of these traditional resources at their disposal save perhaps repetition. Moreover, the debunking messages they resist are generated by people who can claim to be official sources of public knowledge, and Shibutani (1966) argues that where people have faith in institutional channels, rumors dissipate once those channels have addressed the ambiguous situation. To sustain the rumor, rumor community members need to undermine institutional authority and represent *themselves* as credible sources.

In the case of the vaccines-cause-autism rumor community, some posters made credibility claims that they had relevant scientific or technical expertise. One claimed to be "a mercury scientist. Young children and other vulnerable people are exposed to mercury from Thimerosal in vaccines but that's not where the mercury story ends." Another said he (or she) was "a PhD statistician and I have to admit that I found the statistical analysis in this paper to be quite reasonable." A third made the umbrella claim that educated people were more likely to be anti-vaccine activists: "Children of parents with advanced degrees have the lowest rates of full vaccination in the US. Read up and see how many activist parents are doctors or engineers."

Another group's credibility claims relied on eyewitness authority (Edy, 2006; Zelizer, 1998), asserting their personal experiences qualified them to speak: "I have two autistic sons. Vaccines are not safe for all children . . . Believe me, I watched this happen to my son, Caleb. He was never the same after his MMR shot." Another said: "It is so completely obvious when we see it happen to our child, then meet so many others with the same story to tell!" Some used their eyewitness authority to make not absolute but relative credibility claims, asserting they were more qualified than others to speak: "And until you watch your child slip into their own world and not be able to function when they previously could right after a bunch of vaccines then please keep your mouth shut. . . . Please do not speak on which you do not know." Another poster went even further: "Anyone who . . . is not going through this type of ordeal day in and day out should not have any opinion whatsoever." Others couched this relative claim to credibility in terms of a right to be heard: "You have no right to speak so hatefully to autismmom. . . . You should respect her beliefs." Another appealed to a free speech standard, suggesting everyone had a right to be heard:

Are you . . . calling for censorship because you don't agree with [his] right to question the medical establishment? And do you both want to stop the Huffington Post from printing opinions that don't agree with yours? That is pretty bold for both of you. So much for freedom of the press, huh? . . . And anyone who dares question vaccines and their potential links to autism and calls for more research should be censored? Amazing.

Little is known about how such source credibility claims impact audiences, but enticing anecdotal evidence suggests eyewitness authority may be distinctively powerful in online political communication. Research in another online political context revealed that factual evidence was contested, but personal experience was accepted as incontrovertible (van Zoonen et al., 2007). The rumor community's personal experiences may thus be a uniquely powerful tool for resisting the scientific discourse in debunking messages.

### Legitimizing the Rumor Community

Research on conspiracy theories addresses their appeal for making sense of complex events or seemingly inexplicable tragedies and typically emphasizes their outlandishly elaborate explanations (e.g., Miller, 2002). However, a community's myths and rumors typically speak to its values and anxieties (Orenstein, 2002). Recent research on misperception debunking by Garrett et al. (2013) illuminates a potential connection between the psychology of belief traditionally examined in misperception scholarship and shared social values. The authors demonstrate that debunking messages may fail when they cue social stereotypes, suggesting that messages drawing upon socially shared truisms may actually shore up support for a rumor. From a more sociological perspective, when members of the rumor community explicitly and publicly incorporate social values and anxieties into the rumor, they reinforce the ambiguity sustaining the rumor (Shibutani, 1966). They also expand the "public" for the rumor (Shibutani) by linking their specific belief to more widely shared aspects of political culture in ways that enhance their social legitimacy and make the rumor relevant to additional potential stakeholders.

Members of the vaccines-cause-autism rumor community identified themselves with the wider community of parents concerned for their children's health. Said one: "Parents are right to be skeptical of what 'scientists say,' especially if it goes against what is intuitive and what they have seen in the world around them." Another observed: "Moms know their kids better than doctors. Doctors give bad advice every day." A third overtly argued that parental wisdom trumps scientific knowledge:

[A] distressingly significant number of scientific studies are not scientifically reliable, & that most parents are reasonably reliable judges of their children's health & development. Still, all parents are treated as if they are clueless hysterics who were oblivious to their child's autistic traits prior to vaccinations & then hyper-conscious of everything afterward. . . . They just hypothesize that all those parents are liars or stupid and are content to leave it at that.

One identified the anti-vaccine community with the autism community:

I believe that our vaccine program is the main cause of the huge increase in autism that we have seen over the past 25 years—though not the only cause. I know good parents who work incredibly hard for their children and who don't agree with me on this. We work together on planning various kinds of events for the autism community. We are not enemies even though we have different opinions.

A few rumor community members both identified with more legitimate social groups and invoked underlying values by explicating the rumor in the language of partisan politics. A conservative poster argued: "Typical Obama-style liberal elitism is at the root of this fraud and its tragic outcome. Such 'science', in fact, is a part of the Democrat-led, Socialist conspiracy determined to undermine our way of life." A liberal poster observed: "[A]fter having republicans in office for 8 years maybe. the corporations make the laws so all of the

money runs to their pockets . . . at the expense of our health . . . then they throw us away. this whole set up is a crock.”

Appeals to broader social anxieties took a variety of forms, but one of the more common was that big businesses placed profit over people. A narrow appeal to this concern drew a historical analogy (Edy, 1999) between tobacco companies' denials that cigarettes cause cancer and pharmaceutical companies' denials that vaccines cause autism. One said: “To call this an overblown fear is pretty foolish—I remember when tobacco companies produced studies saying smoking cigarettes did not cause cancer.” Some described the pharmaceutical industry as a money-hungry big business that would do anything to protect its profits. Said one: “There is way too much money involved in the manufacture of these vaccines to let anyone question their safety.” Another suggested something more conspiratorial: “The lack of common sense interest in considering this as a plausible cause significantly makes it appear to me as if the vaccine industry is hiding something.” A third demanded:

And why didn't you ask who actually did all the studies that “proved” that there is no link between vaccines and autism? It would have been interesting to note that the pharmaceutical companies did them. I urge you to do a show now with people from the vast base of parents and professionals who will provide compelling argument to support a probable link.

Some claimed institutionalized medicine more generally was culpable in this deception. One suggested vaccination advocates have a financial interest in the industry. Another observed,

I'm afraid you don't have a very good understanding of the influence of money as the primary formative factor in what is called “medicine” today. Time and time again, when a researcher or doctor finds a virtual cure, or just information questioning or contradicting what the pharmaceutically = based medical industry believes, they are ignored, pooh-pooed, or blackballed.

An even angrier poster argued: “Pediaquacks . . . are the same white coat drug dealing doctors who are paid off by the pharmahops with pens, post its, free lunches, trips and travel and who knows what else . . . Keep your poison and if you want to experiment on something, get a guinea pig!”

Another social anxiety posters gave voice to was mistrust of government. One complained, “I can't believe a word any Government says about this subject as they are all corrupt. They are only looking to save their own hides from a terrible Public Backlash that would ensue if caught.” Like expressions of distrust in big business, expressions of distrust in government sometimes suggest collusion between powerful social actors. Suggesting both collusion and shared responsibility, one argued: “Our governments and drug companies won't admit to any responsibility because there wouldn't be enough money or time in the world to compensate for the damage they have caused.” Another linked government and big business through lobbying: “Believe me sir, your whole medical community is one big monopoly. Their lobbyists are very influential in Congress at getting their ways. Big Pharma donate significant amounts of money during election cycles.” Still other contributors voiced the broad social concern that the media cannot be trusted and once again suggested a collusion of powerful social actors against the little guy. Said one: “The media will report what their wealthy sponsors want them to report. We have no hope of ever knowing the truth.”

Some sought legitimacy for their community by couching their arguments in terms of reason and common sense. One said: “Please tell me that we can all at least agree that if vaccines can be made without using toxic substances (which they can) we should at

least do that.” Another argued: “So there needs to be money spent on vaccine safety or there doesn’t? If you think there does (which you do), at least you’re admitting they’re not safe.” One might also note the overall tone of many rumor community comments. Many contributors, despite displaying a certain scientific naïveté, ground their arguments in reasoning, and some adopt a semi-scientific style of expression. Like the scientists they oppose, they argue their position as a reasoned response to available evidence and express frustration at the apparent dismissal of their concerns.

Traditional research on conspiracy theories might point out the byzantine webs of secrecy required to enact the posited conspiracy, but the specific claims of the vaccines-cause-autism rumor community suggest a different narrative paradigm. The believers publicly represent themselves as normal, reasonable people belonging to legitimate social groups such as parents or friends and relatives of those with autism. The concerns and anxieties they express are widely shared throughout the society: that powerful social entities take advantage of the powerless and cannot be held accountable. The perspective they advocate appeals to cultural axioms (Shibutani, 1966) that legitimate their position to a public much broader than their community of believers and may be at least as appealing as the cold reason of scientific evidence.

## Conclusion

This study reveals the *social features* rather than cognitive associations promoting rumor evolution and misperception retention. Traditional rumor research involves person-to-person rumor transmissions and personal decisions about whether or not to believe and retransmit a rumor. Moving from this concept of a rumor chain to one of a rumor community reveals more than the collectively generated response to an ambiguous social reality Shibutani posited (1966). The vaccines-cause-autism rumor community’s discourse reveals expressions of shared identity and common cause with fellow believers grounded not in preexisting social identities (such as race, religion, or political ideology), nor in clustered networks of believers, but instead persisting in an open public forum. Their discourse joins the debunking messages in a communication environment that public authorities cannot monopolize. Understanding these social dimensions of rumoring has important implications for debunking political rumors, conspiracy theories, and political misperceptions.

The response of the vaccines-cause-autism rumor community to repeated debunking of its central *raison d’être* reveals ongoing work to preserve ambiguity. Anecdotal evidence from other high-profile political misperceptions, such as the “birther” community, suggests this may be a typical response from a threatened rumor community. This illuminates the function of some psychological counterarguing that may undermine attempts to debunk rumors. Yet, a second challenge for rumor debunking arises specifically from public expression of counterarguments. Public counterarguments may serve as a source of social support for the rumor community, reminding members that others share their beliefs and providing them with new resources for resisting debunking messages. Recognizing that rumor believers not only hold beliefs individually but may also participate in communities that help them sustain their beliefs suggests the process of rumor debunking is not just one of psychological persuasion but must also take into account the social geography of rumor communities. Indeed, future research on political misperceptions should investigate whether members of a rumor community develop a group identity such that renouncing a misperception carries the risk of social sanctions from fellow group members. Future research should also explore interactions between community members in public spaces, for

while public expressions of shared belief may be enough to sustain a community, building it is almost certainly an interactive process.

The ways rumor community members establish credibility to address the misperception also reveals a communication environment much changed from that of early studies of how public officials regained control of a rumor. The more diffuse political communication environment made possible by the Internet (Stroud, 2008), and the decline in widely accepted social authority (Quandt, 2012), may mean social authorities may have less power to stymie rumors than earlier scholars ascribed to them (e.g., Larsen, 1954). Eyewitness authority grounded in personal experience may trump official or scientific explanations in Internet contexts, raising new challenges for those seeking to debunk misperceptions.

A rumor's survival may depend not only on preserving ambiguity, contesting institutional authority, and providing social support to a community of believers. Misperceptions may also survive because they effectively express venerable truisms of political culture. Many of the vaccines-cause-autism rumor community's comments express widely shared political stances and social values such as distrust of big business, government, and news media. They also express solidarity with respected social groups, parents, and the autism community. A modernist take on these types of appeals might classify them as conspiracy theories, amplifying the unlikely and elaborate connections between social actors implied in such theories. However, the essential appeal of many conspiracy theories is that they speak to deep-rooted beliefs about how the social world works. The more effectively they embrace those beliefs, the greater their likely staying power and the greater the risk they will not only survive but potentially spread to broader publics.

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